

A watercolor-style portrait of an elderly woman with short, light-colored hair, resting her head on her hand. The portrait is overlaid with a golden geometric grid pattern. The background features soft watercolor washes in shades of blue, green, and yellow. The title text is positioned at the top of the image.

# HEALTHCARE PROVISION:

*Open for business?*

Florien Margareth Kruse



# **Healthcare provision: Open for business?**

Market dynamics, performance and ethics of  
commercially-oriented healthcare providers, using the  
Netherlands as a case study

Florien Margareth Kruse

**Colofon**

Healthcare provision: Open for business?

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# Healthcare provision: Open for business?

Market dynamics, performance and ethics of commercially-oriented healthcare providers, using the Netherlands as a case study

Proefschrift ter verkrijging van de graad van doctor  
aan de Radboud Universiteit Nijmegen  
op gezag van de rector magnificus prof. dr. J.H.J.M. van Krieken,  
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door  
Florien Margareth Kruse  
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te Gouda

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Doctoral Thesis

to obtain the degree of doctor  
from Radboud University Nijmegen  
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## List of abbreviations

ACL	Anterior cruciate ligament
ACM	Authority for Consumers & Markets
AIC	Akaike Information Criterion
ASA	American Society of Anesthesiologists
ASC	Ambulatory Surgical Centers
CTS	Carpal tunnel syndrome
CQI	Consumer Quality Index Cataract Questionnaire
DEA	Data Envelopment Analysis
DRG	Diagnostic-related groups
EBIT	Earnings before interest and taxes
EBITDA	Earnings before interest, taxes, depreciation and amortisation
EU	European Union
FTE	Full-time equivalent
GH	General hospital
HCP	Home-care package
IGJ	Dutch Health and Youth Care Inspectorate
ITC	Independent Treatment Centre
LOS	Length of stay
LTC	Long-term care
MCP	Modular care package
MLM	Moral Limits of Markets
NHS	National Health Service
NPS	Net Promoter Score
OM	Owner-managed
PB	Personal budget
PROMs	Patient-reported outcome measures
PE	Private equity
PQ	Publicly-quoted
RE	Random Effects
SES	Socioeconomic status
SFA	Stochastic Frontier Analysis
SQRT	Squared Root
THR	Total hip replacement
TKR	Total knee replacement
UK	United Kingdom
US	United States
VIF	Variance inflation factor





# Chapter

# 1.

**Introduction**

## 1.1. Aim of this dissertation

Many healthcare systems have witnessed the rise of for-profit healthcare providers in recent decades. Inspired by the ideology of New Public Management (NPM), policymakers have embraced market-based incentives and a commercial orientation to enhance the efficiency of healthcare systems. This dissertation examines how Dutch healthcare providers have adopted this new approach to carve out from the traditional sector certain niche markets, and to assess whether these innovations have contributed to a financially sustainable healthcare system. The nursing home and medical care providers in the Dutch healthcare system offer an interesting case study because these healthcare providers are incentivised to act as commercial entities but are simultaneously restricted by a ban on the distribution of dividends. This dissertation focuses on commercially-oriented providers, encompassing both (i) providers that distribute profits to their shareholders (i.e. for-profit entities); and (ii) commercial non-profit providers that have adopted a new business model with the aim of maximising gross income and sharing their surpluses among their partners (e.g. physicians and owners) through means other than the distribution of dividends. Table 1.1. provides an overview of healthcare providers by degree of commercialisation and shows the position of commercially-oriented providers on this spectrum, thereby illustrating the scope of this dissertation.

**Table 1.1.** Degree of internal commercialisation by type of provider

Degree of commercialisation	Type of organisation	Commercial orientation	Ownership type
Low commercialisation	Publicly-owned, legally dependent	Non-commercially-oriented	Public
	Publicly-owned, but legally independent		
	Private-law providers, but state holds shares		
	Donative private non-profit		Private
	Commercial private non-profit		
High commercialisation	For-profit and services are publicly funded	Commercially-oriented	
	For-profit and services are privately funded		
	For-profit equity-owned providers		

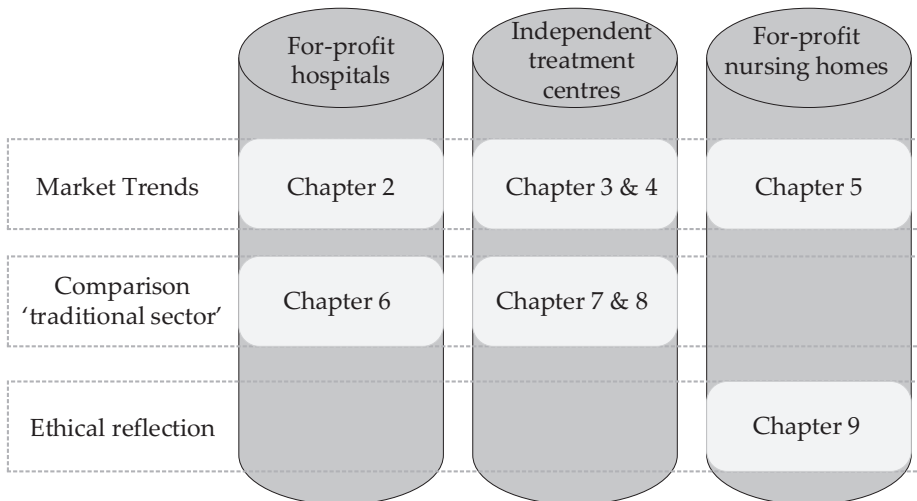
This dissertation focuses on three types of providers as case studies: for-profit hospitals, for-profit nursing homes, and commercial non-profit and for-profit independent treatment centres (ITCs).

In order to study these care providers, this dissertation examines three research questions: (1) What market trends explain the growth and/or performance of

commercially-oriented providers? (2) How do commercially-oriented (niche) providers perform in terms of costs, quality and accessibility in relation to the “traditional” sector? (3) What ethical issues arise from the provision of healthcare services by commercial niche organisations? Figure 1.1 provides a schematic outline of the dissertation.

The remainder of this chapter (i) introduces the topic; (ii) sets out the types of commercially-oriented niche providers that exist in the Dutch healthcare system; (iii) outlines the theoretical and empirical literature; (iv) presents the main research question together with its sub-questions; and, lastly, (v) provides a more detailed overview of this dissertation.

**Figure 1.1.** Schematic outline



## 1.2. Emergence of commercially-oriented healthcare providers

### 1.2.1. The birth of commercially-oriented providers of public services

In the late 1980s and early 1990s, many European and Anglo-Saxon countries, embracing neoliberalism, reckoned that to “get more for less”, public services should adopt a business mindset and become more commercially-oriented. Among other things, this powerful ideology was borne of financial instability (e.g. oil crisis and the recession in the early 80’s), increasing public deficits and deteriorating public services.<sup>1</sup> The United Kingdom (UK), under Prime Minister Margaret Thatcher (1979-1990), and the United States (US), under President Ronald Reagan (1980 – 1988), were the first to put this new approach into practice. Numerous countries followed suit such as New Zealand, Australia, the Netherlands, and Canada. This paradigm shift

was labelled and funnelled in scientific frameworks. One of the most known labels is the New Public Management (NPM) theory.<sup>2,3</sup>

NPM is a multifaceted approach, but its conventional characteristics are public budget cuts, privatisation, competition and decentralisation.<sup>4</sup> NPM in a nutshell is “a way of reorganising the public sector bodies to bring their management, reporting, and accounting approaches closer to (a particular perception of) business methods”,<sup>5</sup> p.9 The old (Weberian) bureaucracy was seen as broken, unresponsive and inefficient. Some theories on nonmarket failure explain why public ownership fell short, see Box 1.1.<sup>6</sup>

### **Box 1.1. Non-market failure theories**

Why should governments not intervene in healthcare provision? First, public providers are usually monopolies. “The absence of competition, either actual or threatened, and of the danger of take-over, reduces the incentive to keep costs to a minimum”.<sup>6</sup> p.432 As well, prices become divorced from the actual costs of production.<sup>7</sup> Secondly, public organisations have to develop their own internal goals; private goals that agency personnel seek to maximise.<sup>8</sup> In any organisation, these internal goals are used to guide, regulate and evaluate performance,<sup>7</sup> but for public providers these internal goals are not clearly spelled out and may not align with the public purpose that the organisation is supposed to serve. An internal goal could, for example, become maximising budgets.<sup>9</sup> Thirdly, public organisations can become politicised and this is often a distraction from optimising public services.<sup>10,11</sup>

### **1.2.2. Commercially-oriented providers in the healthcare sector**

NPM ideology found its way into the healthcare sector as a response to increasing healthcare costs. The Griffiths report, published in 1983, for example, trumpeted the market-based healthcare system as a solution to the National Health Services (NHS)'s problems of high costs and low responsiveness to patients' demands.<sup>12</sup> In turn, in 1991, an internal market was created, introducing a purchaser-provider split in the NHS.<sup>13</sup> The Netherlands also embraced this ideology as a cure for the illnesses of its own healthcare system.

However, market principles and healthcare provision are not a match made in heaven. As early as 1963, the founding father of healthcare economics, Kenneth Arrow, warned that the healthcare sector does not comply to the conventional script of pure market mechanisms.<sup>14</sup> Several characteristics make the healthcare market “unique”, such as information asymmetry between the patient and the healthcare provider and the nature of demand.<sup>14</sup> Ethicists too have criticised the introduction of market forces in the healthcare system. Some argue that healthcare services are not commodities and should not be treated as such.<sup>15-18</sup> Other ethicists and physicians



contend that market forces will erode the professional ethos;<sup>19,20</sup> in other words, saying that the patient-provider relationship would be damaged by market forces.<sup>21</sup>

### 1.2.3. Commercially-oriented providers in the Netherlands

Despite the concerns raised about compatibility of market principles and healthcare provision, the Netherlands did reform the healthcare system towards a more demand-led system.<sup>22</sup> (See Appendix 1.A. for a rich description of the recent policy changes in the Dutch healthcare system.) What all the Dutch market-based reforms roughly had in common is that healthcare providers, care seekers and healthcare purchasers were given a new script and new roles. According to these new roles, patients became consumers, healthcare insurers/long-term care offices became active purchasers, and healthcare providers became commercially-oriented organisations.<sup>23</sup> As one of the key documents justifying and explaining the change in paradigm at that time stated, “[t]he [financial] sustainability of the healthcare system depends on the opportunities provided to citizens and entrepreneurs. It requires an entirely different approach to regulating [the healthcare system]”.<sup>24,p.84,i</sup> Figure 1.2. provides a schematic outline of the new healthcare landscape.

The impact of the Dutch healthcare reforms became a major topic of interest for health policy analysts and economists. Various studies have analysed, for example, how effective health insurers are in their new role as purchaser<sup>26,27</sup> or what the healthcare reform’s wider ramifications are for efficiency and effectiveness.<sup>28-30</sup> However, few studies have so far analysed the role of Dutch commercially-oriented healthcare providers.

### 1.2.4. Commercially-oriented providers and the profit ban

Most healthcare systems host both public and private providers. However, the Netherlands has only private healthcare providers. This private sector in the Netherlands consists of non-profit and for-profit providers, which are distinguished by their legal structures. Where the legal structure for-profit providers permits them to distribute profits to their shareholders, the legal structure of a non-profit providers imposes the so-called “non-distribution constraint”, which prevents profit distribution. Instead, non-profits are expected to serve their beneficiary stakeholders.<sup>31</sup>

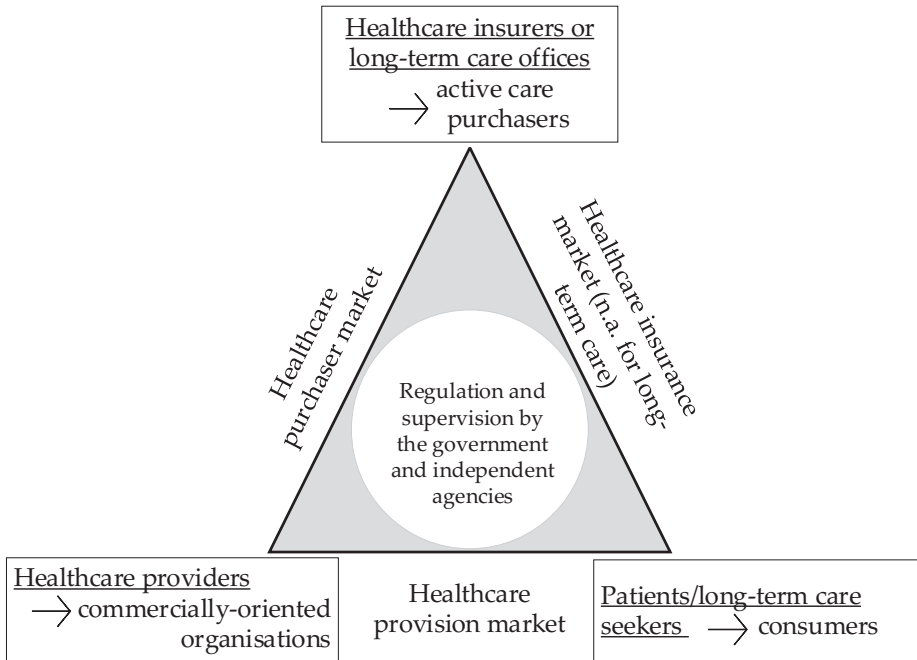
Even though the Dutch healthcare sector has adopted more market mechanisms over time and more commercially-oriented providers have sprung up, the for-profit ban in the intramural care sector remains in place.<sup>ii</sup> (See Box 1.2. for a short history of commercially-oriented providers in the Netherlands and the for-profit

i Author’s own translation of the citation: “[D]e houdbaarheid van het zorgsysteem is mede afhankelijk van de kansen die burgerschap en ondernemerschap daarin krijgt. Dat veronderstelt een wezenlijk ander sturingsfilosofie.”

ii Intramural care settings are defined as settings where care is provided on site (e.g. nursing home, hospital or independent treatment centre); hence, home-care is referred to as extramural care.

ban.) However, the ban only applies to intramural and reimbursable care under the statutory benefit package. Therefore, some types of treatments can be provided by for-profit providers, such as non-reimbursable cosmetic treatments.

**Figure 1.2.** Newly defined roles and markets after various healthcare reforms in the Netherlands<sup>iii</sup>



Unlike the Netherlands, most healthcare systems have not imposed a for-profit ban.<sup>33,45</sup> As a result, for-profit providers are more prominent in other healthcare systems (Figure 1.3). Their role as for-profit providers in mixed markets varies a lot from country to country. In some cases, they operate as rival mainstream provider, but in other cases, they serve a niche market – existing in parallel with the traditional market.<sup>46</sup> The existence of a niche market introduces additional policy concerns such as cream-skimming patients and issues of equity.

The composition of the Netherlands’ healthcare market is rather unique compared to healthcare markets in other countries because all intramural care providers are private providers, but all have to comply with a for-profit ban. Despite this ban on providers of intramural care services allocating profits to third parties, several types of for-profit(-like) providers have established themselves in the Dutch healthcare

<sup>iii</sup> Note that with regard to personal-budgets, the care seeker is also the healthcare purchaser | Figure is based on: 25. Tweede Kamer der Staten-Generaal. *Vernieuwing van het zorgstelsel. Nota. Vraag aan bod.* Den Haag: Sdu Uitgevers; 2001. Report number: 27 855, nr. 2.

system as niche providers, including (i) investor-owned hospitals, (ii) ITCs and (iii) for-profit nursing homes.

### **Box 1.2. History of the for-profit ban and independent treatment centres in the Netherlands**

Historically, non-profit organisations have been the dominant intramural care providers in the Netherlands. In 1977, a ban to distribute profits to third parties was imposed for providers that offer reimbursable care under the statutory benefit package.<sup>32</sup> Yet, around the 1990s entrepreneurial businesses in the Dutch healthcare system emerged in the curative care and long-term care sector.<sup>33</sup> The commercially-oriented healthcare sector was a diverse market and operated on a small-scale.<sup>34</sup>

#### *For-profit ban*

The paradigm shift towards a market-based healthcare system reopened discussion about the for-profit ban. When healthcare reforms were introduced in 2006, the for-profit ban was left in place on the basis that the market first needed to mature.<sup>25</sup> The idea was to lift this ban in due course, although this remained a politically contested matter. After numerous governmental reports and proposals,<sup>35-37</sup> and some legislative changes (e.g. Health Care Market Regulation Act, Health Care Institutions Admission Act), House of Representatives in 2013 approved a law lifting the ban, but the law never came to a vote in the Senate. The Minister of Health, Welfare and Sport decided to put it on hold.<sup>38</sup> The official reason was that the law still had some rough edges that had to be fixed. Another explanation is that the Senate would have probably voted against the law.<sup>39</sup> This thorny matter was continuously postponed. However, in 2019, two hospital sites with commercial investors defaulted,<sup>40</sup> and reporters found that managers at commercial homecare providers had made excessive profits.<sup>41</sup> With this, the law became too politically sensitive, and the Minister of Health withdrew the law altogether.<sup>42</sup> The official statement of the Minister of Health reasoned that there is not yet sufficient transparency in the healthcare system to allow for regulation of for-profit intramural care providers.

#### *Independent Treatment Centres*

In the 1980s, technological developments opened up new possibilities to offer certain elective treatments in outpatient settings. As a result, entrepreneurial physicians started opening their own private clinics.<sup>33</sup> However, these private clinics were not lucrative businesses: initially, their costs were barely covered by public funding because only physician payments (honorarium) could be claimed. A tug of war began over the legality of the newly established private clinics between, and within, the political and the juridical system.<sup>43</sup> Private clinics found

different loopholes in the legal system to avoid hospital regulations (e.g. the for-profit ban) and politicians vacillated in their attitudes towards private clinics.<sup>43</sup> In 1991, the government announced that private clinics were tolerated [gedoogd]. After almost being banned by Health Minister Borst in the meantime,<sup>44</sup> Independent Treatment Centres (ITCs) [zelfstandige behandelcentra: ZBCs] gained formal recognition in 1998. This meant that some private clinics were allowed to provide reimbursable care. (Private clinics that provide reimbursable care are referred to as ITCs.) However, now they had to play by the rules, and one of those rules was the for-profit ban.

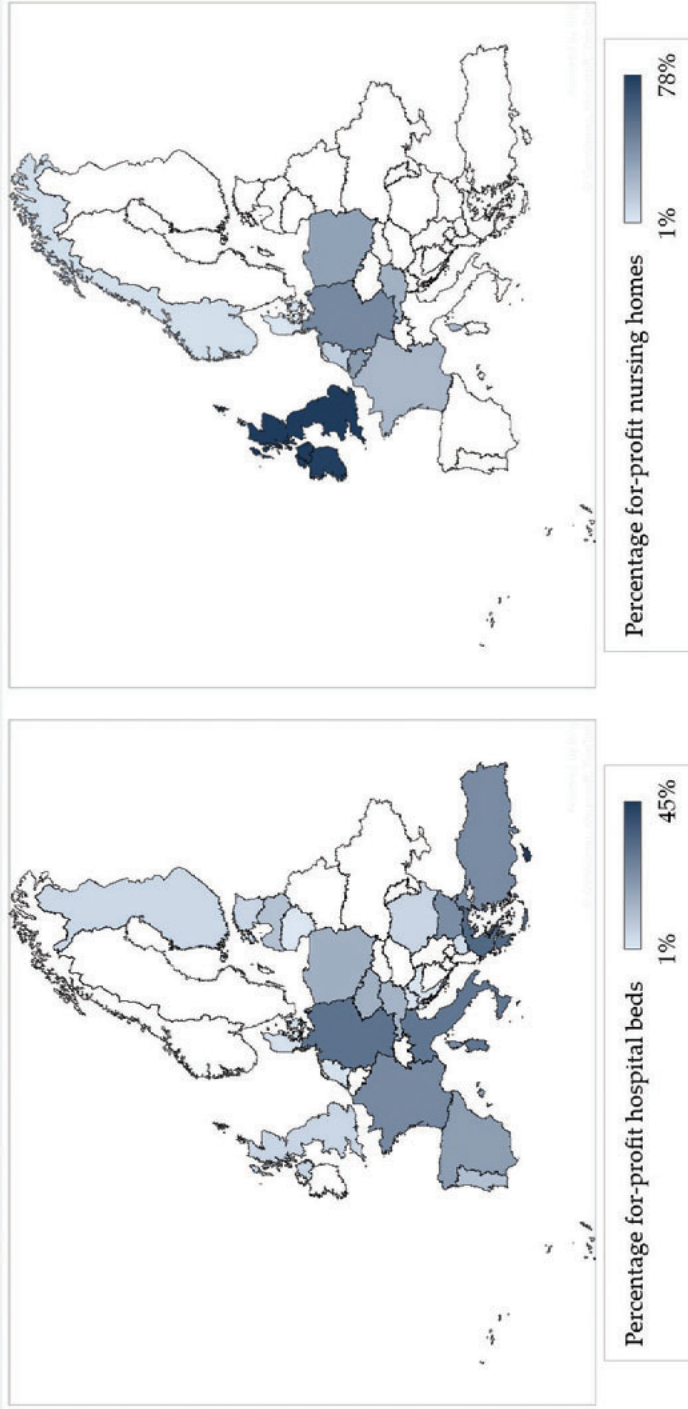
The formal distinction between ITCs and hospitals was abolished with the introduction of the Health Care Institutions Admission Act, which regulates the approval of reimbursable care providers. Now, both hospitals and ITCs are formally defined as medical specialist care providers, though practical differences remain.

(i) A few investor-owned hospitals were established in the Dutch hospital sector (three hospitals have been owned by commercial investors so far). One explanation for commercial investors' interest in these hospitals is that they anticipate the lifting of the for-profit ban sometime in the future. However, there are suspicions that these investors have used crafty accounting practices to benefit from the hospitals' surpluses.<sup>40</sup>

(ii) The ITC sector consists of non-profit and for-profit entities. Most ITCs provide a mixture of reimbursable and non-reimbursable care, but approximately 32% of the ITCs provide solely non-reimbursable care (e.g. cosmetic treatments) and are therefore "pure" for-profit enterprises.<sup>47</sup> However, even ITCs that provide reimbursable care under the statutory benefit package have been able to circumvent the for-profit ban via accounting practices.<sup>48,49</sup> Although there are several variations to this practice, it often comes down to setting up a holding company with both for-profit and non-profit entities. The non-profit companies will be registered under the Health Care Institutions Admission Act and are barred from allocating surpluses, but these companies can subcontract the actual delivery of care to another company, owned by the same holding company. This subcontracted company is not registered under the act and can therefore circumvent the for-profit ban.<sup>50</sup> On average a quarter of the ITC expenses are outsourced to underlying for-profit companies.<sup>51</sup>

(iii) The for-profit nursing home sector has found a way to circumvent the for-profit ban by separating the fees for housing, care and extra amenities. For-profit nursing homes provide publicly-financed care via extramural care plans. Extramural care providers are not restricted by the for-profit ban. Private contracts are made to arrange housing and additional services. For-profit nursing homes can also be described as nursing homes that provide a clustered provision of extramural care.

**Figure 1.3.** Percentage for-profit hospital beds, 2017 (Left)<sup>a</sup>, Percentage for-profit nursing homes, last available year (Right)<sup>b</sup>



Source: Eurostat (2020)<sup>52</sup>, LaingBuisson(2019)<sup>53</sup>, CIBG (2018)<sup>54</sup>, Dubas-Jakóbczyk and Kamińska (2017)<sup>55</sup>, Eurofound (2017)<sup>56</sup>, Competition & Markets Authority (CMA)<sup>57</sup>, Harris-Kojetin, et al. (2019)<sup>58</sup>

a. Authors' calculations. Figures reflect inpatient (acute care) beds. The Dutch figures reflect the acquisition of three hospitals by a commercial firm. The countries in white are missing.

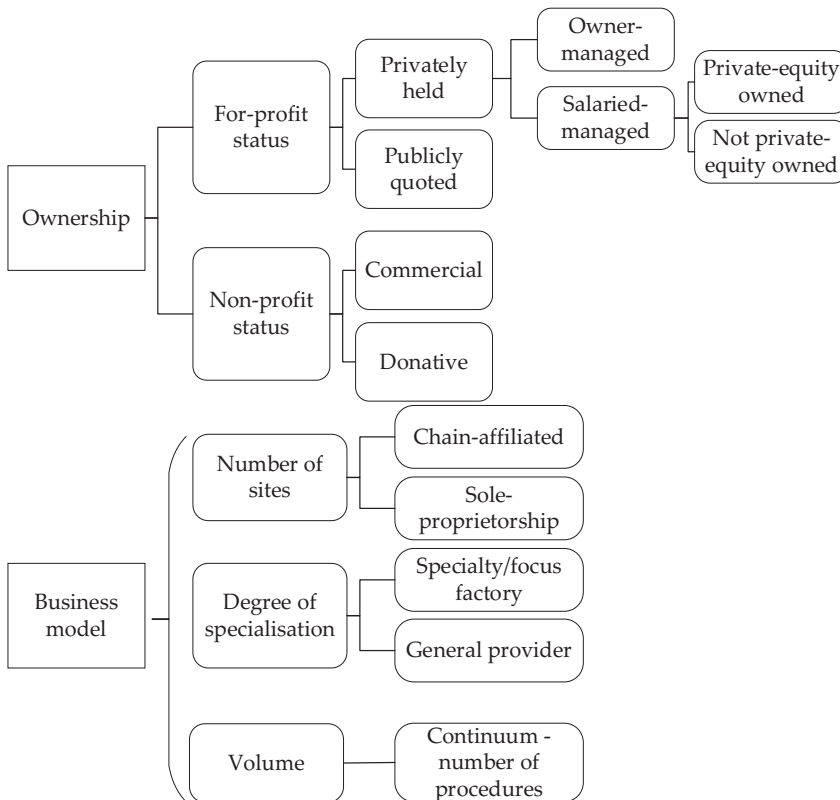
b. Authors' calculations. Collection of data is fragmented, hence, the definition of what nursing homes may significantly differ by country. The year when the data is collected ranges from 2010 to 2016. The countries in white are missing. Most countries have figures for the private sector but not specifically for the for-profit sector.

## 1.3. Typology of commercially-oriented healthcare providers

### 1.3.1. Commercially-oriented providers

Private providers come in different shapes and sizes.<sup>59,60</sup> There may be more variation within different ownership-types than between them.<sup>61</sup> The private sector, for example, consists of specialised versus non-specialised providers, and both chain-affiliated and sole-proprietorship providers. Figure 1.4. sets out a simplified version of the various organisational forms taken by private sector providers. This chart distinguishes two characteristics: (i) the (legal) ownership form; and (ii) the business model.

Figure 1.4. Organisational forms within the private sector



The distinction between non-profit and for-profit organisations is not black and white, however. The non-profit sector is coloured in many shades of grey. Some of this greyness arises from the important distinction between “donative” and “commercial” non-profit organisations.<sup>62</sup> Donative non-profit organisations are organisations that receive most of their income from grants or donations.

Commercial non-profits, on the other hand, rely on service charges.<sup>62</sup> Currently, the majority of non-profits in the healthcare sector are commercial.<sup>63,64</sup> Moreover, some argue that non-profit organisations have become more commercially-oriented because the incentive structure encourages providers to emulate pure commercial organisations.<sup>65</sup> In other words, in an ecosystem where market incentives dominate, all healthcare providers will behave in a commercially-minded way, regardless of their ownership status (i.e. public, non-profit or for-profit). What is more, non-profit organisations can be used by physicians as a vehicle to maximise their incomes,<sup>66</sup> by granting their employees perquisites or excessive payments.<sup>62</sup>

We can roughly define the degree of commercialisation by organisation type (independent of the intensity of the external incentives to which they are subjected). For-profit providers are guided by commercial incentives more so than, for instance, publicly-owned providers. Table 1.1 provides a schematic overview of this. This categorisation builds on existing contributions.<sup>62,67,68</sup> In addition, private-equity owned providers can be classified as the ultimate form of commercialisation.<sup>69</sup>

**Table 1.1.** (As above) Degree of internal commercialisation by type of provider

Degree of commercialisation	Type of organisation	Commercial orientation	Ownership type
<b>Low commercialisation</b>	Publicly-owned, legally dependent	Non-commercially-oriented	Public
	Publicly-owned, but legally independent		
	Private-law providers, but state holds shares		
	Donative private non-profit		Private
	Commercial private non-profit		
	For-profit and services are publicly funded		
<b>High commercialisation</b>	For-profit and services are privately funded	Commercially-oriented	
	For-profit equity-owned providers		

### 1.3.2. Definition, delineation and focus

In this dissertation, commercially-oriented providers are defined as (i) providers that distribute profits to their shareholders (i.e. for-profit entities); or (ii) commercial non-profit providers that have adopted a new business model – distinct from the model of established and traditional providers, a so called niche market – with the aim of maximising gross income and sharing their surpluses among their partners (e.g. physicians or managers) through means other than the distribution of dividends. (Refer to Table 1.1. for the distinction.)



This dissertation will focus mainly on the role of commercially-oriented providers that operate in niche markets. A niche market can be defined as a market that operates at the margin, or in other words exists parallel to the traditional market, or in other words “mainstream” providers.<sup>iv</sup> This dissertation deals with three types of commercially-oriented providers that exist in the Netherlands: hospitals with commercial investors, ITCs, and for-profit nursing homes.

#### *Hospitals with commercial investors*

Even though Dutch hospitals are prohibited from allocating their profits to third parties, a number of providers have acquired the status of a limited liability company, partly in anticipation of the lifting of the for-profit ban. Over the years, thirteen hospitals have converted to this status (based on the authors’ own calculations using financial annual reports data). (It is important to note that there can also be legal reasons to change to this corporate structure other than the distribution of dividends.) Three hospital sites have been acquired by commercial investors. Two of these hospital sites, acquired by the same investor group, defaulted on their payments in 2018.<sup>40</sup> The other hospital site, with a different commercial investor, has achieved a financially strong position with a solvency rate of 26.4%.<sup>71,v</sup>

#### *Independent Treatment Centres*

This dissertation defines ITCs as commercially-oriented niche providers because, by adopting a different business model, they offer an alternative to hospitals’ elective care. ITCs are often physician-owned,<sup>73</sup> often exhibit an entrepreneurial spirit, and tend to act like for-profit entities (see section 1.2.4).

ITCs differ from “traditional” hospitals: ITC sites are much smaller than hospitals; they primarily offer elective ambulatory care; and they tend to be focused on a specific treatment or care pathway.<sup>74</sup> Moreover, ITCs have adopted a different business model,<sup>74,75</sup> as focus clinics, which is grounded in the focus factory theory.<sup>76</sup> This theory predicts that, by specialising, the organisation will gain stronger expertise and thereby become more efficient. Through standardisation and by reallocating expertise and equipment to just one place, operational costs can be reduced. Reductions in overhead costs may reduce fixed costs further. Furthermore, quality could be improved by means of routine and cultivating from continuous learning. The focus clinics could improve quality by reaping the benefits of the

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iv In economic terms, the niche market can be distinguished from the mainstream market, based on the following reasoning: “If a buyer without any prior information enters the monopolistic market, then she values the product at the expected valuation. Thus, this buyer is willing to purchase the product at the (static) monopoly price if the market is a mass one, but declines to do so if the market is a niche one.” 70. Ivanov M. Niche market or mass market? *Economic Letters*. 2009; 105(3): 217–220. doi:<https://doi.org/10.1016/j.econlet.2009.08.003>

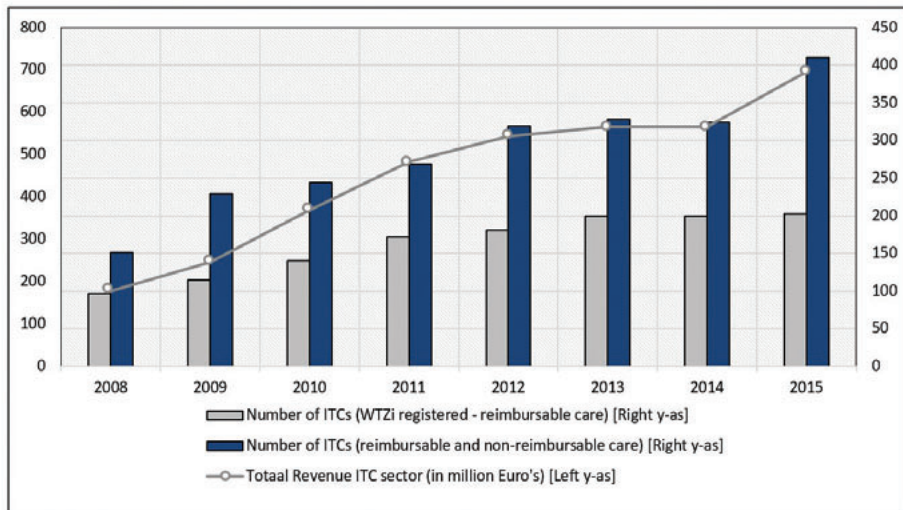
v A solvency rate between 25% and 40% is generally considered healthy. 72. Brealey RA, Myers SC, Allen F. *Principles of corporate finance*. Vol 13. New York: McGraw-Hill Education; 2019.



volume-quality relationship and therefore the focus factory theory predicts that ITCs should outperform hospitals on costs and quality.

Like the UK and the US,<sup>77-79</sup> the Netherlands has experienced a growth in the number and share of ITCs. The total number of ITCs grew from 229 centres in 2009 to 418 in 2016. In other words, the number of ITCs almost doubled.<sup>80</sup> The number of ITCs offering reimbursable care also increased steeply and the total revenue of ITCs grew along with this trend (Figure 1.5). The share of the total number of Diagnosis Related Groups (DRGs) that were claimed by ITCs is relatively small at 3.8% of the total DRGs in 2016 (3.4% in 2014).<sup>81</sup> However, the share in specific medical disciplines varies greatly. ITCs have the highest share in ophthalmology and dermatology, 18.4% and 18.2%, respectively.<sup>81</sup>

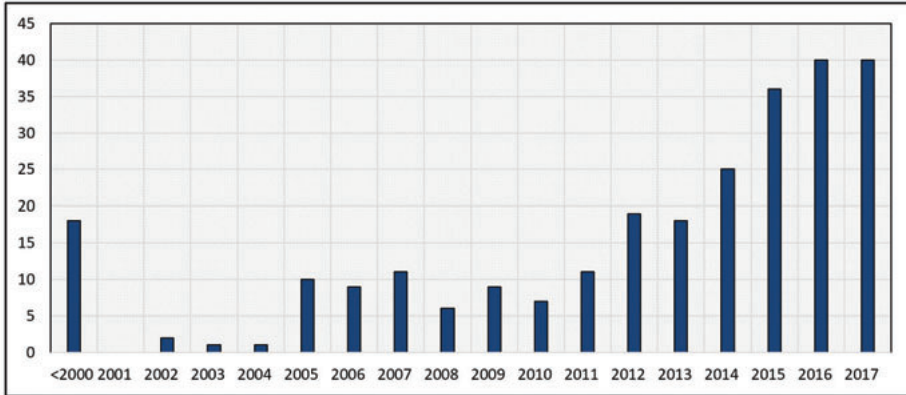
**Figure 1.5.** Increase in the number of ITCs and ITC care in the Netherlands (2007 – 2015)



Source: CIBG (2018)<sup>54</sup>, Inspectie Gezondheidszorg en Jeugd (2014; 2018)<sup>80,82</sup>

### *For-profit nursing homes*

As explained in the earlier sections, for-profit nursing homes found a way to circumvent the for-profit ban. The for-profit nursing home sector has carved out a niche market from the “traditional” non-profit nursing home sector. Unlike the non-profit sector, the for-profit sector offers small-scale nursing home sites which have tailored their services to serve an affluent clientele.<sup>83</sup> The sector is diverse and consists of a range of sole-propriatorship nursing homes to larger nursing home chains. Even though the for-profit nursing home sector has existed for many years,<sup>34</sup> the number of for-profit nursing homes in the Netherlands has grown significantly in the last decade (see Figure 1.6).

**Figure 1.6.** Growth for-profit nursing home sector in the Netherlands (year of opening)

Source: Bos et al. (2020)<sup>84</sup>

## 1.4. Existing research on commercially-oriented providers

### 1.4.1. Research on private providers: theoretical and empirical

As a result of public retrenchment, the private sector (i.e. non-profit and for-profit) has taken on a greater role in many healthcare systems.<sup>85</sup> A rich body of literature provides theoretical arguments for the existence and relative performance of private organisations in quasi-public services such as healthcare. This section highlights four theoretical mechanisms often mentioned in the literature which provide explanations for the existence of for-profit providers in quasi-public services and for their relative performance compared with non-commercial providers.<sup>86-88</sup> In addition, this section explains how the theoretical logic works in practice, outlining the respective empirical literature.

#### *Capital structure and responsiveness to demand*

Historically, capital financing of non-profits came from philanthropic donations, public grants and operating surpluses. However, donations and grants have largely dried up.<sup>64,89</sup> Non-profits currently tend to rely mainly on loans or (tax-exempted) bonds to finance capital.<sup>64</sup>

One of the reasons why for-profit entities are able to enter markets dominated by non-profit and public providers is that they can tap into equity capital, which can free up substantial investment funds. Although the cost of private equity is generally higher than the cost of bank loans or (tax-exempted) bonds,<sup>90</sup> the opportunity costs (the difference in cost between bank loans or bonds and private equity) can fluctuate over time. For example, private investors may value the growth potential of a for-profit organisation more highly than its current earnings, making it easier to raise funds.<sup>91</sup> In addition, because of their different capital structures, for-profit organisations

differ in their responsiveness to demand. The for-profit capital structure allows them to tap into more risk-taking and often large investment funds.<sup>64</sup> This means that they will exit shrinking markets or enter upcoming markets quicker than non-profit organisations are able and incentivised to do. By contrast, non-profit organisations are not incentivised to adjust capacity to demand (i.e. “trapped capital”).<sup>92</sup>

Previous studies have found that fluctuating capital costs partly explain the growing number of for-profit hospital providers in Germany, UK and US.<sup>33,93</sup> International empirical evidence seems to support this theoretical premise of responsiveness to demand.<sup>92,94,95</sup>

#### *Costs and efficiency gains*

Economic theories predict that for-profit providers should be more economic efficient than public and non-profit providers in competitive markets.<sup>vi</sup> For-profits want to satisfy their shareholders by maximising profits, therefore they seek to optimise cost-efficiency.<sup>31,62</sup> Because for-profit healthcare providers theoretically achieve higher efficiency than their counterparts, they are therefore able to compete on price. On the other hand, for-profits may charge higher prices because they have to reflect market prices for inputs (relying less on donated inputs and subsidies) and generally their capital costs are higher (see point above).<sup>63,90</sup>

However, most systematic reviews – primarily from the US – find no clear differences in efficiency between for-profit hospitals on the one hand, and non-profit and public hospitals on the other.<sup>97-101</sup> In the US, for-profit hospitals generally charge higher prices than non-profits.<sup>98,102,103</sup> In the nursing home sector, evidence tentatively suggests that for-profit nursing homes are more economically efficient.<sup>98,104</sup> International empirical studies that compare ITCs with hospitals are limited. The studies that do exist find that ITCs have cost advantages over hospital outpatient departments.<sup>75,105</sup>

#### *Quality improvements: mixed theory and empirical evidence*

Theory predicts that non-profit healthcare providers provide better quality of care than for-profit providers when quality is difficult to monitor and information asymmetry exists between the consumer and the provider.<sup>14,106</sup> The non-distribution constraint signals that the institution’s objective is to maximise benefits to stakeholders rather than maximise profits, and this engenders a sense of trust that they are primarily concerned with the interests of patients.<sup>14,62,107</sup> In addition, because the objective of non-profit organisations is to serve a social purpose, non-profit entities maximise their quantity-quality outputs,<sup>108</sup> and will outperform for-

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vi The term “economic efficiency” in this context follows a narrow definition. It refers to the maximum output attainable with a given input or the most cost-efficient use of resources to achieve maximum output. For the sake of simplicity, quality of care is not taken into account as an output. In this regard, outputs refer to the number of clients that are taken care of. 96. Coelli TJ, Rao DSP, O’Donnell CJ, Battese GE. *An introduction to efficiency and productivity Analysis*. New York: Springer; 2005.

profit organisations on (unmeasurable) quality measures. In a similar vein, ethicists argue that the market fails to provide relational goods<sup>vii</sup> because it will erode the interpersonal values which are fundamental to the caregiving relationship.<sup>16-18</sup> Non-profit entities are expected to be more trustworthy than for-profit entities as providers of these relational goods. However, there is one theoretical argument which runs contrary to all of the above, predicting that for-profits are incentivised to satisfy their customers and therefore provide better amenities (e.g. good parking spots and welcoming atmosphere), and this may lead to quality improvements. But this should only work for measurable and marketable quality outputs such as patients' satisfaction.<sup>110</sup>

Empirical evidence in the hospital sector shows mixed evidence regarding quality of care.<sup>61,97,102,111</sup> Nursing home studies show more consistent results insofar as for-profit nursing homes provide lower quality of care compared to non-profit providers.<sup>98,104,112,113</sup> A systematic review covering the ITC sector finds mixed results in terms of their relative performance compared with hospitals.<sup>114</sup>

#### *Responsiveness to financial incentives*

For-profit providers tend to be more responsive to financial incentives because of their strong focus on generating profits. Most incentive schemes are unable to prevent all rent seeking behaviour. For example, under fee-for-service reimbursement schedules, the earnings of the provider are tied to the number of goods and services provided to patients and this has generated scepticism about the motives and trustworthiness of the provider.<sup>115</sup> In a similar vein, for-profit providers are, in theory, more susceptible to upcoding<sup>viii</sup> as their main objective is to maximise financial benefits. Furthermore, for-profit providers tend to focus on profitable services, also referred to as "cream-skimming" or "cherry picking".<sup>63</sup> They exit markets – or not even enter markets in the first place – that are less lucrative.

Previous research generally supports the theory that for-profit healthcare providers tend to focus more on profitable services (i.e. less severe patients) and provide lower levels of charity care.<sup>117-120</sup>

#### **1.4.2. Relevance for policy**

The current state of knowledge about the performance of private healthcare providers offers some answers but also leaves us with several unanswered questions. We cannot fully grasp the factors that are behind the mixed performance of the

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vii The characteristic of relational goods is that, different from private goods that are enjoyed alone, they can only be enjoyed if shared with some others. 109. Uhlener CJ. Relational Goods and Participation - Incorporating Sociability into a Theory of Rational Action. *Public Choice*. 1989; 62(3): 253-285. doi:<https://doi.org/10.1007/Bf02337745>

viii "Upcoding is the practice of miscoding and misclassifying patient data in order to receive higher reimbursements services provided" 116. Lorence DP, Richards M. Variation in coding influence across the USA. Risk and reward in reimbursement optimization. *Journal of Management in Medicine*. 2002; 16(6): 422-435. doi:<https://doi.org/10.1108/02689230210450981>, p.423

different ownership types. There is still a lot of uncertainty about whether and why ownership differences matter, and whether it is desirable to have commercially-oriented healthcare providers. There is gap in our knowledge on whether ITCs and for-profit nursing homes, as niche providers, contribute to the financial sustainability of the Dutch healthcare system. Policymakers want to know how best to seize the opportunities of commercially-oriented niche providers and how to mitigate the risks. This dissertation aims to contribute to this type of knowledge, and by doing so enhance evidence-informed policymaking.

## 1.5. Research questions

This dissertation focuses on commercially-oriented providers, especially those that serve a niche market. In that respect, Dutch care providers are an interesting case because while they are prohibited from allocating profits to third parties, they are incentivised to behave in a business-like manner. This may have triggered some providers to carve out a niche market and pursue their commercial interest.

The contribution of this dissertation is to uncover missing pieces of the puzzle and thereby reveal a richer picture both of how commercially-oriented providers perform compared to “traditional” providers, and of how commercially-oriented providers behave under certain external conditions. This dissertation provides insights for an international readership by means of country comparisons and by reflecting on the generalisability of the Dutch findings. Especially when studying the for-profit hospital sector, this dissertation takes an international approach since investor-owned hospitals in the Netherlands are rare, and moreover it provides the opportunity to uncover certain contextual differences. This study takes a multi-disciplinary approach using techniques, perspectives and theories from the disciplines of economics, public administration, organisational science, ethics and history.

### **Box 1.3. Research questions and sub-questions**

*The overarching research question of this dissertation is:*

Do commercially-oriented healthcare providers (especially those operating in niche markets) contribute to a qualitatively better and financially sustainable healthcare system?

*With the sub-questions:*

- What market trends explain the growth and/or performance of commercially-oriented providers?
- How do commercially-oriented (niche) providers perform in terms of costs, quality and accessibility in relation to the “traditional” sector?
- What ethical issues arise from the provision of healthcare services by commercial niche organisations?

Thus this dissertation examines three subjects: (i) market trends among commercially-oriented providers; (ii) comparison of commercially-oriented providers with the “traditional sector”; and (iii) an ethical reflection on commercially-oriented providers. To tackle these subjects, this dissertation analyses three cases: for-profit hospitals, ITCs and for-profit nursing homes.

## 1.6. Overview of this dissertation

The dissertation presents eight studies which are organised by sub-question (market trends, comparison with “traditional sector”, ethical reflection) and explores the three selected case studies (i.e., for-profit hospitals, ITCs and for-profit nursing homes).

### 1.6.1. What market trends explain the growth and/or performance of commercially-oriented providers?

In various healthcare systems, the number and share of for-profit hospitals has grown. Even in the Netherlands where they enforce a for-profit ban, several commercial investors have entered the hospital sector. **Chapter 2** analyses the factors that may explain the growth of for-profit hospitals by means of a country comparison (i.e. US, UK, Germany and the Netherlands) and a rich historical description. We shed light on the question of why for-profit hospital providers have grown in some healthcare systems but not in others.

Little is known regarding how ITCs – and the sector as a whole – behave in a managed competition system, and whether similarities can be drawn between ITCs and the well-studied “traditional” hospital sector. One of the better studied subjects in the hospital sector is the consolidation of the market. Therefore, in **Chapter 3**, we look specifically to assess whether the ITC sector shows the same trend towards market consolidation. We also analyse whether a higher market share drives up healthcare prices. We use longitudinal annual reporting data to extract the revenue of ITCs and hospitals to calculate the Gini-coefficient (i.e. the revenue inequality) and the C4-index (i.e. the market share of the four largest organisations). In addition, in **Chapter 4**, we analyse whether there is a volume-quality relationship within the ITC sector. The volume-quality relationship is well-studied for high-risk, low-volume procedures but not for low-risk, high-volume treatments, which are treatments that ITCs provide. In addition, the focus factory theory underpins the volume-quality relationship and by shedding light on the volume-quality relationship in the ITC sector, we gain a better understanding of how the focus factory theory works in practice. We use longitudinal data from the Dutch Health and Youth Care Inspectorate. This data contains the number of (invasive) treatments per provider (i.e. volume) and various quality indicators. We use random effects analysis to analyse the relationship between volume and quality.

The rise in the number of for-profit nursing home providers in the Netherlands has changed the long-term care provider landscape. In **Chapter 5**, we explore the



factors which explain the growth of the for-profit nursing home sector. This study follows a mixed-methods approach, using both quantitative and qualitative data. We opted for this approach in order to get a good oversight over the sector since we could not build on existing knowledge.

### **1.6.2. How do commercially-oriented (niche) providers perform in terms of costs, quality and accessibility in relation to the “traditional” sector?**

The private sector has taken on a larger role in the healthcare system but it remains questionable whether this will lead to a more financially-sustainable and quality-enhancing healthcare system. A rich body of literature has focused on how private (i.e. non-profit and for-profit) hospitals behave in the US. However, much less attention has been paid to how private partners behave in other healthcare systems. Since context-specific incentives matter to the behaviour of healthcare providers, we pose the following research question in **Chapter 6**: Do private hospitals outperform public hospitals regarding efficiency, accessibility and quality of care in the European Union? This chapter follows a systematic literature review approach.

The key question that arises with the increasing presence of ITCs in various healthcare systems is whether ITCs outperform the “traditional” sector (i.e. general hospitals) on quality, efficiency and costs. **Chapter 7** analyses five elective surgeries and examines the differences in quality of care and the differences in list prices between ITCs and general hospitals. In order to do this, we used publicly available quality data, list prices and insurer contracts. We used three different statistical techniques, depending on the outcome measure: (i) zero-or-one inflated beta-regressions; (ii) ordinary least squares regression; (iii) ordered logistic regressions. **Chapter 8** gives a more in-depth analysis of how ITCs perform compared to general hospitals, using the case of cataract care. This study uses claim data to compare efficiency, total costs, (contracted) prices and quality of care differences between ITCs and (general) hospitals. Comparative multi-level analysis was used to analyse the relationship.

### **1.6.3. What ethical issues arise from the provision of healthcare services by commercial niche organisations?**

We also use the for-profit nursing home sector as a case study in **Chapter 9** to reflect ethically on how the values of the market infiltrate, or commodify, the care-relationship. We examine specifically how the market shapes the behaviour of organisations and how the commercially-oriented mindset may affect the care relationship. This study takes an empirical ethics approach, using qualitative data from three for-profit nursing homes and additional data from expert interviews.

### **1.6.4. Discussion**

**Chapter 10** brings all the chapters together and offers an answer to the overarching research question. This chapter discusses (i) the main findings and embeds them

in the existing body of literature; (ii) outlines the strengths and limitations of the dissertation; and (iii) provides several policy recommendations.

## 1.7. Appendix

### Appendix 1.A.

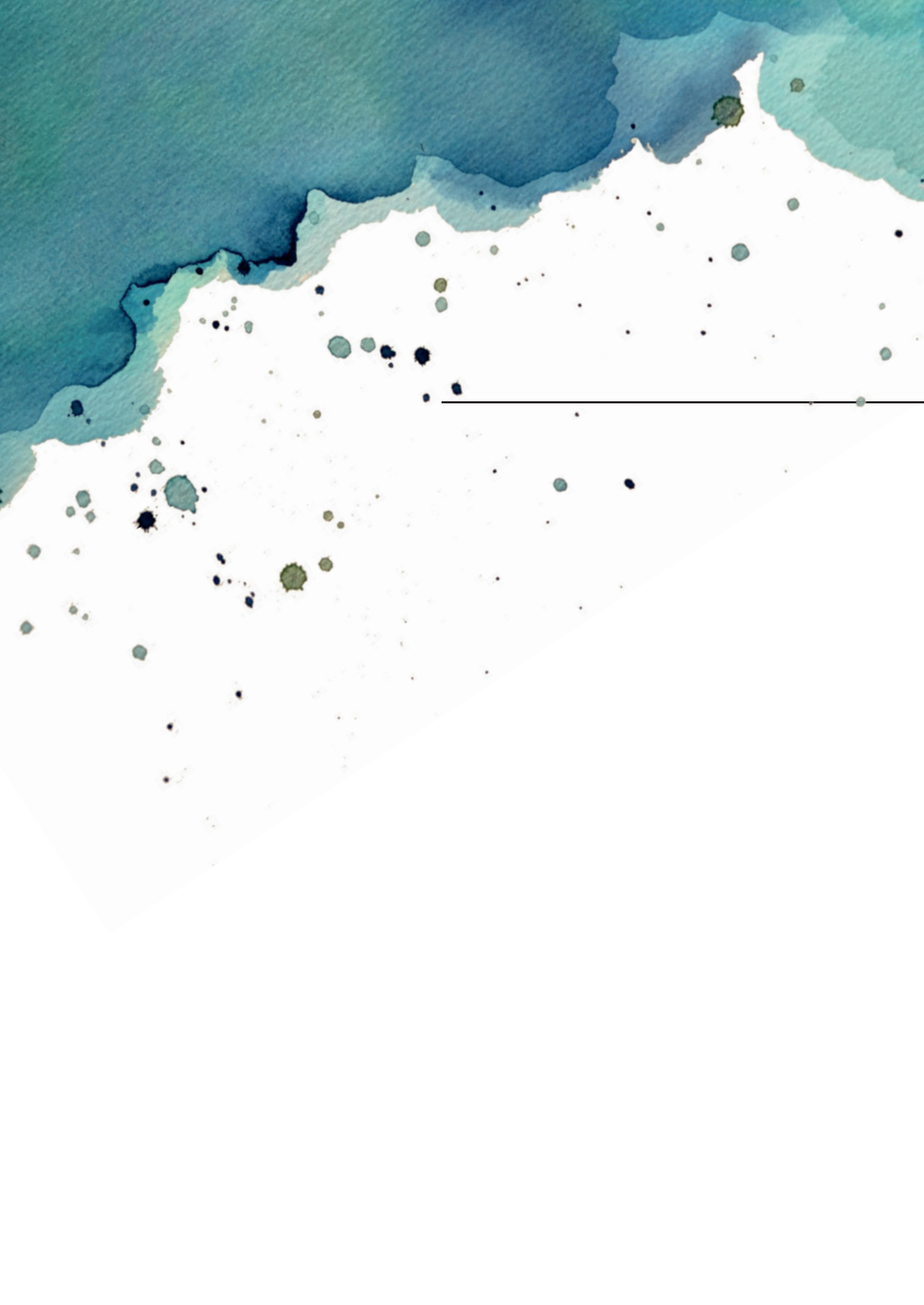
The Dutch healthcare system changed towards a more demand-led, competitive, healthcare system in recent decades. The development of the Dutch health policies roughly follow the punctuated equilibrium theory: various incremental changes with a few major reforms. An example of an incremental change are the personal budgets [persoonsgebonden budget; pgb]. These were introduced in 1995 in the long-term care sector.<sup>121</sup> Personal budgets embrace the idea of a sovereign client who chooses and contracts his/her care provider. This notion of a demand-led long-term care (LTC) sector became popular among Dutch policymakers.<sup>25,122,123</sup>

A major reform in medical specialist care, in 2006, changed the sector towards a managed competition system. The Netherlands was the “first country to consistently implement this as a ruling principle”.<sup>124</sup> This meant that the healthcare market had to comply to a strict rulebook and was to be regulated by numerous independent governmental organisations. Three healthcare markets were introduced: the healthcare provision market, the health purchaser market and the health insurance market. The idea was that the patient, the healthcare provider and the healthcare insurer would keep each other in check.

The Dutch government introduced a major long-term care reform in 2015. The reform of the LTC sector was driven by a normative reorientation towards more individual and social responsibility as well as a moving away from residential care to non-residential care.<sup>125</sup> It introduced some elements of market-based principles: the sector became more decentralised and commissioning power was delegated to regional long-term care offices and municipalities. Nursing homes now had to obtain contracts from the long-term care offices in order to provide in-kind care packages.









# Chapter

# 2.

**For-profit hospitals have thrived  
because of generous public  
reimbursement schemes, not  
greater efficiency: a multi-country  
case study**

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## Abstract

For-profit hospitals' market share has increased in many nations over recent decades. Previous studies suggest that their growth is not attributable to superior performance on access, quality of care, or efficiency. We analysed other factors that we hypothesised may contribute to the increasing role of for-profit hospitals. We studied the historical development of the for-profit hospital sector across four nations with contrasting trends in for-profit hospital market share: the United States (US), the United Kingdom (UK), Germany, and the Netherlands. We focused on three factors that we believed might help explain why the role of for-profits grew in some nations but not in others: (1) the treatment of for-profits by public reimbursement schemes; (2) physicians' financial interests; and (3) the effect of the political environment. We conclude that access to subsidies and reimbursement under favourable terms from public health care payors is an important factor in the rise of for-profit hospitals. Arrangements that aligned the financial incentives of physicians with the interests of for-profit hospitals were important in stimulating for-profit growth in an earlier era, but they play little role at present. Remarkably, the environment for for-profit ownership seems to have been largely immune to political shifts.

**Keywords:** For-profit hospitals, health policy, delivery of healthcare, private sector, comparative study, organisation and administration

## 2.1. Introduction

In recent decades, for-profit hospitals have gained market share throughout many developed nations. Conventional wisdom attributes for-profit hospital success to greater efficiency.<sup>10,126,127</sup> However, we argue that this claim is based on unfounded assumptions, and we analyse the growth and development of the for-profit hospital sector in four countries in order to explore alternative explanations.

### 2.1.1. Hospital ownership: public, non-profit, and for-profit

Many nations' health systems include a variety of hospital ownership types: for-profit, non-profit and public. Public hospitals are legally part of the government, either as state-owned organisations at arm's length or fully owned by regional or local governments.<sup>128</sup> Non-profit hospitals must use any surpluses (or profits) to further their organisational purposes or missions, and are barred from distributing surpluses to individuals who exercise control over them.<sup>62</sup> Conversely, for-profit hospital owners control their organisations and have the right to all "residual claims" (i.e. the profits) after all prior obligations have been paid.<sup>129</sup>

The for-profit hospital sector comes in many shapes and sizes ranging from small physician-owned institutions to large publicly-traded for-profit hospital chains. Increasingly, small individual for-profit hospitals are being consolidated into (very) large investor-owned chains.<sup>130</sup> Depending on country-context and regulation, for-profits often specialise in lucrative areas of care, such as elective surgery,<sup>131</sup> and are more likely to target private-pay (or privately-insured) patients.<sup>97</sup>

Kenneth Arrow (1963),<sup>14</sup> a founding father of health economics, argued that fundamental information asymmetries in healthcare markets mandate reliance on trustworthy agents to compensate for market failures. He suggested that for-profit organisations cannot satisfy this standard since, "[t]he very word, "profit", is a signal that denies the trust relations."<sup>14, p.965</sup> Following this line of thought, one may believe that non-profits, with a status signalling that their objectives are not to maximise profits, might therefore be best suited to act in the interest of patients. However, in another health economics classic, Pauly and Redisch (1973)<sup>66</sup> postulate that shrinkages in the United States (US) proprietary hospital sector reflect powerful physician interests, since non-profit hospitals operate *de facto* as doctors' facilities and are effectively for-profits in disguise whereby physicians exercise authority over hospital assets in order to maximise their income without running financial risks.

Both Arrow's<sup>14</sup> and Pauly and Redisch's<sup>66</sup> analyses suggest that non-profits would dominate the hospital sector. However, several countries on different continents have seen an expansion in the for-profit hospital market in recent years.<sup>33,45,132,133</sup> This growth in for-profit share of the hospital sector raises puzzling questions.

### **2.1.2. Why is it that for-profit hospitals do not deliver superior performance?**

Many economists hold that for-profit ownership is naturally more efficient because, in theory, these institutions must continuously strive to outperform non-profit or public organisations in order to maximise profit and satisfy their shareholders.<sup>66,134-136</sup> However, empirical evidence contradicts this. Systematic reviews analysing the relationship between hospital ownership and quality of care have either found mixed results,<sup>61,97,137</sup> or have favoured non-profit or public providers.<sup>102,117</sup> Reviews of hospital efficiency have arrived at the same conclusion: there are mixed results, but generally for-profit providers do not outperform other ownership types.<sup>97,98,117</sup> For-profit hospitals tend to charge higher prices than do public and non-profit hospitals.<sup>98,103,137</sup> This, in part, may reflect their wider profit margins<sup>138,139</sup> and higher overhead and capital expenditures.<sup>140-143</sup> Despite higher costs to the payor, for-profit hospitals often outsource and are thus able to minimise the number of employed staff – particularly non-physician staff.<sup>144</sup> As a result, for-profit hospitals typically benefit from lower personnel costs.

Interpreting empirical findings on this topic requires the consideration of three important nuances. First, many systematic reviews on this subject have highlighted the complexities around drawing conclusions<sup>97-101</sup> when there is substantial variability within different ownership-types.<sup>61</sup> Second, exogenous economic incentives might at times override provider missions and goals. For instance, spillover effects can impact and alter the motives of non-profit organisations. Such spillovers might be beneficial or detrimental. For example, for-profit providers' entry into the market might push non-profits to adopt similar structures and strategies.<sup>145,146</sup> Non-profit hospitals may feel pressured to increase their efficiency or to focus on profitable services such as elective surgeries and minimise charity care.<sup>90,138,147-150</sup> Third, while some cross-sectional studies have found that for-profits are less efficient because they tend to acquire inefficient public and non-profit organisations,<sup>97</sup> other longitudinal studies suggest that for-profit entities streamline the public and non-profit hospitals they acquire and thereby achieve greater efficiency.<sup>101,139</sup>

## **2.2. Research questions**

If, as the literature suggests, consistently superior performance on patient outcomes or economic efficiency does not explain the growth of for-profit hospitals, other factors must be explored.

### **2.2.1. How does access to capital and payment for services vary by hospital ownership type?**

All hospitals require access to capital funds for investments into new or upgraded facilities that are essential for growth and even survival; however, they depend upon different sources for these capital funds. For-profits can attract capital from investors who seek a share of the earnings (i.e. venture capital firms and the stock market), and

can also raise funds through bank loans or by issuing bonds.<sup>64</sup> Non-profits can tap into philanthropic funds, receive government grants, can issue (tax-exempt) bonds, and may retain earnings from operating surpluses.<sup>64,151</sup> On the whole, non-profit organisations' financing costs are lower.<sup>90</sup> However, in some circumstances, for-profits have an advantage. For example, a for-profit hospital with a high stock price-to-earnings ratio may yield more by raising capital through stock sales rather than from borrowing.<sup>90,91,152</sup> In other words, the relative costs of different sources of capital fluctuate, and such fluctuations can turn the tables in defining which ownership type has a financing advantage. Furthermore, the growth of the for-profit sector may be hindered if government-regulated health financing schemes limit or disfavour them.

### **2.2.2. How do physician incentives and influence vary across different types of hospital ownership?**

Physicians often exert considerable influence over hospital management<sup>153</sup> and a hospital's business prospects.<sup>154</sup> While many factors shape physician working conditions and job satisfaction, remuneration certainly plays a role. For-profit entities may offer physicians higher pay (e.g. in the form of an ownership stake in the firm),<sup>141</sup> but they may also reduce non-physician employee pay in order to maximise profits. This incentive structure is absent or may be weaker in non-profit organisations. Employment in non-profit organisations might be attractive to physicians because of commitments to social and altruistic goals.<sup>62,155</sup> For some physicians who recognise that (as Pauly and Redisch noted) non-profit hospitals can be for-profits in disguise, the attraction of a non-profit hospital might alternatively be linked to physicians' desires to maximise their incomes.<sup>66</sup>

### **2.2.3. Does the ruling political party determine the success of different hospital ownership types?**

Political theory would predict that left-leaning government regimes are more likely to be anti-commercial, and hence to implement public policies that disfavour for-profits. In contrast, theory predicts that right-leaning politicians are more apt to trust market forces in healthcare, and to implement for-profit-friendly health policies.

### **2.2.4. Structure of the paper**

In this paper, we examine the role of these three factors above on the for-profit hospital market. We consider (i) public policies granting access to capital and payments for services; (ii) physicians' stake in for-profit medical enterprises; and (iii) the political milieu, and compare these trends in for-profit market growth in four countries. Below, we outline the methods and data that inform our study; we then present an overview of the trends of for-profit market share across the four countries over time; following this, we delve deeper into our four case studies and demonstrate the similarities and differences across the for-profit hospital sector in

these countries; finally, we discuss the lessons learned and policy implications of our findings and offer several conclusions.

## 2.3. Methods and case selection

We conducted a historical case study of the growth and characteristics of the for-profit hospital sector and healthcare environment in four nations (Table 2.1). We included cases with substantial (Germany and the US), as well as negligible (the Netherlands) for-profit sectors. Our cases cover the spectrum of health financing systems: mainly privately funded (US), publicly funded (the United Kingdom (UK)), and those funded by social insurance (Germany and the Netherlands). These four cases can also be stratified in such a way that they are relevant in answering our research questions. The UK and Germany both rely on public capital subsidies and regulation. These are centralised in the UK and decentralised in Germany. Hospital capital (and debt repayment) in both the US and the Netherlands is largely funded by operating surpluses which hospitals generate internally from reimbursement fees paid by insurers for care provided. Hospital physicians are mainly paid salaries in both Germany and the UK. Until recently, these physicians in the US were typically self-employed; while in the Netherlands, about half of hospital physicians are self-employed and half are salaried.<sup>156</sup> Political discussion on the appropriateness of for-profit hospitals has arisen in previous decades. It was prominent in the UK during the mid-1970s; in the US during the 1980s (and again, regarding physician-owned specialty hospitals from the early 2000s onwards); in Germany in the early 1990s; and in the Netherlands in the first ten years after the 2006 healthcare market reform.

We collected data on the for-profit hospital sectors in four nations using official statistics, secondary sources, grey literature, and peer-reviewed studies.

## 2.4. Results

### *For-profit hospital market share: overview of findings*

Figure 2.1. displays trends in for-profit share of hospital beds in each nation and the political leanings of the governments over time. For-profit market share has grown rapidly in Germany and the US, and currently exceeds 15% in each of these nations. In the UK, growth has been more modest and private hospital beds currently account for 5% of the total. However, UK figures are for all non-NHS hospitals, including non-profits such as Nuffield and London Clinic, which accounted for 12.9% of private hospital beds in 2018.<sup>53</sup> In the Netherlands, only a single hospital remained under for-profit ownership following the 2018 bankruptcy of two hospitals that had been acquired by commercial investors.

Because for-profit hospitals are generally smaller than non-profit and public hospitals, their market share as measured by the number of hospitals is higher than their share of beds: these shares are 26.7% in the US in 2018 (up from 17.9% in 2000)



and 35.8% in Germany (up from 21.7% in 2000) (authors' calculations; no comparable data are available for the UK).<sup>157,159</sup>

**Table 2.1.** Characteristics of the health systems and size of the for-profit hospital sector in the US, UK, Germany, and the Netherlands

	US	UK	Germany	Netherlands
<b>Number of for-profit hospitals</b>	1,663	195 <sup>b</sup>	720	1 <sup>a</sup>
<b>(% of total)</b>	(26.7%) <sup>157</sup>	(11.1%) <sup>53,158</sup>	(37.1%) <sup>159</sup>	(1.4%) <sup>54</sup>
<b>[Year]</b>	[2018]	[2014]	[2017]	[2018]
<b>For-profit beds</b>	173,758	8,730 <sup>c</sup>	93,189	257 <sup>a</sup>
<b>(% of total)</b>	(18.5%) <sup>157</sup>	(5.0%) <sup>53,158</sup>	(18.7%) <sup>159</sup>	(0.7%) <sup>54</sup>
<b>[Year]</b>	[2015]	[2018]	[2017]	[2018]
<b>Health system</b>	Private with public programs	National Health Service	Social-insurance	Social-insurance
<b>Capital funding</b>	Mainly operating surpluses	Public subsidies	Mainly public subsidies	Mainly operating surpluses
<b>Physician employment status</b>	Mainly self-employed until recently, currently mixed	Salary / self-employed (private sector)	Salary	Self-employed (43%) / salary (57%) <sup>156</sup>
<b>Explicit political debate</b>	Effects of profit making (1980s), cherry picking by specialty hospitals (2000s)	NHS pay-beds (1970s) and outsourcing to the private sector (1980s)	Privatisation of hospitals in former German Democratic Republic (1990s)	Lifting ban on profit distribution (2008-2019)

<sup>a</sup> Two hospitals owned by private investors that went bankrupt in 2018 are excluded from the table.

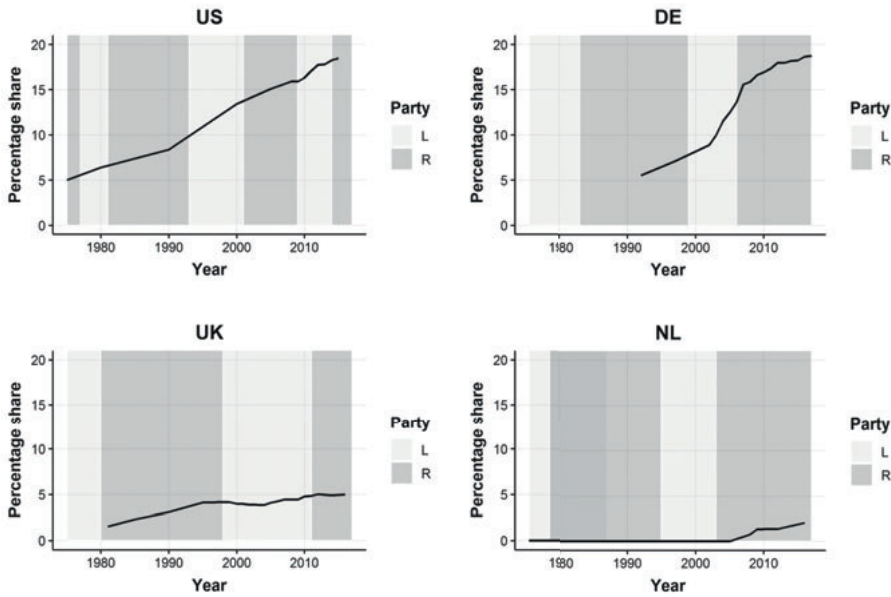
<sup>b</sup> These figures reflect all non-NHS hospitals and exclude day facility-only private hospitals.

<sup>c</sup> These figures reflect all beds in the independent acute medical care hospitals.

Surprisingly, for-profit hospital growth rates in the US and Germany appear largely unrelated to the political leanings of the governing party. For-profit growth in the UK coincided with the vogue for New Public Management (NPM) starting in the late 1980s. While it is difficult to define left- vs. right-leaning in the Dutch or German context because these governments are sometimes (i.e. Germany) or always (i.e. Netherlands) coalitions between parties, political milieu appeared to have little

relation to for-profit hospital growth. The indicated political leanings of the Dutch government in the figure below (Figure 2.1.) are based on the largest party in the coalition in each period.

**Figure 2.1.** Trends in for-profit hospitals' share of total beds in each nation, and the political leanings of the ruling party during each period<sup>a</sup>



<sup>a</sup> Authors' calculations. Figures reflect inpatient (acute care) beds. The Dutch figures reflect the acquisition of three hospitals by a commercial firm, but because missing data on acquisition dates, the graph may be imprecise.

Sources: AHA (2017)<sup>157</sup>, CDC (2017)<sup>160</sup>, OECD (2019)<sup>158</sup>, OHE (2011)<sup>161</sup>, LaingBuisson (2017)<sup>162</sup>, LaingBuisson (2019)<sup>53</sup>, Statistics Germany (2018)<sup>159</sup>, CIBG (2018)<sup>54</sup>

### *The early roots of the for-profit hospital sector*

In the late 19<sup>th</sup> century, almshouses (UK), philanthropic institutions (US) and religious providers (Netherlands and the US) that had previously provided medical care to the destitute began to be replaced by modern hospitals with sophisticated operating theatres and diagnostic equipment that catered to patients of all economic backgrounds.<sup>33</sup> Most of these early hospitals were publicly- or church-owned facilities located in city centres. In bigger cities, many hospitals limited admitting privileges to a small group of physicians, which stimulated the growth of physician-owned clinics that tended to target wealthier patients. However, the financial prospects of the emerging for-profit hospital sector were lacklustre. They could neither tap into low-cost charitable or public sources of capital nor could they use cheap religious labour such as nuns, and public payments for care of the poor were meagre.

The 1930s depression dealt a major blow to the for-profit hospital sector in many nations.<sup>33</sup> While data is limited, we know that in Germany, proprietary hospitals' share of beds declined from 7.0% in 1931 to 5.9% in 1937.<sup>163</sup> In the UK, 9.6% of all beds were in private nursing homes in 1921, declining to 7.2% in 1938.<sup>164</sup> US proprietary facilities accounted for 17.3% of hospital beds in 1928, but no more than 9.5% in 1940.<sup>33</sup>

Shortly after World War II, many Western countries developed or cemented their welfare states, increased public expenditures on healthcare and, in several cases, implemented universal health coverage.<sup>165</sup> However, in most nations, the expanded public financing of healthcare afforded only a marginal role to for-profit hospitals, casting a shadow over this sector. The eclipse of for-profit hospitals that prevailed at the time of Arrow's (1963)<sup>14</sup> and Pauly and Redisch's (1973)<sup>66</sup> analyses led them to conclude that non-profits would remain dominant in the healthcare sector. With the benefit of hindsight, it seems these eminent scholars miscalculated.

#### 2.4.1. The United States

##### *Medicare and Medicaid Capital Payment Policies*

In the US, the proprietary hospital sector bottomed out in the early 1960s, and its renewed growth coincided with the start-up of Medicare (1965) and Medicaid (1966). This was no coincidence: both programs created huge financial opportunities for hospitals, particularly for for-profits.

Medicare, which covered persons age 65 and over, paid hospitals for their operating costs, with a 2% add-on for future "capital improvements" and additional payments for existing capital costs (such as interest on debts and depreciation).<sup>166</sup> While the Hill-Burton program that provided massive federal grants for hospital construction starting in 1946 barred for-profit hospitals from participating,<sup>167,168</sup> Medicare (and most state Medicaid programs, which cover some of the poor) offered for-profits extra payments which were unavailable to non-profit or public facilities. This additional capital payment for return on investment was set at 1.5 times the rate of return earned by Medicare's Hospital Insurance Trust Fund.<sup>33</sup> This proviso, inserted at the insistence of the nursing home industry, virtually guaranteed for-profit facilities a "risk-free" investment return.<sup>166</sup>

Medicare's and Medicaid's capital payment policies spurred the rapid growth of hospital firms such as HCA (previously Hospital Corporation of America), which was founded in 1960, and by 1980 owned about 300 hospitals with 40,000 beds. Much of that growth came from acquisitions that were effectively subsidised by the public program, which (in addition to the generous payments discussed above) reimbursed for-profits for their interest payments on debts incurred to purchase additional hospitals.<sup>86,169</sup> Moreover, tax laws permitted owners of hospital buildings to claim accelerated depreciation over a 15-year period. These measures assured for-profit hospitals of ready and cheap access to funds for new investments. By the early 1980s, for-profit providers were receiving 40% of all capital reimbursements nationally, although they accounted for only 7.6% of total hospital expenses.<sup>86</sup> This

favourable public reimbursement scheme stimulated the creation of new hospitals and the consolidation of the for-profit sector (Table 2.2).

**Table 2.2.** Growth of investor-owned hospital chains around 1980 in the US

	Number of chain-owned hospitals	Percentage of total hospital beds	Number of stand-alone for-profit hospitals
1975	378	5.2%	682
1980	531	7.5%	n/a
1982	682	8.9%	330

Source: Gray (1986)<sup>86</sup>

### *Market-driven healthcare reforms during the Reagan Administration*

The Reagan Administration's (1981-1989) health policies were driven by its stated desire to reduce government spending and introduce market-based principles, an approach resembling the NPM ideology ascendant around the same time in the UK.

In 1982, the average profit margin of for-profit hospital chains was more than double that of the hospital sector as a whole – 9.2% versus 4.3%.<sup>170</sup> While advocates saw this as an indication of more effective management,<sup>167</sup> the growth of investor-owned hospital chains provoked increasing debate, leading the Institute of Medicine (IOM) to undertake the first large-scale study of for-profit hospitals in 1986.<sup>86</sup> The IOM panel concluded, ambiguously, that for-profit ownership was having an important effect on the health system but that the available evidence was insufficient to justify policies either opposing or supporting investor ownership.<sup>86</sup>

The administration's political bent precluded taking any steps that directly challenged the existence of the for-profit hospital sector. However, starting in 1982, the generous capital reimbursements to for-profit providers were gradually phased out after the publication of highly critical reports by the U.S. General Accounting Office (GAO).<sup>171</sup> The return-on-equity payment rate was cut from 1.5 to 1.0 times the rate of return of the Hospital Insurance Trust, and the option to charge Medicare for acquisition costs was discontinued by the Deficit Reduction Act of 1984.<sup>172</sup>

In 1983, Medicare replaced cost-plus hospital reimbursement with a system based on diagnostic-related-groups (DRGs).<sup>173</sup> DRG proponents hoped the shift would stimulate efficiency and moderate hospital costs. Initially, the for-profit sector welcomed the new payment approach, anticipating that it would reward more efficient providers, and hence be to its advantage. But things turned out differently. Reports of high hospital profit margins led Congress to repeatedly reduce annual payment rate increases, which cut profits.<sup>174</sup> Capital costs and return on equity payments were gradually folded into DRG payments, rather than being add-ons, as under Medicare's prior payment system. By 1992, for-profit hospitals were no longer receiving the extra payments that they had enjoyed since 1966. Moreover, adverse publicity generated by the practice of patient dumping of critically-ill uninsured

patients<sup>175</sup> triggered passage of the 1986 Emergency Medical Treatment and Labor Act which to this day requires emergency departments to stabilise urgently ill patients regardless of ability to pay,<sup>176</sup> crimping for-profits' ability to avoid unprofitable patients.

The for-profit hospital industry's exuberant expenditures on lobbying indicate the importance it has placed on political and regulatory decision making. In 1985, the industry accounted for 36% of all hospital lobbying expenses and 30% of hospitals' contributions to political candidates, while its trade association funded another 25% of contributions.<sup>177</sup> Despite these contributions, for-profits encountered some new policy constraints, but kept on growing.

### *The managed care era*

Starting in the 1980s, traditional health insurance that paid virtually anything that any provider charged gradually gave way to managed care plans, which negotiated lower prices and imposed strict utilisation management and restricted networks of providers.<sup>178</sup> The price reductions, narrow networks and utilisation reviews reduced hospital utilisation and left hospitals with excess capacity.<sup>179</sup> The financial pressure on hospitals was intensified by the 1997 Balanced Budget Act (BBA), which initiated three years of meagre Medicare payment rate increases. For-profit hospitals' revenues stalled and the acquisition value per bed was halved.<sup>180</sup>

For-profit hospital chains responded by reshaping themselves into locally dominant systems (i.e. oligopolies) with the muscle to extract higher prices from private payers. They also initiated grassroots (or "Astroturf") campaigns to loosen the restraints imposed by the BBA, and contributed to the managed-care backlash of the late 1990s; this pushed many private payers to shift to plans (such as preferred provider organisations) that had less restrictive networks (although they also typically came with higher co-payments).<sup>181</sup>

Several other strategies have bolstered the for-profit hospital sector's resilience in the US, despite less favourable reimbursement regulations and increasing penetration of managed care. For-profits have diversified through activities such as psychiatric inpatient care, and have applied rigorous "turn-around-management" to failing public and non-profit hospitals that they have acquired. Some firms have reaped profits by acquiring cash-strapped hospitals sitting on valuable real estate and selling off the buildings. For-profit hospitals have also sometimes profited by manipulating complex rules, e.g. purchasing publicly-financed assets at below market prices. Finally, several of the largest for-profit firms have engaged in outright fraud and abuse, including large-scale up-coding (portraying patients as sicker than they really are in order to maximise reimbursement).<sup>182</sup> HCA, still the largest for-profit chain, paid \$840 million to settle charges of engaging in such inappropriate practices,<sup>183</sup> while another for-profit hospital organisation, Tenet, has paid millions in fines for overbilling Medicare for cardiac surgery.<sup>184,185</sup>

*Physician incentives and participation in the for-profit sector*

Although an increasing proportion of US physicians are employed by hospitals,<sup>186</sup> historically most have been self-employed and affiliated with one or more hospitals. In earlier decades, for-profit hospitals offered physicians financial incentives, such as an equity stake in a local venture, to admit patients.<sup>33</sup> Starting in the 1980s, for-profit and other general hospitals faced increasing competition for lucrative patients from outpatient surgery centres and physician-owned specialty hospitals offering a limited range of services, such as orthopaedic and cardiac surgery.

Specialty hospitals were particularly threatening for the existing general for-profit hospital industry because of their focus on high-revenue services and the rapid growth in their patient volumes. In December 2003, Congress imposed an 18-month moratorium banning new physician-owned specialty hospitals from billing Medicare. While the American Medical Association had, until 1984, discouraged physician ties to for-profit hospitals, in 2004 it opposed extending the moratorium – opposition that was overridden by hospital groups that lobbied intensively against specialty hospitals’ “unfair” competition. In 2005, Congress re-imposed the moratorium,<sup>187</sup> however, it was lifted again in 2006.<sup>188</sup>

At present, wages for non-physician hospital employees are generally lower at for-profit than at non-profit hospitals, a reversal of the pattern in 1990. In contrast, for-profits often offer physicians lucrative arrangements in the form of incentive-based payments<sup>189</sup> or a share of hospital profits.<sup>190</sup>

*Recent developments: The Affordable Care Act, the Trump Administration and the COVID-19 Crisis*

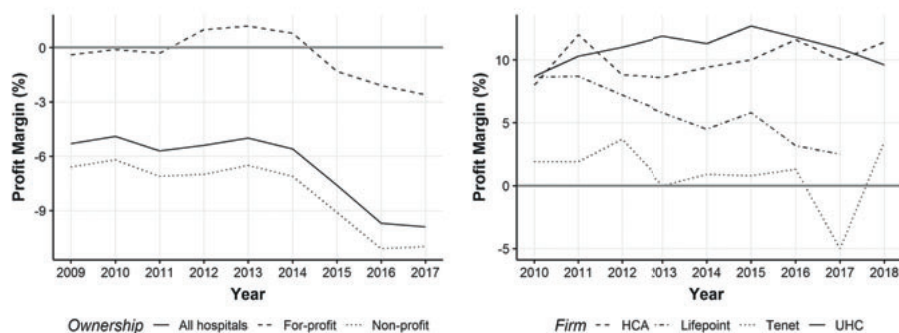
The most important effect of the 2010 Affordable Care Act (ACA) was a reduction in the uninsured rate from 15.5% in 2010 to 8.6% in 2016.<sup>191</sup> The decline in the number of uninsured benefited the for-profit sector by reducing bad debt and free care, although this has been offset by rising co-payments that have led to increases in bad debts among persons with coverage.<sup>192</sup> The ACA also implemented accountable care organisations (ACOs) and so-called value-based purchasing programmes in Medicare which have had mixed effects on hospital margins. Moreover, the vast majority of hospitals participating in ACOs are non-profits.<sup>193</sup>

In addition, the ACA cut the annual increase in Medicare’s payment rates for hospitals, widening the gap between the rates paid by public vs. private insurers,<sup>194</sup> and increasing the incentives to recruit privately-insured patients.<sup>195</sup> Of particular relevance to for-profit hospitals, Section 6001 of the ACA placed new restrictions on existing physician-owned specialty hospitals, and reinstated a moratorium on payments to new ones. While several such hospitals rushed to open before the moratorium came into effect, their numbers subsequently fell to the advantage of other for-profit hospitals.<sup>196</sup>

On the whole, it appears that non-profit and public hospitals have borne the brunt of adverse financial consequences from the ACA, while for-profits have continued

to prosper, as illustrated by their more favourable Medicare margins (Figure 2.2.), and by the fact that the profit margins of the largest for-profit chains have remained relatively stable or have increased.

**Figure 2.2.** Trends in Medicare margins of all US hospitals (left panel) and the profit margins of the largest for-profit hospital firms (right panel)<sup>a</sup>



<sup>a</sup> Margins in the left graph are calculated as payments minus Medicare-allowable costs, divided by payments. “Overall Medicare margin is for acute inpatient, outpatient, hospital-based skilled nursing facility (including swing beds), hospital-based home health, and inpatient psychiatric and rehabilitation services, plus uncompensated care, graduate medical education, and electronic health record incentive payments”<sup>78, p.85</sup> The margins in the right graph are calculated as Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA).

Source: MedPAC (2017)<sup>78</sup>, MedPAC (2019)<sup>197</sup>, Bureau van Dijk (2020)<sup>198</sup>, HCA Healthcare (2015;2013;2010)<sup>199-201</sup>, Universal Health Services (2018;2015;2013;2010)<sup>202-205</sup>, Tenet Healthcare Corporation (2018; 2015;2013;2010)<sup>206-209</sup>

Until the COVID-19 outbreak, for-profit hospitals have fared particularly well during the Trump administration. While the corporate tax cuts enacted in 2017 attenuated the tax exemption advantage of non-profit hospitals,<sup>210</sup> it saved the largest for-profit chains an estimated \$800 million in 2018.<sup>211</sup> And since Trump assumed office, Medicare reimbursement rates have increased, benefiting both non-profit and for-profit hospitals.<sup>212</sup>

Most recently, the COVID-19 pandemic has damaged the finances of for-profit hospitals<sup>213</sup> because, as one firm said in a statement, “Elective surgeries are the cornerstone of our hospital system’s operating model – and the negative impact due to the cancellation of these procedures cannot be overstated.”<sup>214</sup> At the time of writing, the long-term repercussions of the pandemic on for-profit hospitals remain uncertain.

#### 2.4.2. The United Kingdom

*For-profit hospitals in a country with a national health service*

The NHS, established in 1948, promised care “free at the point of delivery” to all. The Labour Government nationalised almost the entire hospital sector. Only some non-



profit hospitals remained outside the NHS at the time, and several private insurers, anticipating that demand for private insurance would persist, formed the British United Provident Association (BUPA), which, in 1949, covered 34,000 subscribers.<sup>33</sup> Until the 1970s, this so-called “independent sector” had modest growth. While hospitals outside the NHS originally were mostly non-profits, this independent sector transitioned to mostly for-profit ownership over time.

To enlist senior specialists’ (consultants) crucial support for the NHS,<sup>215</sup> the government allowed them to engage in some lucrative private practice within NHS hospitals, using so-called “pay-beds”. Pay-bed payment rates were very high, although the number of patients who used them was small.<sup>216</sup> Nevertheless, these pay-beds were very important for the income of consultants. As the NHS’ founding father, Aneurin Bevan, famously said, “I stuffed their mouths full with gold”.<sup>217</sup>

Initially, pay-bed care was mainly financed through out-of-pocket payments. While the role of private insurance grew over time,<sup>218</sup> by as late as 1975, 40% of bills for private care in the NHS were still paid out-of-pocket.<sup>219</sup> When some non-profit hospitals began to be incorporated into the NHS, the availability of private care was limited and private insurers were increasingly anxious to expand the supply of private providers for their clients. In 1957, BUPA, by far the largest private insurance company, donated a substantial sum to facilitate the emergence of the first private non-profit hospital chain, known as the Nuffield Hospitals. By 1967, Nuffield was operating 13 hospitals, which grew to 26 in 1976.<sup>220</sup> It remains a non-profit, but commercially-influenced, private hospital chain.

#### *Commercial conversions in the for-profit sector*

During the 1970s, private hospital care triggered heated debate. In 1974, the Labour Government, supported by the unions, tried simultaneously to limit the number of NHS pay-beds and to severely curtail the independent sector.<sup>221</sup> They harvested the opposite – a much more commercial independent hospital sector. The government’s policies posed a direct threat to the income of NHS consultants who pursued private practice. Many consultants were outraged and massive strikes loomed. A coalition of private insurers and private hospitals managed to gather the support of the British Medical Association (BMA) to block implementation of these policies.<sup>222</sup> The government compromised: the number of pay-beds would be reduced, but less than had been previously planned, and the government promised less interference in the independent sector. However, an unintended consequence of this was that NHS consultants began to refer large numbers of their private patients to the independent sector.

Spurred by new opportunities, the independent hospital sector took on an increasingly for-profit character as new for-profit providers stepped into the market. BUPA founded its own for-profit hospital subsidiary. US hospital chains opted to enter the UK, which served as a pilot to test whether they could find success outside their home country. These groups invested heavily in new facilities and equipment.



The prospects of the young for-profit hospital sector greatly improved after Margaret Thatcher's rise to Prime Minister in 1979, and the ascendancy of NPM ideology in the NHS, which was fuelled by the Griffiths Report.<sup>12</sup> Retrenchment of the public sector was at the core of this ideological project. NHS budgets were curtailed, causing large increases in waiting lists for elective surgery and making private alternatives more attractive. The government also encouraged public purchasers to consider the private sector in their tendering process,<sup>223</sup> opening up additional opportunities for consultants to earn money in the independent sector (also referred to as revised consultant contracts). As a result, in 1984, 85% of consultants engaged in some private practice – the highest figure since the NHS's founding.<sup>224</sup> Between 1979 and 1985, the number of private sector beds increased from about 6,500 to 10,200, with for-profit hospitals accounting for half of the total.<sup>225</sup> However, the government's attempts to commission for-profit clinics to reduce NHS waiting lists proved unsuccessful.<sup>226</sup> One of the problems was that the marginal costs of using private facilities were higher on average.<sup>226</sup> These higher costs reflected (1) very high private physician rates (according to Laing, up to five times higher than in other countries<sup>227</sup>) and, (2) scale disadvantages because many of the private clinics were very small.<sup>33</sup> Private providers were able to demand high prices from private health insurers because of limited competition in the private sector and because patients perceived private care as a luxury product.<sup>228</sup>

#### *The internal market and the purchaser-provider split*

In 1991, local health authorities were given the responsibility of commissioning hospital care (under the so-called "purchaser-provider split") and were allowed to purchase services from private for-profits under certain circumstances. Many NHS trusts reformed their pay-beds into Private Patient Units (PPU) in separate complexes that mimicked the more luxurious surroundings of the private sector. The private sector perceived this development as a threat to their business and argued that it constituted unfair competition.<sup>229</sup> While the purchaser-provider split did not substantially change the NHS provider markets – with public providers continuing to enjoy local monopolies and encounter little competition – the outdated capital (i.e. buildings and equipment) infrastructure of the NHS, and increasing waiting lists nourished the continuing growth of the for-profit hospital industry.

In the late 1990s, Tony Blair's New Labour government initiated massive investments in the NHS. Consultants were offered huge pay raises if they agreed to work more NHS hours.<sup>230</sup> By 2012, the proportion of consultants engaged in private practice had fallen to 53%, down from approximately 70% in 1993.<sup>231-233</sup> NHS consultants were also discouraged from relying on private earnings by the imposition of the "10% rule" which forbade those on full-time contracts from earning more than 10% of their income from private practice.<sup>232</sup> Gradually, the NHS became more appealing to private patients.

These changes also led the for-profit sector to gain interest in selling services to the NHS. In 2002, for-profit independent treatment centres (ITCs) took part in a £1.6 billion program to reduce NHS waiting lists<sup>234</sup> and, in 2005, a second phase was launched with an estimated cost of £4 billion.<sup>235</sup> Most contracts were given to new foreign providers who set up special clinics for this purpose. These non-British physicians were typically cheaper to employ and ensured compliance with a prohibition on drawing away NHS staff.<sup>236</sup> Established private providers observed this new competition with dismay.

The prospects of the new patient-choice policies were also problematic. Under these policies, patients could opt for any private provider willing to accept the NHS's payment rates. Consequently, private hospital groups felt increasingly pressured either to stay with their existing high-cost business model catering to private patients, or to adopt new low-cost business models for NHS patients. Private insurers also became more critical purchasers, trying to lower costs by stimulating the growth of hospital networks. However, this shift actually favoured for-profit groups because of their larger scale and negotiation power. By 2007, the for-profit sector operated almost 75% of all private hospital beds, but overall growth had stalled.<sup>33</sup>

### *The decade of austerity*

The 2008 financial crisis led to austerity policies that had a negative impact on private care, as illustrated by the negative profit margins of BMI Healthcare, the largest private provider (Table 2.3.). Spire Healthcare and Ramsay (a global firm that today operates 480 hospitals worldwide, including in the UK) fared better over the long term (Table 2.3). These woes were largely attributable to the decline of private insurance, with enrolment falling steeply in the past decade.<sup>53</sup> Private hospitals were only partly able to compensate for this decline by increasing services covered by low-margin public funding and by a small number of self-pay patients.

**Table 2.3.** Profit margins of the largest UK hospital chains

	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>BMI Healthcare<sup>a</sup></b>	-3.5%	-6.3%	-8.5%	-2.4%	-1.7%	0.0%	-10.0%	-4.2%	1.9%
<b>Ramsay<sup>b</sup></b>					9.0%	9.7%	10.4%	10.4%	6.0%
<b>Spire Healthcare<sup>c</sup></b>				-6.8%	-0.8%	8.3%	7.9%	2.4%	0.9%

<sup>a</sup> BMI Healthcare figures are based on Earnings Before Interest and Tax (EBIT).<sup>198</sup>

<sup>b</sup> Figures are based on Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA) of Ramsay's hospitals in the UK.

<sup>c</sup> Figures are based on EBITDA.

Sources: Bureau van Dijk (2020)<sup>198</sup>, Ramsay (2019; 2017; 2015)<sup>237-239</sup>, SPIRE healthcare (2018; 2016; 2014)<sup>240-242</sup>

The Conservative government's stringent austerity policies held healthcare expenditures flat over a four-year period (2011/2012 to 2014/2015) while the government opened opportunities for private providers to deliver services paid for by the NHS. The White Paper *Equity and excellence: liberating the NHS* mandated that patients be allowed to seek care from any provider of their choosing, and that quality guidelines and prices be harmonised.<sup>243</sup> The Health and Social Act (2012) introduced Commissioning Groups – one of the most far-reaching pieces of legislation in the history of the NHS.<sup>244</sup> Private providers were finally granted the right to bid for contracts to deliver NHS services and won one-third of all contracts (although 85% of the funds were still awarded to NHS providers).<sup>245</sup> With this increased access to NHS contracts, the private sector now derives 32% of its revenues from lower-margin public funding, up from 5% a decade ago.<sup>53</sup>

Austerity measures also affected NHS consultants. Because of a pay freeze put in place in 2010 that applied to all NHS staff, total gross earnings fell by 2.6% between 2009 and 2015, and junior doctors and consultants alike had to tighten their belts.<sup>246</sup> Moreover, the private sector's financial problems curtailed consultants' opportunities to supplement their incomes.

#### *Brexit and the future of for-profit hospitals in the UK*

Although for-profit providers can now compete for NHS resources, popular suspicion about a post-Brexit "privatisation of the NHS" persists. In addition, the BMA has become more critical of the private sector and highlights the risks associated with contracting private hospitals to deliver NHS care.<sup>79</sup> They and others have voiced concern about the lack of transparency of private hospitals.<sup>79,247</sup>

The question at present is what impact the Long-Term Plan for the NHS and the COVID-19 crisis will have on the private sector. The Long-Term Plan delegates greater autonomy to the UK's new leading integrated care systems – its version of ACOs<sup>248</sup> – to manage services. These systems may enjoy even greater latitude to contract out services to private partners. At the time of writing, the COVID-19 outbreak hit the United Kingdom (especially England) hard in terms of excess mortality compared with continental European countries.<sup>249</sup> The huge backlog in maintenance of NHS buildings (estimated to total £6.5 billion<sup>250</sup>) and the strain on the public budget caused by the medical catastrophe and impending recession may push the government to seek further support from the private sector. During the COVID-19 outbreak in spring 2020, the government block-bought the private hospital capacity.<sup>213</sup>

#### **2.4.3. Germany: privatisation of the public sector**

In the early twentieth century, affluent families usually received inpatient and outpatient hospital care at proprietary clinics. From 1931 onwards, hospitals were required to focus only on inpatient treatment, and most of their physicians were salaried.<sup>251</sup> However, in rural areas, due to shortages of local ambulatory specialist

care, some proprietary staff hospitals continued to function as “open staff” facilities in which a combination of outpatient and inpatient care were still permitted.<sup>33</sup>

### *Short on money after World War II*

World War II destroyed the German hospital sector. West Germany became a federal republic with powers vested in the states if not explicitly granted to the federal government. In healthcare, many powers were delegated to nongovernmental bodies, with self-regulation (including the allowance of mixed hospital ownership) serving as a guiding principle. Thus although for-profit providers, and their participation in healthcare delivery, were legally uncontroversial, the for-profit hospital sector’s market share declined until German reunification in 1989.<sup>33</sup>

After World War II, the hospital sector was in a dire state and had to be completely rebuilt. However, capital was scarce and public needs other than hospitals were prioritised. Hospitals incurred significant deficits annually,<sup>252</sup> which, in many cases, had to be covered by the states and the municipalities that owned them. The federal government and sickness funds which paid the hospitals focused on keeping contribution rates low. As a result, policies during the 1950s and 1960s prioritised public- and non-profit hospitals over for-profit hospitals.<sup>252</sup> For-profits could not therefore fall back on deficit funding from local governments, capital subsidies from the states, or endowments and free labour from the voluntary sector. Two niche markets survived: (1) one that offered profitable services and better amenities to well-off privately insured patients whose insurers paid rates 1.5 to 2 times as high than those paid by sickness funds,<sup>253</sup> and (2) one that provided access to inpatient facilities for ambulatory medical specialists in sparsely populated rural areas, especially Bavaria.<sup>254</sup> Nevertheless, by 1969, proprietary hospitals’ share of acute care beds had fallen to 4.3%, down from almost 8% in the late 1950s.<sup>33</sup>

### *Dual funding: capital versus current costs*

The pressing financial situation of the hospital sector was finally addressed in 1972. The Hospital Finance Act (HFA) (which required a change in the constitution) initiated systematic planning of hospital infrastructure, with the federal government assuming responsibility for co-funding hospital investments. The HFA introduced dual funding, whereby the states (Länder) and federal government were jointly responsible for funding capital investments. The amounts invested were based on state planning and calculations of operating costs by sickness funds.

While the HFA greatly augmented hospital funding, it prevented for-profit hospitals from receiving capital subsidies for about the first ten years of its existence. These entities were excluded from hospital planning. Moreover, private physicians in for-profits were not permitted to charge sickness funds higher rates for their services than other providers. Sickness funds could only contract with for-profit hospitals under limited conditions and were not required to contract with physicians who

were not listed in state hospital plans.<sup>255,256</sup> Thus, for-profit hospitals either had to operate with a lower cost base than their peers or had to rely on private patients.

Most states were unable to meet demands for public capital and soon shortages became evident, the so-called *Investitionsstau*. Additionally, in 1984 – a year after a right-leaning party came into power – the federal government stopped contributing to hospital capital investment and reduced hospital investment budgets.<sup>93</sup> At this point, rules were changed to permit states to incorporate for-profit providers in their hospital plans.<sup>257</sup> Additionally, hospital operating payment schemes increasingly included funding for small investments. Many municipalities, struggling to support heavily indebted public hospitals, debated privatising them. In 1984, the city of Hürth, unwilling to continue meeting its hospital's annual deficit, was the first to turn to privatisation.<sup>258</sup> However, soon thereafter, improved economic conditions reduced the pressure for privatisation.

#### *Reunification and the boom in for-profit hospital care*

In 1989, German reunification triggered a for-profit hospital boom. Reunified Germany had to cope with large numbers of neglected public hospitals in the eastern part of the country and privatisation seemed an appealing solution. For-profit hospitals were accorded prominent roles in most of the new states.<sup>93</sup> Corporate tax reductions also improved the investment climate.<sup>154</sup>

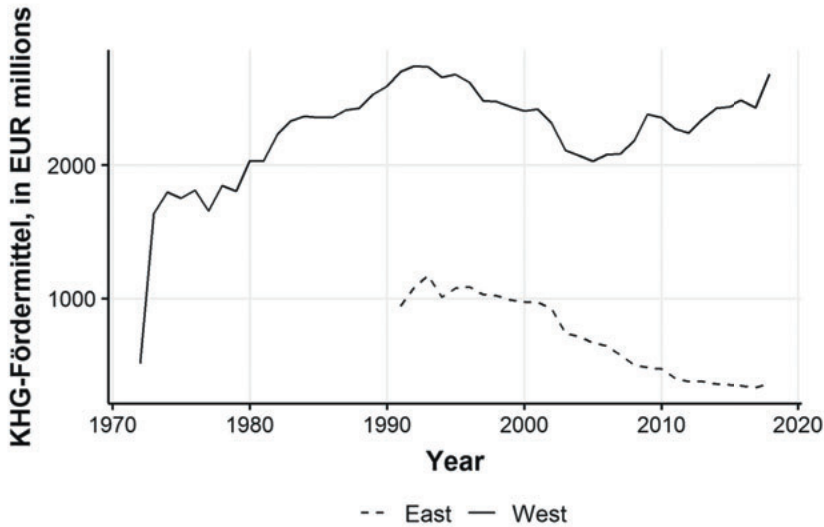
In 1989, Rhön-Klinikum was the first hospital group to be listed on the public stock exchange. Other hospital chains soon emerged, including Fresenius/Helios and Asklepios. Such publicly-traded hospital groups were well-positioned to take over and consolidate struggling hospitals in East Germany. They paid very low (or no) acquisition costs, while taxpayers were providing relatively generous capital funding (Figure 2.3.). By 2001, the privatisation of hospitals to for-profit status was 22% in Thuringia, 20% in Saxony, 16% in Mecklenburg, 12% in Berlin and 11% in Brandenburg with only Saxony-Anhalt lagging somewhat behind.<sup>33</sup>

The financial situation of hospitals in West Germany stagnated, partly because huge state investments were being made to improve living standards in East Germany (e.g. infrastructure investments).<sup>260</sup> This eventually triggered privatisation in the West as well. For-profit hospital market share in Hesse and Schleswig-Holstein grew to over 20%. However, in densely populated North Rhine-Westphalia, which had many private non-profit hospitals, for-profit market share remained under 5% in 2007.<sup>33</sup>

Physicians were generally amenable to for-profit hospital conversions, in part because they typically offered more favourable terms of employment.<sup>261</sup> (However, since 2008, physicians in public hospitals have received larger salary increases).<sup>262</sup> Public sector wages today are uniform across hospitals,<sup>263</sup> while labour agreements set private sector wage scales that vary from hospital to hospital.<sup>264</sup> At present, physician pay is generally lower in for-profit hospitals (Table 2.4), although Helios is an exception.<sup>265</sup> The income of physician executives in for-profit hospitals, however,

is often tied to the financial performance of the hospital, and in some cases may be significantly higher than the amounts set out in the labour agreements.<sup>266</sup>

Figure 2.3. Total annual hospital capital funding (Krankenhausfinanzierungsgesetz) 1970-2020



Source: Arbeitsgemeinschaft der Obersten Landesgesundheitsbehörden<sup>259</sup>

Table 2.4. Monthly gross pay scales (in Euros) for medical specialists according to number of years of service, 2019

	1-3 years	4-6 years	7-8 years	9-10 years	11-12 years	13 years
<b>Public hospitals</b>	5956	6455	6894	7149	7399	7649
<b>Rhön Klinikum</b>	5579	6040	6514	6745	7031	7188
<b>Asklepios</b>	6025	6530	6965	7230	7475	7625
<b>Helios<sup>a</sup></b>	6123-6305	6634-6938	7182-7486	7546-7608	7729-7791	7791

<sup>a</sup> Helios is the only one with where pay scales rise with each year of experience rather than every 2 to 3 years, hence, the range in the cells

Sources: Vereinigung der kommunalen Arbeitgeberverbände, Helios, Asklepios, Rhön Klinikum  
267-270

Hospital payment reforms introduced in the 1992 Health Care Structure Act and the 1997 Hospital Restructuring Act gradually weakened the dual funding structure and paved the way towards a DRG-like prospective payment system. Although the principle of the dual funding structure remained intact, these acts introduced fixed budgets and spending caps to curb costs. In other words, these reforms put the hospital sector under financial pressure. Whereas between 1988 and 1992, state subsidies covered almost all capital investments, between 1993 and 1997 this fell, with almost 40% of hospital capital investments coming from sources other than state

subsidies.<sup>271</sup> As for-profit hospitals received lower levels of state capital subsidies than public hospitals, they were less affected and, therefore, gained a certain comparative advantage.<sup>93,272,273</sup>

#### *Merkel's legacy on for-profit hospital growth in Germany*

Angela Merkel's chancellorship has produced no major reforms in the healthcare sector,<sup>274</sup> but incremental policy changes during her tenure may have profound long-term effects. First, the 2015 Health Care Strengthening Act which aimed to foster integration among providers and to integrate care models, weakened the separation between inpatient and outpatient care, and allowed hospitals to provide some ambulatory care.<sup>275,276</sup> This legislative change opened up a new market for the for-profit sector. Second, the 2016 Hospital Structure Reform Act called for quality-based hospital planning and pay-for-performance schemes, and aspired to reduce capacity, consolidate care into fewer facilities and control inpatient utilisation. As a result, the Fixkostendegressionsabschlag (FDA) now fines hospitals that increase the volume of care they deliver. Some predict that this legislation will incentivise hospitals to provide more lucrative services and avoid provision of less profitable ones.<sup>277</sup>

The hospital sector has prospered under Merkel's tenure, with the profit margins of all hospitals rising by approximately 1 to 3 percentage points (authors' own calculations).<sup>277-279</sup> Yet, the profit margin of the for-profit sector as a whole remains significantly higher than that of other ownership types.<sup>277-279</sup> Profit margins of the largest for-profit hospitals chains depict a similar pattern with relatively stable profit margins over the years (Table 2.5).

At present, Germany has a large and prosperous for-profit hospital sector, and the financial environment remains favourable for for-profit hospitals. However, the competition authority has recently raised concerns about the high level of concentration in the private hospital market,<sup>280</sup> making it more difficult for for-profit chains to continue to expand domestically. Partly for this reason, Fresenius – the largest German hospital firm, operating under the hospital brand name “Helios” – took over Quirónsalud to expand in Spain, and thus become the largest hospital chain in Europe.



**Table 2.5.** Profit margins largest chains in Germany<sup>a</sup>

	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Asklepios Kliniken</b>	5.7%	5.3%	6.2%	5.3%	6.7%	6.6%	7.7%	8.6%	
<b>Helios Kliniken (Krefeld, Schwerin, Duisburg, Hildesheim, München)</b>	5.8%	3.6%	4.0%	3.5%	-6.6%	8.4%	11.1%	9.6%	11.6%
<b>Sana Kliniken AG</b>	3.7%	3.7%	3.1%	3.2%	3.7%	4.0%	4.9%		4.7%

<sup>a</sup> Figures are based on EBIT. Helios is the biggest German chain, but figures only reflect the profit margins of the five mentioned hospitals between brackets.

Source: Bureau van Dijk (2020)<sup>198</sup>

#### 2.4.4. The Netherlands: a counterfactual case to for-profit hospital growth

*Why the for-profit hospital industry did not kick off in the Netherlands*

Dutch for-profit hospitals have never flourished. Non-profit hospitals have had a strong foothold in the healthcare system since the 1850s because of the reliance in Dutch society on religious communities (rather than government) to provide social services – so-called “pillarisation”. For a long time, non-profit hospitals were also open staff, which discouraged physicians from building their own, competing facilities. Thus the drivers of proprietary hospitals in the US, the UK and Germany (lack of physician access and lack of amenities and services for the well-off) were not prominent in the Netherlands, and non-profit hospitals gradually became the dominant providers.

After World War II, hospitals wanting to make new capital investments were required to obtain a certificate-of-need from the local municipality, but the local government bore no responsibility for funding the investment. Instead, the social insurance scheme was required to include reimbursement for approved capital expenditures (but not return on equity) in each hospital’s per-diem rates, making hospital capital investments virtually risk-free, and obviating the need for hospitals to accumulate cash for down payments.<sup>33</sup> As a result, a construction boom followed. But with little demand for private capital to fund hospital investments<sup>281</sup> and little profit incentive for investors,<sup>282</sup> conditions were not favourable for the growth of for-profit hospitals.

*Legal prohibition of for-profit hospital ownership*

The 1971 Hospital Facilities Act (HFA) was a response to the burst of construction and fears that costs would escalate. The act centralised hospital planning (by removing municipalities’ right to approve new hospital investments) and provided a mechanism to enforce cost-containment policies. The HFA also prohibited for-profit hospitals from receiving certificates-of-need or reimbursements from the social insurance scheme.<sup>283</sup> This legal restriction was the final door to shut on the prospects of for-profits (although theoretically it remained possible for for-profits to purchase



existing non-profit hospitals and offer services to privately-insured patients). Private insurers, which covered the wealthiest 30% of the market, were strongly embedded in the corporatist decision-making structures of Dutch healthcare and, unlike in the UK and Germany, did not push for the development of private hospitals.

*Managed competition, but without for-profit hospitals*

Managed competition theory profoundly influenced Dutch health policy. The 2006 Health Insurance Act (HIA) was the flagship effort to create an entirely private healthcare system, based on the principles of regulated competition, with hospitals paid through DRGs.

Under the reform, private insurers could compete for customers – although they were prohibited from distributing profits to owners or shareholders – and were given increasing latitude to negotiate prices with providers; in 2012, prices for 70% of inpatient DRGs were subject to negotiation.<sup>30</sup> With managed competition being the new policy paradigm, for-profit hospital ownership was seen by many as the logical next step,<sup>32</sup> including the High Court.<sup>283</sup> Moreover, the 2005 Health Care Institutions Admission Act, the successor to the HFA, had simplified regulations and reduced the government's role in hospital planning, which seemingly opened the way for the lifting of the ban on for-profit hospitals. Indeed, the government stated that it was prepared to lift the ban by 2012 and that hospitals would be permitted to become private companies so long as they did not pay any dividends to investors until the ban was formally lifted.<sup>283</sup> Twelve hospitals converted to private ownership status, although not all sought to become for-profits (authors' calculations using annual reports). In 2008, the remaining certificate-of-need regulations and capital reimbursement schemes were phased-out. Hospitals were then free to (re)develop property. However, under prospective payments, they became exposed to investment risks.<sup>284</sup>

In anticipation of the lifting of the ban on hospitals operating for profit, private investors acquired three hospitals (MC Slotervaart, MC IJsselmeerziekenhuizen and Red-Cross Hospital). In the case of the IJsselmeerziekenhuizen, the government donated approximately €20 million to save it (2008).<sup>285</sup> The two MC hospitals eventually ran into severe financial problems, and by late 2018 were bankrupt; MC Slotervaart had to close its doors permanently in 2019, while the other hospital was merged with a local non-profit.<sup>286</sup> An independent committee investigating the causes of the bankruptcy cited, among other factors, the medical staff's suspicion that shareholders extracted money from the hospital through rent paid to an affiliated real estate firm. These suspicions fuelled a toxic relationship between the medical staff and the shareholders/board of directors, and made it difficult to reorganise the hospital.<sup>40</sup> The Red-Cross hospital remains in a stronger financial position,<sup>71</sup> and is currently the only surviving investor-owned hospital.

*Is there a future for for-profit hospitals in the Netherlands?*

The government's promise to lift the ban on for-profit hospitals' distribution of dividends was always controversial, and left-leaning parties that opposed lifting the ban were sometimes supported by the Christian Democrats. In 2013, the House of Representatives approved a law favourable to for-profit hospitals but which still imposed several restrictions: e.g. no profits could be distributed for the first three years; hospitals would have to maintain solvency ratios of at least 20%; and the hospital would have to receive a positive rating from the Health Care Inspectorate.<sup>287</sup> However, in 2014, the Dutch Minister of Health, Edith Schippers, asked the Senate to delay voting on the law,<sup>38</sup> claiming that it was not ready for implementation. Political considerations apparently contributed to the postponement; it has since come to light that the Senate would probably have voted against the law.<sup>39</sup>

In 2017, the newly formed government promised to make a decision in 2018 on whether to proceed with the law, but subsequently postponed this again to 2019.<sup>288</sup> In October 2019, the Minister of Health encountered political obstacles because of the widely publicised defaults of the commercially-owned hospitals described above, and scandals regarding excessive profits in the home care sector.<sup>289</sup> This was the straw that broke the camel's back; the government announced that it was taking the repeal of the ban on for-profit hospitals off the table.<sup>42</sup>

For the foreseeable future, the Dutch hospital sector will remain exclusively private-not-for-profit. However, it is notable that non-profit hospitals have greatly improved their capitalisation. Solvency ratios (assets/liabilities), which in 2002 were estimated to be 7%,<sup>290</sup> now average nearly 25% – an increase that has occurred mostly since the 2006 market reforms (Table 2.6). Since owners/managers of other types of healthcare providers have developed creative accounting tricks to circumvent the ban on distributing profits,<sup>291</sup> such high levels of solvency might well draw the attention of investors in the future.

**Table 2.6.** Solvency rates Dutch hospitals (2007-2017)<sup>a</sup>

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Average solvency rates</b>	11.9%	12.7%	14.1%	14.8%	16.8%	18.9%	20.8%	22.4%	20.9%	21.6%	23.7%
<b>Median solvency rates</b>	12.1%	12.6%	12.4%	13.8%	18.1%	19.6%	20.5%	22.5%	21.2%	22.4%	24.4%

<sup>a</sup> Authors' calculations.

Source: CIBG (2018)<sup>54</sup>

## 2.5. Discussion

### *Why the for-profit hospital sector has thrived in some countries, but not others*

After a period of decline during the first part of the 20th century, the for-profit hospital sector has grown rapidly in some, but not all, developed nations in recent decades. For-profit hospital market share rose steeply in Germany after reunification, and somewhat less briskly in the US since the 1960s. However, growth has been slow in the UK, and almost nil in the Netherlands.

In the US, public Medicare and Medicaid insurance programs implemented in the mid-1960s were favourable towards for-profit hospitals, offering them higher payments than non-profits. Conversely, the UK's NHS side-lined for-profits in 1948, and both the Netherlands (1971) and Germany (1972) excluded for-profit hospitals from most sources of public funding. With the rise of neoliberalism and NPM in recent years, all four countries have moved to bolster the role of for-profits, albeit with varying effects.

What explains for-profits' divergent paths across these four countries? Neither our case studies nor previous research suggests that for-profit success is attributable to greater efficiency. Instead, our cross-national comparisons suggest that three other factors influence the likelihood of for-profit success (Table 2.7): (1) access to capital funding and reimbursement for services from government healthcare financing programmes, and the generosity of these reimbursements; (2) the extent to which physicians' financial interests coincide with for-profit interests; and (3) the political environment. The first of these factors, the specific, seemingly arcane details of the terms of for-profits' participation in public healthcare financing programmes – especially access to capital funding – appears most important. Physicians' ability to realise financial benefit from for-profit hospitals was relevant in the early 20<sup>th</sup> century, but its importance has since waned. The political environment shapes key healthcare financing policies, but explicit decisions to ban or encourage for-profit ownership are often short-lived and of lesser importance.

### *Public payment systems' effects on for-profit development*

Three aspects of public policies regarding provider payments appear important: (1) regulations that determine access to capital subsidies and return on investments; (2) whether for-profits are allowed to bill public programs for the care they deliver; and (3) the effects of system-wide cost-control policies.

After World War II, private funds for hospital investment were scarce in all four of the countries we analysed. Governments stepped in to provide resources to expand hospital capacity through programmes that largely or completely excluded for-profits. Unable to access substantial funding to build or modernise facilities, for-profit providers mainly focused on niche markets.

Except for the Netherlands and Germany, for-profits gained greater access to public funding during the 1960s and 1970s. From its inception in 1965 until about

1990, the US Medicare program gave for-profits an explicit competitive advantage in the form of more generous capital payments than were available to non-profit or public hospitals. Thereafter, the playing field was formally levelled. German for-profits gained formal (but only partial) access to the stream of public healthcare funds starting in the 1970s and 1980s. However, for-profit privileged access to private capital funding through stock sales offered a decisive advantage in the early 1990s and allowed them to take over many East German hospitals badly in need of funds for modernisation. In the UK, the NHS has, since its founding, had a serious shortage of capital funds. Inadequate funding of the public sector created an opening for private providers to attract modest funding from investors. In contrast, the Netherlands banned hospitals from distributing profits to investors, effectively foreclosing the development of for-profit hospitals.

**Table 2.7.** Assessment of the impact of factors that affect for-profit hospitals' growth<sup>a</sup>

		United States	United Kingdom	Germany	The Netherlands
<b>Public funding</b>	Access to funding/ reimbursement for capital investments	4 Stimulated growth	3 Stimulated growth	4 Stimulated growth	5 Prohibited for-profits
	Access to and terms of reimbursement for service delivery from public programmes	4 Stimulated growth	4 Shaped provision	4 Stimulated growth	4 Hindered growth
	Cost-control measures applied to broader hospital sector	4 Created acquisition targets	5 Mixed effects	4 Created acquisition targets	3 Created acquisition targets
	<b>Concordance with physicians' financial interests</b>	Higher remuneration by for-profit hospitals	4 Mixed effects	5 Mixed effects	3 Mixed effects
<b>Political environment</b>	Supporting for- profit growth	3 Little debated	3 Mixed effects	5 Privatizations encouraged	4 Vetoed at several points

<sup>a</sup>1: very unimportant, 2: unimportant, 3: neutral, 4: important, 5: very important

For-profit hospitals in the US and Germany were granted immediate (US) or delayed (Germany) access to reimbursement for service delivery from public programs. Conversely, for a long time the for-profit sector in the UK relied primarily on private payments, and the sector's mode of provision – characterised by small-scale clinics offering superior amenities – was shaped by their role, which was limited mostly to providing supplementary services. The recent advent of outsourcing by the

NHS has given for-profits access to public payments, although they have struggled to find a profitable business model. The outlier is, again, the Netherlands, where for-profit hospitals were, until 2006 reforms, not allowed to bill the social insurance scheme. At present, for-profits may be reimbursed for services, but may not distribute profits to investors.

Several factors contributed to the apparent resilience of for-profit hospitals during periods when cost-containment policies squeeze the hospital sector. For-profits' ability to tap into private capital when public funding is in short supply may allow them to weather periods of austerity. Additionally, for-profits appear more willing and able to focus on profitable segments of the hospital market (e.g. cardiac and orthopaedic surgery in the US) and avoid unprofitable ones (e.g. care of the uninsured). For-profits are also often particularly skilled at exploiting legal (and occasionally illegal) loopholes in payment policies, e.g. through upcoding. Finally, the enforcement of cost-controls may open opportunities for investors to acquire struggling public and non-profit hospitals at reduced prices; although in the UK, for-profits' increasing reliance on NHS funding has left them vulnerable to cuts in public funding.

#### *Physicians' financial interests and their alignment with the for-profit hospital sector*

Across all four countries, physicians' financial interests were influential in determining the early development of for-profit hospitals. The UK – where consultants sought a venue for private practice – was the clearest case. Similarly to the UK, US for-profit business models depended on attracting (the patients of) self-employed physicians, which led some hospital firms to offer physicians stock or equity arrangements. In Germany, physicians in for-profit (and other) hospitals were generally salaried employees. To this day, non-profit hospitals in the Netherlands are effectively physician cooperatives that pay specialists – a well-organised group with substantial bargaining power – generous salaries.<sup>66</sup>

In the UK and Germany, the financial benefits that for-profit hospitals accorded to physicians has somewhat diminished. The number of NHS consultants working in the independent sector in the UK has declined. In Germany, the wages of physicians in most for-profit hospitals are now lower than that in other hospitals, perhaps reflecting the consolidation of hospital ownership (and hence bargaining power) as a few large chains have come to dominate the market.<sup>292</sup> In the US, the number of physician-owned hospitals appears to be declining, and more physicians have become employees either of hospitals or of practices owned by venture capital or private equity firms.<sup>293</sup> Based on our findings, we tentatively conclude that physicians' roles in stimulating the expansion of the for-profit hospital sector has diminished in recent years.

*Political decisions and their (non-)influence on for-profit market growth*

While political decisions can disrupt and influence the for-profit hospital landscape – particularly through reforms in hospital payment policy – the political colour of the ruling party has had surprisingly little impact on the growth of the for-profit sector in the four countries we studied (Figure 2.1). The only explicit effort by left-leaning politicians to roll back for-profit hospital care, during the mid-1970s in the UK, failed miserably because of strong physician resistance. Instead, these efforts backfired, and induced the commercial transformation of the independent sector. In the US, the advent of Medicare and Medicaid, implemented by a Democratic president as part of a broad expansion of social programmes, offered vast public subsidies to for-profit hospitals, accelerating their growth.

On the other hand, policies inspired by neoliberalism and NPM have had mixed effects on for-profit hospitals. In the US, the turn to market-based policies starting with DRGs in the 1980s has not proven uniquely favourable to for-profits, in part because non-profit hospitals have increasingly mimicked for-profit strategies. The fall of communism in Germany spurred the privatisation of public hospitals in the East, which continued for over twenty years. In the UK, the private sector benefited from the NPM ideological shift during Thatcher's premiership. However, despite the neoliberal and NPM-inspired 2006 reform in The Netherlands, for-profit hospitals there have not advanced significantly.

Several factors may underlie the limited effects of political swings on for-profit hospital growth. The hospital sector is inherently rigid: hospitals cannot be built nor acquire a patient base overnight. Once for-profits have gained substantial market share, their financial power confers political influence that enables them to safeguard their influence. And, relatedly, hospitals, as major employers, often wield strong influence in their local communities, helping hospitals ward off measures that might disrupt their business.

## **2.6. Conclusions and policy implications**

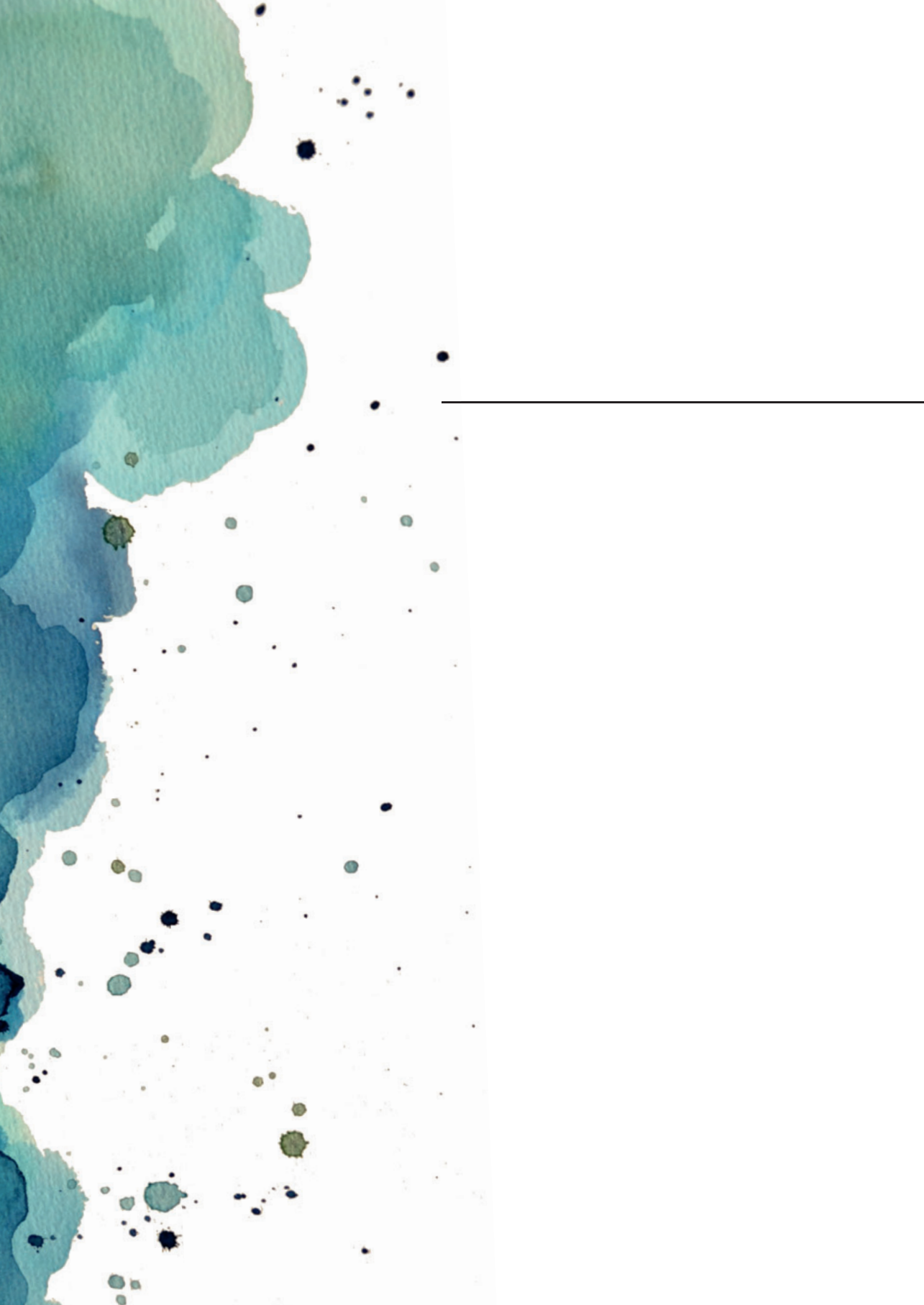
Our analysis highlights several factors that influence the size and success of the for-profit hospital sector. The seemingly technical details of how public reimbursement schemes treat for-profit providers, particularly regulations related to accessing public capital funding and reimbursement for private capital expenditures, have the greatest impact. Cost-containment measures and payment arrangements that have squeezed some non-profit and public hospitals in Germany and the US have also stimulated for-profit growth by providing openings for investors to acquire facilities at low costs. For-profit hospitals' early growth in the US and in Germany was also abetted by physicians who stood to gain financially. However, the role of physicians in stimulating the expansion of the for-profit hospital sector has apparently waned in recent years as more power has been ceded to investors. The commercialisation of hospital care can be a heated political topic, with left- and right-leaning politicians

often holding opposing views. However, the political environment, at least within the spectrum present in the nations we examined, had relatively little direct impact on the growth of the for-profit hospital industry, with the notable exceptions of the UK in the mid-1970s and Germany in the early 1990s.

### **2.6.1. Policy implications**

Decisions regarding public reimbursement schemes are critical determinants of the growth of the for-profit hospital sector. Such decisions influence short-term profitability and are often relatively stable and long-lasting. Hence, policymakers seeking to influence the composition of the hospital market should focus on the design of payment schemes, and particularly the details of capital funding and reimbursement. Intervening to reduce the capital costs for one ownership form relative to others may induce long-run changes in the composition of the hospital sector. Thus, our findings call for closer examination of how capital reimbursement schemes “steer” the business of health. Finally, the for-profit hospital sector is quite sticky – once it has grown, it tends not to shrink. This characteristic is particularly relevant in an era when many hospitals are under financial pressure. Privatising financially distressed public or non-profit hospitals is relatively “easy”, but reversing privatisation is often strenuous and costly.







# Chapter

# 3.

## **Market concentration in the independent treatment centre sector is a cause for concern**

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Marktconcentratie is ook punt van zorg bij zelfstandige behandelcentra.  
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## Abstract

**Introduction:** The Independent Treatment Centre (ITC) sector has grown significantly since 2007. While there is ample evidence of how the hospital market consolidated over the years, we know very little about whether the ITC sector followed the same trajectory.

**Method:** We analysed the degree of market concentration in the ITC sector by calculating its share of total revenue. We used the Gini coefficient and the C4-index to analyse the degree of market concentration in the ITC and hospital markets. In addition, in order to study the relationship between market share and price, we used publicly available negotiated prices of one large Dutch healthcare insurer.

**Findings:** This study finds that the ITC market has consolidated strongly over time. Market concentration is currently even greater in the ITC sector than in the hospital sector. In both the ITC and hospital sectors, the relationship between market concentration and prices is tenuous.

**Conclusion:** The ITC sector has been able to operate under the radar, but this study reveals that a few large ITC chains dominate the ITC sector. The notion that the ITC sector is a diverse sector with just a few sole-proprietorship ITC sites is outdated. Therefore, we need to investigate further how the ITC market behaves in order to safeguard the functioning of the outpatient market.

**Keywords:** Independent Treatment Centres, market concentration, healthcare prices

### 3.1. Introduction

The Dutch hospital market has consolidated strongly over time.<sup>294,295</sup> Concerns were raised with the Dutch Authority for Consumers & Markets (ACM) about this trend because it could hamper competition and threaten the functioning of the healthcare market. Hospital providers with a high level of market power could pressure healthcare purchasers to pay above market prices. The ACM began to study the effects of hospital mergers over the period 2007-2014. In its report, the ACM argued that these mergers have not resulted in better quality of care but did drive up prices.<sup>296</sup>

The debate about market concentration has focused on the hospital sector. Independent Treatment Centres (ITCs) [Zelfstandige behandelcentra: ZBCs] have largely been ignored in the analysis and the debate, perhaps because they only provide 3.8% of all diagnosis-related group (DRG) claims in the Netherlands.<sup>81</sup> Yet ITCs have acquired a more prominent role in the healthcare system, and they are still growing.<sup>81</sup> Although media have reported about acquisitions and mergers among ITCs,<sup>297</sup> we know very little about how the ITC market has developed over time.

#### Box 3.1. Background Dutch healthcare purchasing market

In 2006, the Dutch healthcare sector was reformed to establish a regulated competitive system.<sup>298</sup> In this new system, healthcare providers need to compete for contracts and healthcare insurers act on behalf of their clients as healthcare purchasers. Healthcare insurers can selectively contract healthcare providers and are able to negotiate prices for the majority of the DRGs.<sup>23</sup> The negotiated prices vary markedly between healthcare providers: the price for a DRG may be 200% higher than the average negotiated price.<sup>298</sup>

#### 3.1.1. Independent Treatment Centres

ITCs differ from hospitals because they are smaller. ITCs often focus on elective care that does not require an overnight stay.<sup>299</sup> ITCs also tend to focus on one or two specialisms, such as dermatology, ophthalmology or orthopaedics.<sup>74</sup> ITCs provided 18.4% and 18.2% of DRGs in ophthalmology and dermatology respectively in 2016.<sup>81</sup>

Since the mid-1980s, entrepreneurial healthcare providers entered the Dutch medical specialist care market.<sup>33</sup> They experienced significant resistance from politicians and the judicial system, among others.<sup>43</sup> During that time, the dominant view was that specialist healthcare services should only be provided in a hospital setting, and it was thought unacceptable to provide healthcare services with a commercial interest.<sup>33</sup> However, the embrace of New Public Management prompted perceptions of quasi-public services to change and the barriers for entrepreneurial healthcare providers were gradually lifted.<sup>300</sup> ITCs were formally recognised in 1998 as distinct medical entities,<sup>301</sup> and in the early 2000s the ITC market grew into a

highly diverse market, consisting of various small entrepreneurial medical care businesses.<sup>34</sup> In 2006, the legal distinction between hospitals and ITCs was removed with the introduction of the Health Care Institutions Admission Act [Wet Toelating Zorg instellingen: WTZi].<sup>302</sup> However, practical differences between hospitals and ITCs remain.

### **3.1.2. Submarkets and market concentration**

ITCs are active in the outpatient elective care market. Some scholars argue that outpatient treatments are less prone to market failure than other medical care services. The market conditions for outpatient treatments are favourable due to the large and growing demand for outpatient care,<sup>303,304</sup> and this ensures opportunities for different healthcare providers to establish themselves. In addition, the conditions to enter the market for outpatient treatments are favourable, with relatively low investment costs required in comparison with more complex procedures.<sup>305</sup> ITCs also play a vital role in correcting the imperfections of the hospital market: healthcare insurers can purchase outpatient care from ITCs to circumvent the market power of hospitals.<sup>304</sup> Furthermore, some scholars argue that there are fewer benefits from economies of scale in the ITC market, and therefore the outpatient market is less likely to consolidate.<sup>306</sup>

This chapter examines whether the aforementioned assumption holds. We analyse whether market concentration is also prominent within the ITC sector and whether higher market share leads to higher prices in the sector. We compare it with the hospital sector.

## **3.2. Method**

### **3.2.1. Data**

We used the annual financial reports of ITCs and hospitals in the Netherlands for the period of 2007-2015. These financial records have been collected in one large, publicly accessible database, the so-called DigiMV, which is coordinated by the Dutch government.<sup>307</sup> Healthcare providers that provide reimbursable care under the statutory benefit package are obliged to report their financial records. Furthermore, in order to analyse the relationship between market share and price we used the contracted prices (2016) from CZ, a large health insurer in the Netherlands. Prices are normally not available publicly from health insurers, but CZ has published them in an effort to enhance transparency. However, negotiated prices were only publicly available for treatments with prices under €885.

### **3.2.2. Definition**

Analysis is at the organisational level. (Where organisations have multiple treatment sites, they are analysed together as a single unit.) The financial annual dataset distinguishes ITCs and hospitals. We excluded those ITCs that declared that they

are part of a (university) hospital, nursing or home-care organisation, healthcare organisation for people with intellectual disabilities, mental healthcare institution, rehabilitation practice, or general practice. ITCs that belong to a hospital – and therefore do not have their own annual report – are excluded from our analysis. We analysed the annual revenue and total number of completed DRGs.

### 3.2.3. Data analysis

To analyse the degree of market concentration, we used the Gini coefficient and the C4-index. The Gini coefficient is a statistical measure often used to measure social inequality in income or wealth. The Gini coefficient calculates the difference between absolute equality and the Lorenz curve. The Lorenz curve represents the cumulative share of revenue in the submarket against the cumulative percentage of providers in the market. The Gini coefficient ranges from 0, whereat every provider has an equal revenue share, to 1 or absolute concentration of the market, whereat one provider receives all the revenue. We also calculated the C4-index, which is the market share of the four largest providers.

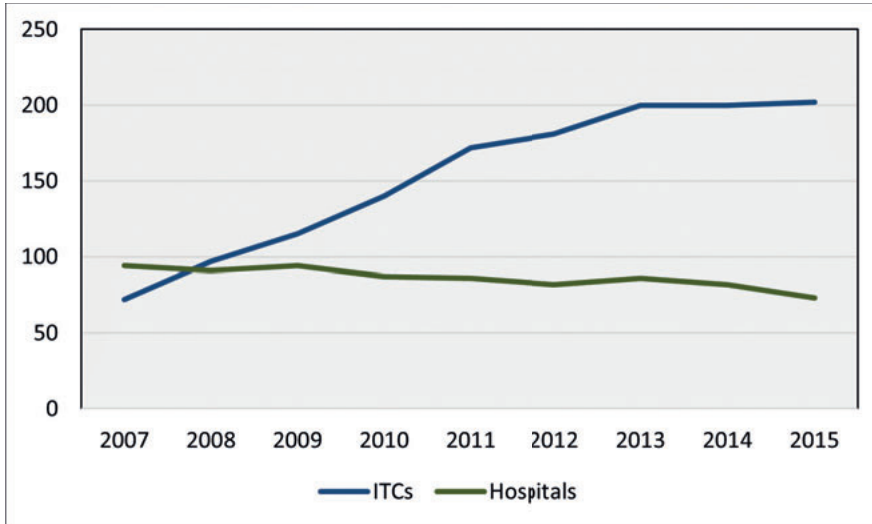
Negotiated prices from 2015 are standardised by DRG with Z-scores to control for the absolute differences between the DRG prices. The standardised prices are used as the dependent variable in a multi-level model with market share (percentage share of one healthcare provider over the total submarket) as the explanatory variable. We opted for a multi-level analysis to cluster the residuals per organisation. Such cluster-robust standard errors allow each cluster to have its own error variance, and within each cluster, the assumption of independence of errors is relaxed. This model therefore takes into account that the contracted prices are interconnected and nested for each healthcare provider. It also controls for possible overrepresentation of certain organisations in the data.

## 3.3. Results

### 3.3.1. Size of the market

In order to compare the market dynamic of the ITC market with that of hospitals, we first need to understand how both sectors have grown. Figure 3.1. shows that the ITC market has grown significantly from 72 ITCs in 2007 to 202 in 2015. Most of the growth in the market took place before 2013.

Total revenue and the number of DRG claims in the ITC sector have increased between 2007 and 2015. In 2007, total revenue was €128 million and the total number of DRG claims was 200,000. By 2015, total revenue had climbed to €695 million and DRG claims increased to more than 1 million. The ITC market is, however, still relatively small compared to the general hospital market for which total revenue in 2016 was €17 billion.<sup>308</sup>

**Figure 3.1.** Increase in the number ITCs and stagnation in the number of hospitals

Source: Based on the DigiMV dataset

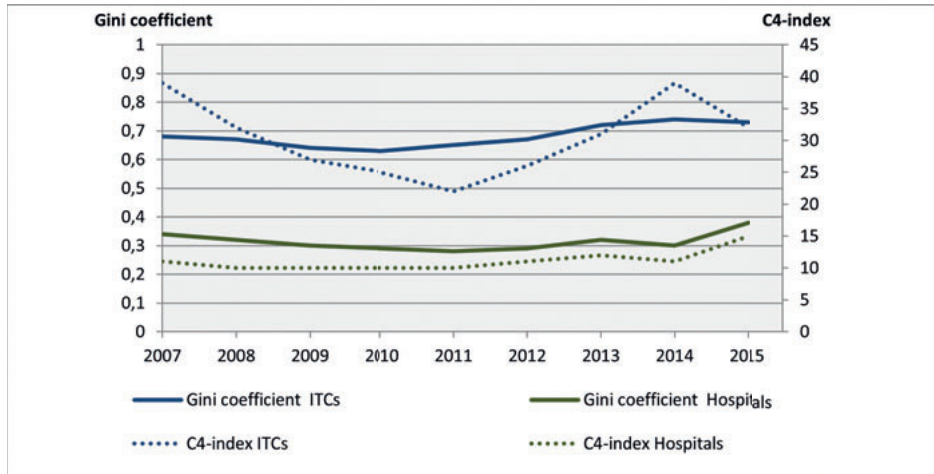
From 2007 to 2010, annual revenue growth in the ITC sector was between 20-40%, but thereafter growth slowed. In 2011 and 2012, average annual revenue growth was 7%. In 2013, growth turned negative (-6%). In 2014, positive growth returned, with average annual revenue up by 2% that year, and up by a further 20% in 2015. The median initially grew simultaneously with the average, but this also decreased between 2012 and 2013. This suggests that more than half the ITCs faced falling revenues in that period.

### 3.3.2. Structure of the market

The ITC market is relatively concentrated (Figure 3.2.). The Gini coefficient of the ITC market fluctuates around 0.7, whereas the coefficient for the hospital market is relatively stable at around 0.3. Between 2007 and 2010, the Gini coefficient decreased in the ITC market. The growing number of ITCs between 2007 and 2010 may explain this decline. The Gini coefficient increased from 0.6 in 2010 to 0.7 in 2015. In other words, the top 25% of ITCs by revenue account for approximately 80% of the total revenue in the market. Most ITCs in the market are therefore relatively small. By comparison, in the hospital market, the top 25% of healthcare providers by revenue account for approximately 50% of total revenue in the market.

The C4-index shows that the four ITCs with the highest revenue in the sector (very likely to be ITC chains) accounted for 32% of the total ITC revenue in 2015 (Figure 3.2.). By contrast, the four largest hospitals accounted for 15% of the total revenue in the hospital sector in 2015. Between 2007 and 2015, the C4-index fluctuated wildly either side of 30% in the ITC sector. The C4-index remained however more constant around 11% in the hospital sector.

**Figure 3.2.** Market concentration of medical specialist care, measured in Gini coefficient and the C4-index (in percentages)



Source: Author's own calculations based on the DigiMV dataset

### 3.3.3. Impact on price

We find that the relationship between market share and price in the ITC sector is largely non-existent or weak (Table 3.1). For ITCs, we only find a positive association for ophthalmology, which means that ITCs with a higher market share in the ITC sector were able to negotiate higher prices for ophthalmological treatments. The model predicts that an increase of one percent point in the market share of an ITC leads to an increase of 0.15 percentage point in the standardised ophthalmological prices. We only find this association for orthopaedic procedures in the hospital market; however, this relationship is weaker, with a difference of just 0.095 percentage points.

**Table 3.1.** Relationship between market concentration and contracted prices in 2015

	Independent Treatment Centres				Hospitals			
	Total	Ophthalmology	Orthopaedics	Plastic surgery	Total	Ophthalmology	Orthopaedics	Plastic surgery
Share in submarket revenue (%)	0.018	0.151*	-0.012	-0.003	0.020	0.028	0.095*	0.037
Number of observations	5,871	1,254	369	126	72,667	4,371	4,491	682
Number of providers	105	47	31	19	56	54	54	54

\*  $p < 0.10$

Source: Based on the DigiMV dataset and the healthcare insurer, CZ, price dataset

### 3.4. Discussion

This study challenges the argument that the market for outpatient treatments is less vulnerable to market concentration. Initially, the ITC sector consisted of various small-scale providers,<sup>34</sup> but it is now dominated by a few large ITC chains.

International studies on this subject are rare – most studies focus on hospitals.<sup>292,309</sup> One study from the United States found that ITCs that provide arthroscopies and colonoscopies have a relatively high “internal” Hirschman-Herfindahl index of 0.52 and 0.49 respectively.<sup>310</sup> (As a rule of thumb, 0.5 suggests that the market is concentrated and less competitive.)

Our findings differ from other studies that analyse market concentration and healthcare prices because we did not find a clear association between market share and healthcare prices in the hospital sector.<sup>296,311-313</sup> This finding deviates from the conclusions in the report of the ACM. This report concluded that market concentration leads to higher prices.<sup>296</sup> One possible explanation for this difference is that the research design of the ACM report differs markedly from ours: the ACM report analysed instead the longitudinal effects of hospital mergers.<sup>296</sup> Other Dutch studies that analyse the hospital sector have found that the impact of higher market concentration is not clear-cut and depends on various factors (e.g. type of treatment).<sup>309,314</sup> Studies that originate from the United States are more conclusive and find that higher market power drives up healthcare prices.<sup>311-313</sup> Our findings may differ from studies that focus on the hospital market because ITC chains own multiple locations that are located in different regions, and this reduces their market power. By contrast, hospitals chains often have two or three sites and are strongly concentrated within a region.

Although we have not specifically analysed this, the medical care sector has committed to a limit on real terms annual price increases (excluding growth in salaries), known as the “hoofdlijnenakkoord(en)”. During this period, revenue growth in the ITC sector slowed. This cost ceiling may have had a negative impact on the financial position of the ITC sector.

#### 3.4.1. Strengths and limitations

This study is the first to quantify market concentration in the ITC sector. Our findings contribute to our understanding of how the share of revenue is divided in the ITC sector. However, this study has its limitations. Firstly, our market share calculation is a rather blunt measure. Future research should focus on measures that take regional power and share of specific healthcare products into account. Secondly, this study separates the ITC market from the hospital market even though they provide similar treatments. Although the ITC market for outpatient care is relatively concentrated, the combined hospital and ITC market for outpatient care may be less concentrated, with market share more evenly spread among providers of both kinds. And, as a



result, those large ITCs would have less negotiating power with respect to healthcare purchasers than otherwise anticipated.

### **3.4.2. Policy implications**

A few big ITC chains dominate the sector. This requires more attention from market authorities and healthcare purchasers. Yet, the consolidation of the ITC sector may be the result of healthcare insurers preferring large ITCs over smaller ones. Even though we did not find a strong relationship between market share and negotiated prices, the unequal distribution of total ITC revenue among ITCs could have negative consequences for the price and quality of care in the long run, especially if the market become more consolidated. Other scholars have pointed out that the ITC sector keeps the functioning of the hospital market healthy;<sup>304</sup> we must therefore ensure that the ITC market functions well.

On a positive note, the relatively high market concentration of the ITC market may signal that the ITC sector has matured and advanced. Chain affiliation can offer economic, personnel, management, and organisational benefits.<sup>315</sup> In addition, a highly concentrated ITC market may not pose such a big threat to healthcare purchasers because ITC chains have less regional power where ITC sites are much smaller and located in different regions.

To conclude, the ITC sector has been able to operate under the radar for a long time. Even though this study finds that the risks that market concentration may bring are weak, we do want to challenge the notion that the ITC sector is marginal, with just a few small ITC sites. Although they may be relatively small, we need a sound understanding of the dynamics of niche markets such as the ITC sector.

## **3.5. Conclusion**

This study contributes to our understanding of the ITC sector in two ways. Firstly, we find that market share in the ITC sector is strongly concentrated among a small number of providers – more so than in the hospital market. The four largest ITC chains accounted for 32% of the total ITC revenue in 2015. Secondly, even though the market concentration is relatively strong in the ITC sector, the impact this has on price is limited. We only found a weak relationship between market share and price for ophthalmological treatments in the ITC sector.



# Chapter

# 4.

## **Is there a volume-quality relationship within the independent treatment centre sector? A longitudinal analysis**

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## Abstract

The number of independent treatment centres (ITCs) has grown substantially. However, little is known as to whether the volume-quality relationship exists within this sector and whether other possible organisational factors mediate this relationship. The aim of this study is to gain a better understanding of such possible relationships.

Data originate from the Dutch Health and Youth Care Inspectorate (IGJ) and the Dutch Patients Association. We used longitudinal data from 4 years (2014–2017) including three different quality measures: 1) composite of structural and process indicators, 2) postoperative infections, and 3) patient satisfaction. We measured volume by the number of invasive treatments. We adjusted for three important organisational characteristics: (1) size of workforce, (2) chain membership, and (3) ownership status. For statistical inference, random effects analysis was used. We also ran several robustness checks for the volume-quality relationship, including a fractional logit model.

ITCs with higher volumes scored better on structure, process and outcome (i.e. postoperative infections) indicators compared to the low-volume ITCs – although only marginally on outcome. However, ITCs with higher volumes do not have higher patient satisfaction. There is a decreasing marginal effect of volume – in other words, an L-shaped curve. The effect of the intermediating structural factors on the volume-quality relationship (i.e. workforce size, chain membership and ownership status) is less clear. Our findings suggest that chain membership has a negative influence on patient satisfaction. Furthermore, for-profit providers scored better on the Net Promoter Score.

Our study shows with some certainty that the quality of care in low-volume ITCs is lower than in high-volume ITCs as measured by structural, process and outcome (i.e. postoperative infection) indicators. However, the size of the effect of volume on postoperative infections is small, and at higher volumes the marginal benefits (in terms of lower postoperative infections) decrease. In addition, volume is not related to patient satisfaction. Furthermore, the association between the structural intermediating factors and quality are tenuous.

**Keywords:** Independent treatment centres, volume, quality of care, outpatient procedure

## 4.1. Background

Independent treatment centres (ITCs) are enjoying a growing market share in low-risk invasive ambulatory treatments such as cataract surgery and carpal tunnel syndrome.<sup>78,97,316</sup> The growth in ITC market share has been made possible by advances in technology, which have enabled more invasive treatments to be relocated from inpatient hospital care to ambulatory care settings.<sup>317</sup> In the United States (US), between 2000 and 2010, the number of Medicare-certified independent ambulatory surgery centres (referred to as ASCs in the US) increased on average by 5.4% per year.<sup>78</sup> In the United Kingdom (UK), the National Health Service (NHS) has increased the number of commissioned ITCs to improve accessibility and reduce waiting lists.<sup>316</sup> The Netherlands experienced a growth in the number of ITCs (in terms of the number of locations at which care is provided, or “ITC locations”), of 87% between 2009 and 2016.<sup>80</sup> Although ITCs still have a small share of 3.8% of total reimbursable care in the Netherlands in 2016, for some procedures their share is considerably higher; for example, ITCs now provide 18.4% of the total ophthalmological procedures and 18.2% of the dermatological treatments.<sup>81</sup>

The increasing importance of ITCs as providers of healthcare demands an understanding of the organisational factors that contribute to safe and effective care provision; however, there has been a paucity of research on this topic. Instead, most research on the ITC sector is concerned with comparing ITCs with general hospitals, and these studies often have equivocal results.<sup>114,318-320</sup> The volume-quality relationship is of particular interest in the ITC sector because organisational scale is one of the key factors in understanding efficiency.

### 4.1.1. Dutch ITC market

The Dutch ITC market has some distinctive characteristics. It consists of non-profit centres providing reimbursable care from the statutory benefit package as well as for-profit centres offering non-reimbursable care. In the Netherlands, providers offering reimbursable medical specialist care (e.g. carpal tunnel syndrome and phlebology) from the statutory benefit package are formally prohibited from allocating any possible profits as a compensation for equity capital. Hence, stand-alone for-profit centres are clinics providing non-reimbursable care (e.g. refraction surgery and aesthetic surgery without GP referral). Many ITCs offer reimbursable and non-reimbursable care, but since they fall under the regulatory framework of reimbursable care they are strictly speaking non-profit institutions. The umbrella term “ITCs” used throughout this paper refers to both non-profit and for-profit centres. Furthermore, the Dutch ITC market consists of ITC locations that are affiliated to healthcare chains as well as ITC locations that are sole proprietorship ITCs. The Dutch ITC market is strongly concentrated: four of the largest chains account for 32% of the total revenue.<sup>321</sup> Physicians working in ITCs can be working solely for an ITC but can also be partly employed by a hospital. When general

physicians are working for both an ITC and a hospital, these physicians are generally on the payroll of both providers.

#### **4.1.2. Volume-quality relationship**

The volume-quality relationship differs by procedure, according to the level of risk associated with it and the frequency with which hospitals undertake it (i.e. volume). Luft et al. (1979) were the first to publish on the volume-quality relationship and identified the importance of the type of procedure to the relationship.<sup>322</sup> Subsequently, the volume-quality relationship for high-risk, inpatient procedures has been well studied. (Although, the majority of the studies neglect the intermediating factors.<sup>323</sup>) It has been found that lower volumes are associated with worse outcomes – often measured in postoperative mortality.<sup>324-326</sup>

However, the contemporary debate regarding the volume-quality relationship focuses primarily on these high-risk, low-volume, inpatient procedures,<sup>327</sup> and both low-risk, high-volume procedures and outpatient procedures have received much less attention in recent years. Some studies have examined the volume-quality relationship in low-risk, high-volume procedures but these have focused mainly on total knee and hip arthroplasty, and hernia repair surgery.<sup>325,326,328-332</sup> Moreover, almost all studies of the volume-quality relationship analyse inpatient hospital data and do not take into account care performed in outpatient settings.<sup>325-327</sup> Two papers by Chukmaitov et al. (2008; 2011) are rare exceptions,<sup>310,333</sup> but their contribution to the evidence on the volume-quality relationship for low-risk outpatient treatments is limited because their data originates from Florida alone and is relatively outdated at the time of writing (i.e. 1997 and 2004).<sup>310,333</sup>

The volume-quality relationship can move into two directions: 1) volume drives quality, and/or 2) quality drives volume.<sup>334,335</sup> The first direction, wherein volume drives quality, is based on the hypothesis that “practice makes perfect”. This hypothesis reasons that quality is improved by harvesting experience – a learning effect which is comprised of both individual learning (i.e. experience of the surgeons) and organisational learning (i.e. skills and experience of the team and care locations).<sup>336</sup> The volume-quality relationship can also be more static, meaning that high-volume providers will provide better outcomes irrespective of the experience of the provider.<sup>337</sup> The alternative direction of this relationship, wherein quality drives volume, is based on the hypothesis that providers that demonstrate a good quality of care will attract more patients. It is important to note that the volume-quality relationship could be characterised by either a linear or a non-linear trend.<sup>338,339</sup>

The theoretical framework and the empirical literature are largely focused on low-volume and high-risk treatments. (High-risk in this context does not necessarily entail a high-risk of mortality or of other severe outcomes, but it denotes negative outcomes that occur relatively frequently.) We cannot expect that this theory can be applied directly to the ITC sector because the nature of the treatments is so fundamentally different. (The procedures are low-risk so the frequency of negative

outcomes is lower than in high-risk procedures.). Hence this research adopts the null-hypothesis that there is no association between volume and quality outcomes.

#### **4.1.3. Mediating factors**

To identify factors that might mediate the volume-quality association, we formulated three secondary hypotheses. The first hypothesis states that a larger workforce results in higher quality. This reflects organisational learning whereby a bigger team is associated with more internal learning, support and control, and that this then increases the quality of care. One earlier study highlighted the importance of capacity and staffing as a mediating factor in the volume-quality relationship.<sup>340</sup>

The second hypothesis holds that chain membership leads to better quality of care. Chain-affiliated ITCs could in theory provide better quality of care, since these ITCs may enjoy the benefits of greater access to resources. The availability of complementary medical and technical support services could possibly foster broader organisational knowledge.<sup>341,342</sup>

The third hypothesis postulates that non-profit ITCs provide better quality of care than for-profit ITCs. Three possible explanations for this hypothesis are as follows. One theory holds that non-profit organisations will outperform for-profit entities when there is asymmetry of information in favour of the provider because, according to this theory, for-profit organisations would be more inclined to game the system as a result of this asymmetry.<sup>62</sup> A second theory postulates that non-profit organisations specifically strive to maximise quality, whereas for-profit ITCs aim to maximise profit for their investors.<sup>108,110</sup> Furthermore, in the Netherlands, health insurers have the legal discretion to selectively contract healthcare providers.<sup>343</sup> Non-profit providers may be more incentivised to constantly improve their care because they have to compete in terms of price and quality to obtain these contracts while for-profit providers do not. However, other theories instead predict that for-profit entities outperform non-profit providers on measurable quality outputs because for-profit providers are more likely to focus on these transparent quality outputs and theoretically will outperform on them.<sup>110</sup> It is important to note that these theories originate from the hospital sector and we do not know in how far they hold for the ITC sector.

In summary, this study aims to explore the question of whether volume is associated with quality in the ITC sector and, in addition, identify possible mediating structural factors (i.e. workforce size, chain membership and ownership status).

## **4.2. Methods**

### **4.2.1. Data**

Our data originated from the Dutch Health and Youth Care Inspectorate (IGJ). IGJ uses a framework of risk indicators for the supervision of ITCs.<sup>344</sup> Since 2008, IGJ has been collecting annual information by means of a mandatory quality assessment



questionnaire, completed by the ITC locations themselves (Appendix 4.A.). We constructed a dataset ranging from the years 2014 to 2017. IGJ inspectors were involved in deciding which indicators were most suitable for this study. The inclusion criteria for ITCs were that they should provide invasive treatments and offer at least one of the following specialties: ophthalmology, dermatology, orthopaedics or aesthetic surgery. The dataset included 338 ITCs and 206 of these had at least three years of observations.

Patient satisfaction data was obtained from the Dutch Patients Association (Patientenfederatie), which collects information through a patient rating website (ZorgkaartNederland.nl). This platform is a well-known website, with around 700,000 ratings where patients, if they wish, can leave their feedback. The scores are on a 0 to 10 scale and are based on the ratings per ITC location regarding treatment, information provision, listening competency, handling by staff, accommodation, and experience in scheduling an appointment. Patient ratings between 2014 and 2017 were included. Of those ITCs included in the IGJ dataset, 166 ITCs had patient ratings. We followed the methodology of Kool et al.<sup>345</sup> to further restrict these scores to providers with 30 or more patient ratings, leaving 80 ITCs with a total of 19,294 ratings.

A description of how the data was merged between the patient ratings and the IGJ data can be found in Appendix 4.B.

#### **4.2.2. Variables**

Volume was measured by the number of invasive treatments. We also constructed a percentile-based categorisation of the annual number of invasive treatments in order to gain a better understanding of how low-volume ITCs (up to  $\pm 300$ ), lower-medium-volume ITCs (up to  $\pm 890$ ), higher-medium-volume ITCs (up to  $\pm 2130$ ) and high-volume ITCs perform relative to each other. (We follow the advice of Luft et al. (1990) to compare various indicators of volume.<sup>346</sup>) Workforce size is indicated by the full-time equivalent (FTE) of physicians and nurses. Dichotomous variables were made for chain affiliation (i.e. single location versus multiple locations) and for ownership status (i.e. non-profit versus for-profit).

We used three alternative measures for different dimensions of quality: (i) a composite of structural and process indicators; (ii) postoperative infections; (iii) patient ratings. The structural and process indicators were based upon the Donabedian model<sup>347</sup> and are dichotomous variables with values representing “1” as good performance and “0” as poor performance. We constructed a composite of structural and process indicators based upon the annual sum of the Z-scores of the seven categorical structural and process quality indicators (Table 4.1.). Z-scores were used to assign weights to the different quality measures. The data from 2017 did not have the seven categorical quality indicators, hence no observations for that year could be used for the composite measure score.



**Table 4.1.** The seven structural and process quality indicators

Whether an independent treatment centre...
is reachable 24/7
has a system whereby the performance of their personnel is reviewed
has an arrangement in place for dysfunctional personnel
uses a questionnaire that inquires patient reported experiences or outcomes
classified the American Society of Anesthesiologists (ASA) physical status (i.e. severity) of their patients
screened for delirium
has a collaboration with (a) hospital(s)

Medical quality was assessed by the rate of postoperative infections: the lower the rate the better the medical quality. This measure has been used for this purpose in other studies.<sup>348-350</sup> With the patient satisfaction data, five indicators were created: (1) promoter (average score of 9 or higher); (2) detractor (average score of 6 or lower); (3) Net Promoter Score (NPS) (i.e. the percentage of promoters minus the percentage of detractors per provider);<sup>351</sup> (4) average score above 7; and (5) average score above 8. The last two measures are not based on the NPS classification but are defined to identify other possible cut-off points. Patient ratings are not normally distributed because patients who are satisfied or dissatisfied generally rate their providers more frequently than people with neutral opinions; the indicators above address this complication.

To adjust for possible confounders, four types of control variables were included in the models. Firstly, ASA physical status classification<sup>352</sup> II and ASA III were used to adjust for case-mix differences since this could possibly affect quality. Secondly, we adjusted for the different medical specialities since the different specialities have different quality risks. Lastly, the models account for year-dependent effects.

One of the assumptions is that locations within the same chain behave similarly. To account for chain clustering, we created unique chain identifiers.

### 4.2.3. Data analysis

#### *Descriptive statistics*

Because this study uses panel data, the overall mean, the within-provider variances and between-providers variances were calculated. The differences between the overall and between variances is that the between variances use the mean of the panel data while the overall mean calculates the weighted mean of the panel data, whereby the weights are given by the number of observations in the panel data.

#### *Linearity of the volume-quality relationship*

For the volume-quality relationship in ITCs, linearity of the curve is tested by re-expressing the number of invasive treatments. The number of invasive treatments is

right-skewed and therefore transformed down the ladder of powers – to a squared root (SQRT), a cube root (U-shaped curve) and logarithmic function (L-shaped curve).<sup>353</sup> The fit of the re-expressed values is based on the Akaike information criterion (AIC).<sup>354</sup> The lower the AIC score, the better the model resembles the data. To further explore this assumption, we will also report the augmented component plus residual plots according to the method proposed by Mallows<sup>355</sup> (consult Appendix 4.B. for a longer description).

#### *Explanatory regressions*

We used a Random Effects (RE) model which clusters the observations within the unique provider and/or chain identifiers. (The Hausman's test preferred the RE model over the Fixed Effects estimates.<sup>356</sup>) The continuous dependent variables (i.e. composite structural and process indicators, postoperative infections and NPS) are estimated with a linear RE model. For postoperative infections, the linear RE models only included those providers that had above 0 postoperative infections and with at least 50 invasive treatments to prevent outliers. For the binary dependent variables (i.e. promoter, detractor, average score above 7, average score above 8) a RE logistic model was used. In addition, we performed an analysis pooling all postoperative infections and invasive treatments over the 3 years to overcome the exclusion of the smaller providers with less than 50 invasive treatments and possibly include ITCs that had 0 postoperative infections in one year, but during the course of 3 years, are more likely to have above 0 postoperative infections. Providers with observations for only one or two years were excluded from this analysis. When providers had 4 years of observations, we took the average of the 4 years to subtract one average year from the total 4 years of observations to get 3 years of pooled observations.

The correlation between workforce size and volume can substantially distort the analysis therefore all the models were tested for multicollinearity with the variance inflation factor (VIF). We find that none of the VIF values were greater than 10 which, as a rule of thumb, suggests the models are not affected by multicollinearity (Appendix 4.C.).<sup>357</sup>

For all the RE models, we tested whether observations were clustered within ITC locations and chain membership using the likelihood-ratio test. For models using longitudinal data, the test identified clustering within ITC locations. For the pooled 3-year data and the patient ratings models, the test identified clustering within chains.

#### *Robustness checks*

We performed a fractional logit model for postoperative infections in order to include the zeros and accommodate the proportional distribution, which the RE model is unable to do. The exclusion of the zeros could potentially penalise low-volume ITCs since they are more likely to have zero postoperative infections. The postoperative infections are included in the fractional logit model as values between 0 and 1. The

fractional logit regression model can account for intragroup correlations in the panel dataset, however it is less capable than the RE model of accommodating complexities such as the unbalanced panel structure.

A second robustness check addresses the problem that within the dataset it is not possible to directly link specific treatments with specific postoperative infections because when ITCs have multiple specialties (43% of providers) total volume is assessed. To correct for this, the models with postoperative infections were also specifically run including only aesthetic surgery and postoperative infections after aesthetic surgery.

Furthermore, as a low number of invasive treatments can potentially skew the percentage of postoperative infections, an additional robustness check was performed whereby the cut-off point was set at 100 invasive treatments instead of 50. In addition, we ran the results without including the case-mix factors since many ITCs had missing values for the case-mix factors, which means the models lost a high number of providers by including case-mix as a control.

## 4.3. Results

### 4.3.1. Descriptive statistics

#### *ITC characteristics*

The number of invasive treatments shows substantial variation between ITCs with, on average, 1572 invasive treatments per ITC but a high standard deviation of 1882 (Table 4.2.). With a median of 886 invasive treatments (not shown in the Table 4.2.), this data is right-skewed. The average FTE of physicians is 2.3 physicians, with a standard deviation of 2.5 which is relatively high. Compared to the FTE of physicians, the average FTE of nurses is lower, at 1.5 nurses, with a standard deviation of 3.6, which, as for physicians, is high. Most providers are non-profit centres: 32% of the locations are for-profit. Appendix 4.D. summarises the differences between non-profit ITCs and for-profit ITCs with respect to volume and chain-affiliation. In brief, the non-profit ITCs are bigger than the for-profit ITCs: non-profit ITCs completed a higher number of invasive treatments. Non-profit ITCs are also more often chain-affiliated, and non-profit chains have more ITC locations than the for-profit chains. In addition, sole-proprietorship ITCs perform a lower number of invasive treatments than the chain-affiliated ITCs, and this is the case for both for-profit ITCs and non-profit ITCs.

#### *(Composite) structural and process indicator(s)*

Most of the ITCs – around 70% to 80% – comply with four of the individual structural and process quality indicators, indicating that most centres perform well on these measures (Table 4.2.). Three indicators present much lower scores of around 30 to 60%. Firstly, 36% of ITCs have no collaboration agreement with any hospital in case of emergency. Secondly, 52% of the ITCs did not use an ASA classification. And, thirdly,

66% did not screen for delirium. All of these are obligatory for ITCs conducting invasive treatments. The within standard deviation of the structural and process indicators illustrates that these indicators change over the years within ITCs. This is partly due to the fact that the weights per year could deviate. The mean of the structural and process composite is almost zero, which is as expected since the composite is based upon Z-scores. The standard deviation is 3.7, which is relatively high and demonstrates that there is substantial variance between ITCs. In order to get a sense of the scale of this composite, it ranges from -13.1 to 5.8. (We would like to stress that this variation of Z-scores is based upon the sum of Z-scores of the seven structural and process indicators. The individual Z-scores show much less variation.)

#### *Outcome indicators and patient satisfaction*

The percentage of postoperative infections is low with approximately 3 in 1000 invasive treatments resulting in postoperative infections (Table 4.2.). For those providers with at least one patient with a postoperative infection and which performed 50 or more invasive treatments, the rate was slightly higher, at 5 in 1000 invasive treatments resulting in a postoperative infection. For the outcomes related to the patient satisfaction ratings, the mean score is 8.7 with an overall standard deviation of 1.2. The mean rate of promoters lies around 52% per provider, while the mean rate of detractors accounts for 3%. The score of 7 or higher was given by 95% of the patients, and 84% score 8 or higher. The NPS accounts for 55%.

#### *Control variables*

There is some diversity in which specialties are offered by ITCs (Table 4.2.). Most of the ITCs offer aesthetic surgery (59%), whereas there are fewer orthopaedic ITCs (11%). The summary statistics further show that on average 13% of the ITC patients have mild systemic diseases, ASA II, and only 1% are patients with severe systemic diseases, ASA III.

**Table 4.2.** Summary statistics 2014-2017

	Overall mean $\pm$ SD	Between SD	Within SD	N (n)
<b>Characteristics ITCs</b>				
Number of invasive treatments	1571.85 $\pm$ 1881.56	1693.96	819.81	941 (338)
FTE physicians	2.32 $\pm$ 2.45	2.35	1.04	941 (338)
FTE nurses	1.49 $\pm$ 3.55	3.34	1.14	941 (338)
Number of locations	2.61 $\pm$ 3.11	2.73	0.82	941 (338)
Chain membership	0.40 $\pm$ 0.49	0.47	0.16	941 (338)
Non-profit providers	0.68 $\pm$ 0.47	0.47	0.00	941 (338)
<b>Composite Quality indicators</b>				
Reachable 24/7	0.67 $\pm$ 0.47	0.31	0.40	716 (313)
Personnel functioning system	0.78 $\pm$ 0.41	0.38	0.21	716 (313)

**Table 4.2.** Continued.

	Overall mean $\pm$ SD	Between SD	Within SD	N (n)
Personnel malfunctioning system	0.78 $\pm$ 0.41	0.36	0.22	716 (313)
Patient satisfactory questionnaire	0.88 $\pm$ 0.33	0.32	0.16	716 (313)
ASA classification known	0.48 $\pm$ 0.50	0.46	0.21	716 (313)
Screening delirium	0.34 $\pm$ 0.48	0.42	0.23	716 (313)
Collaboration with (a) hospital(s)	0.64 $\pm$ 0.48	0.45	0.20	716 (313)
Structural and process composite	-0.00 $\pm$ 3.31	3.19	1.48	716 (313)
<b>Quality outcomes</b>				
Percentage infections	0.28 $\pm$ 1.14	0.96	0.79	877 (318)
Percentage infections (>0 postoperative infections & $\geq$ 50 invasive treatments)	0.47 $\pm$ 0.62	0.65	0.29	412 (189)
Average patient satisfaction score	8.74 $\pm$ 1.17	0.40	1.12	19338 (80)
Ratio promoters over total number of observations per provider	0.52 $\pm$ 0.50	0.17	0.47	19338 (80)
Ratio detractors over total number of observations per provider	0.03 $\pm$ 0.17	0.04	0.17	19338 (80)
Ratio 7 or more over total number of observations per provider	0.95 $\pm$ 0.22	0.04	0.21	19338 (80)
Ratio 8 or more over total number of observations per provider	0.84 $\pm$ 0.36	0.09	0.35	19338 (80)
Net Promoter Score (in ratio)	0.55 $\pm$ 0.19	0.19	0.06	118 (55)
<b>Control variables</b>				
Specialism ophthalmology	0.23 $\pm$ 0.42	0.39	0.07	941 (338)
Specialism dermatology	0.37 $\pm$ 0.48	0.47	0.13	941 (338)
Specialism orthopaedics	0.11 $\pm$ 0.31	0.31	0.05	941 (338)
Specialism aesthetic surgery	0.59 $\pm$ 0.49	0.47	0.18	941 (338)
Ratio ASA II over total number of patients	0.13 $\pm$ 0.16	0.14	0.08	622 (241)
Ratio ASA III over total number of patients	0.01 $\pm$ 0.06	0.04	0.04	623 (242)
<b>Robustness check</b>				
Number of aesthetic invasive treatments	502.40 $\pm$ 1269.82	972.17	844.36	488 (211)
Percentage infections after aesthetic surgery	0.90 $\pm$ 6.81	7.76	4.16	449 (182)

### 4.3.2. Explanatory statistics

#### *Linearity*

The AIC scores of the different models are exhibited in Table 4.3. The relationship is non-linear for all the quality indicators; the AIC rates the logarithmic curve as the best fit for all the quality indicators.

**Table 4.3.** AIC scores

	Linear	SQRT	Cubic	Logarithmic
Structural and process composite	2152	2147	2144	2138
Postoperative infections	377.4	352.0	339.9	311.7
Pooled data - postoperative infections	40.90	39.10	38.60	38.30
Aesthetic postoperative infections	408.6	403.7	400.5	393.5
Patients ratings – mean score	59435	59433	59432	59430
NPS	-128.1	-128.2	-128.3	-128.5

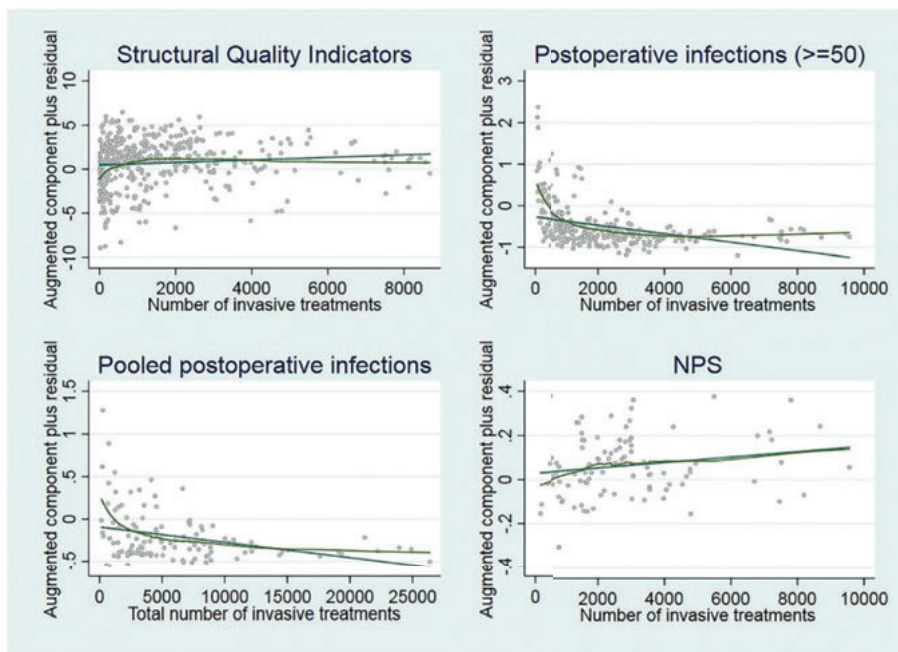
To visualise this relationship, Figure 4.1. shows the augmented partial residuals on the y-axis and on the x-axis the total number of invasive treatments. The grey line depicts the linear trend and the green line fits to the potential non-linear curve. Unlike the AIC scores, both lines in Figure 4.1. show that there is no clear non-linear trend regarding the association between volume and the structural and process indicators. Likewise, the visualisation does not present a non-linear curve for the relationship between the NPS and volume. In contrast, the observations with postoperative infections delineate a distinctive negative logarithmic function, similar to the trend found within the pooled 3-year data. For postoperative infections, the inflection point seems to occur at roughly 2000 invasive treatments; thereafter the impact of size seems to diminish.

#### *Volume-quality relationship*

The logarithmic curve shows a positive relationship between the composite of the structural and process indicators and volume (Table 4.4., model I). For ITCs with postoperative infections and with 50 or more invasive treatments, the percentage of postoperative infections declines with the number of invasive treatments (Table 4.4., model II). In other words, a 10% increase in the number of invasive treatments is associated with a reduction in the annual number of postoperative infections by 0.03 percentage points ( $-0.339 \cdot \log(1.10)$ ). When the 3 years of observations are pooled together, the relationship persists but the effect size weakens to a 0.009 percentage point reduction in postoperative infections ( $-0.094 \cdot \log(1.10)$ ) (Table 4.4., model III). This may indicate that higher denominators and/or the exclusion of providers in the annual models (< 50 invasive treatments or zero postoperative infections) reduce the effect size. Table 4.4., Model IV, suggests that low-volume ITCs have a higher chance of postoperative infections than high-volume ITCs. Patient satisfaction has

a weak association with the number of invasive treatments. The mean patient rating declines with a higher number of invasive treatments (Table 4.5.). In addition, the chance of having promoters and ratings above 8 declines with volume. All three are only statistically significant on a 90% confidence level. In contrast, the NPS, ratings above 7 and the number of detractors do not display a relationship with the number of invasive treatments.

**Figure 4.1.** Visualisation non-linear volume-quality relationship



#### *Mediating structural factors*

The FTE of physicians and nurses seems to be unrelated to the structural and process quality indicators (Table 4.4., model I). There is no evidence of a relationship between the FTE professionals and the rate of postoperative infections in either the annual or the pooled data (Table 4.4., model II & III). Finally, patient satisfaction is also not significantly related to the FTE of physicians and nurses (Table 4.5.).

Structural and process quality indicators suggest that chain membership has no effect on performance (Table 4.4., Model I). The positive relationship between chain membership and postoperative infections indicates that there are, on average, higher rates of postoperative infections in chain-affiliated ITCs (Table 4.4., model II). However, the confidence interval is only 90% and the relationship dissolves when the data is pooled (Table 4.4., model III). Patient satisfaction data illustrate a negative and consistent relationship with chain membership, but only on a 90% confidence interval (Table 4.5.). The only patient satisfaction indicator which shows

chain membership having no effect is the number of patients given ratings of 9 or above (i.e. promoters).

No association was found between ownership and the structural and process indicators (Table 4.4., model I). For the annual data analysis, non-profit providers do not seem to have a significantly higher or lower percentage of postoperative infections than for-profit providers (Table 4.4., model II). However, when the data is pooled, the non-profit providers are associated with higher percentages of postoperative infections (Table 4.4., model III). It is likely therefore that the relationship between ownership and postoperative infections can only be detected with the inclusion of higher denominators or the possible inclusion of centres that could not be included in the annual data analysis (i.e. those with <50 invasive treatment and zero postoperative infections). Regarding the patient ratings, only the NPS is significantly lower for non-profit providers compared to for-profit providers (Table 4.5).



**Table 4.4.** Relationship between the composite structural and process quality indicators or postoperative infections and ITC characteristics

	Model I	Model II	Model III	Model IV
Type of outcome variable	<b>Composite structural and process quality indicator</b>	<b>Percentage postoperative infections</b>	<b>Percentage postoperative infections</b>	<b>Percentage postoperative infections</b>
Type of model used	<b>RE-Linear</b>	<b>RE-Linear</b>	<b>RE-Linear</b>	<b>RE-Linear</b>
Type of data used	<b>Annual data</b>	<b>Annual data</b>	<b>Total over 3 years</b>	<b>Annual data</b>
Log invasive treatments	0.418*** (0.089)	-0.339*** (0.033)	-0.094*** (0.031)	
Highest quantile invasive treatments				Reference
Higher medium quantile invasive treatments				0.029 (0.096)
Lower medium quantile invasive treatments				0.169 (0.107)
Lowest quantile invasive treatments				0.293*** (0.114)
FTE number of professionals	0.009 (0.034)	0.010 (0.006)	0.011* (0.006)	0.009 (0.009)
No chain membership	Reference	Reference	Reference	Reference
Chain membership	-0.393 (0.302)	0.116* (0.063)	-0.130 (0.090)	-0.100 (0.074)
For-profit	Reference	Reference	Reference	Reference
Non-profit	0.449 (0.363)	0.028 (0.073)	0.174** (0.075)	0.187** (0.087)
<i>Cluster/Identifier</i>	ID ITC	ID ITC	ID Chain	ID ITC
<i>Observations</i>	459	292	112	596
<i>Number of groups</i>	211	145	72	236

Corrected for type of specialism, case-mix (i.e. ASA II & III) and year effects (except for the pooled data)

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.5.** Relationship between patient ratings and ITC characteristics

Type of outcome variable	Mean score	Promoter (>=9)	Ratings >=7	Ratings >=8	Detractor (<=6)	NPS
Type of model	RE-Linear	RE-Logit	RE-Logit	RE-Logit	RE-Logit	RE-Linear
Log invasive treatments	-0.073* (0.035)	-0.123* (0.071)	-0.103 (0.121)	-0.174* (0.099)	0.182 (0.151)	0.027 (0.025)
FTE number of professionals	0.002 (0.003)	0.007 (0.006)	0.008 (0.012)	0.014 (0.009)	-0.013 (0.016)	-0.00 (0.002)
No chain membership	Reference	Reference	Reference	Reference	Reference	Reference
Chain membership	-0.163* (0.089)	-0.133 (0.184)	-0.409* (0.238)	-0.390* (0.212)	0.504* (0.293)	-0.077* (0.047)
For-profit	Reference	Reference	Reference	Reference	Reference	Reference
Non-profit	-0.133 (0.114)	-0.365 (0.233)	-0.355 (0.361)	-0.446 (0.288)	0.037 (0.429)	-0.178*** (0.061)
Level of measurement	Patient level	Patient level	Patient level	Patient level	Patient level	Provider level
Cluster	ID ITC + ID Chain	ID ITC + ID Chain	ID ITC + ID Chain	ID ITC + ID Chain	ID ITC + ID Chain	ID Chain
Observations	16507	16507	16507	16507	16507	97
Number of groups	68	68	68	68	68	46

Corrected for case-mix (ASA II & III), type of treatment and year | \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Robustness checks

Table 4.6. shows the robustness checks with fractional logit regressions and the restricted model with aesthetic invasive treatments and the percentage of postoperative infections after aesthetic surgery. The fractional logit regression results support the volume-quality findings from the RE models (Table 4.6., Model I & II). The only stark difference is that the lower-medium-volume ITCs also seem to perform significantly worse than the high-volume ITCs in the fractional logit regression model (Table 4.6., Model II). This finding possibly suggests that the inclusion of centres with zero-infections is advantageous for the relative performance of high-volume ITCs compared to the low-volume ITCs and lower-medium-volume ITCs. The restricted model with the aesthetic invasive treatments also supports the findings on the volume-quality relationship (Table 4.6., Model III). Lastly, the results without including the case-mix factors supports our findings in Table 4.4. and 4.5. (Appendix 4.E.). Interestingly, while in Table 4.5. there is a weak relationship between

volume and patient satisfaction, without case-mix correction, all patient satisfaction indicators are negatively and significantly related to volume except for the NPS. Case-mix could partly mediate the volume-patient-satisfaction relationship, but this discrepancy can also be because the models had more statistical power due to the higher number of ITC locations included in the analysis. The model that restricted the analysis to ITCs with 100 or more invasive treatments (instead of 50 or more invasive treatments) gives similar results to the volume-quality relationship reported in Table 4.4. (Appendix 4.F).

**Table 4.6.** Robustness check with fractional logit models and aesthetic invasive treatments

	Model I	Model II	Model III
Type of outcome variable	<b>Proportional postoperative infections</b>	<b>Proportional postoperative infections</b>	<b>Percentage postoperative infections – aesthetic surgery</b>
Type of model used	<b>Fractional logit</b>	<b>Fractional logit</b>	<b>RE-Linear</b>
Type of data used	<b>Annual data</b>	<b>Annual data</b>	<b>Annual data</b>
Log invasive treatments	-0.226** (0.111)		-0.566*** (0.135)
Highest quantile invasive treatments		Reference	
Higher medium quantile invasive treatments		0.279 (0.193)	
Lower medium quantile invasive treatments		0.869*** (0.236)	
Lowest quantile invasive treatments		1.321*** (0.452)	
FTE number of professionals	0.029 (0.021)	0.056*** (0.021)	0.012 (0.033)
No chain membership	Reference	Reference	Reference
Chain membership	-0.188 (0.215)	-0.550* (0.318)	0.755** (0.317)
For-profit	Reference	Reference	Reference
Non-profit	0.558* (0.310)	0.782** (0.339)	-0.226 (0.319)
<i>Cluster/Identifier</i>	ID ITC	ID ITC	ID ITC
<i>Observations</i>	555	596	113

Corrected for case-mix (ASA II & III), type of treatment (except Model III since it only includes aesthetic surgery) and year

\*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1

## 4.4. Discussion

The results of this study indicate that volume is associated with better performance on the structural and process indicators and on the number of postoperative infections – our outcome indicator. However, because the number of postoperative infections is generally low in low-risk surgical procedures, any increase in volume is associated with only a small decrease in the number of postoperative infections. Furthermore, our study suggests that there is a non-linear relationship between volume and quality, particularly for postoperative infections. This finding is in line with the findings from the hospital sector,<sup>322,339</sup> but contrary to the study on elective surgical procedures.<sup>328</sup> We find an L-shaped curve with around 2000 invasive treatments as a rough inflection point. A relationship between higher volumes and higher quality of care was also reported by Chukmaitov et al.,<sup>310</sup> who specifically studied the ITC sector in the US and found a weak association between volume and the number of 30-day unplanned hospitalisations. The volume-quality association was also confirmed by studies scrutinising high-volume and low-risk procedures,<sup>329-333,358</sup> and by reviews including high-risk procedures.<sup>324-326</sup> However, one study from the UK that looked at three elective surgical procedures (hernia repair, hip replacement and knee replacement) found no association, or of no clinical significance, between volume and quality.<sup>328</sup>

Our models also indicate a negative relationship between volume and patient satisfaction, although with less certainty. This outcome contradicts the findings of a previous study which suggested that patients with total hip replacement surgery performed at low-volume hospitals were less satisfied than those treated in high-volume hospitals.<sup>331</sup>

Regardless of the apparent relationship between volume and quality in this study, these findings do not provide enough evidence to reject fully the null-hypothesis because the effect size between volume and quality is small and because of limitations detailed in the limitations section. Further research should be undertaken to scrutinise the volume-quality relationship for outpatient care.

None of the three hypotheses concerning the structural mediating factors that could potentially mediate the relationship between volume and quality were supported by our study. Firstly, workforce size has no significant relationship with quality of care, and therefore our hypothesis that a bigger workforce improves quality does not hold. This outcome is contrary to one study that found a positive relationship between workforce size and quality by outpatient clinics.<sup>359</sup> Various studies have assessed more specifically whether surgeon volume has an effect on patient outcome. One review found a positive relationship between surgeon volume and quality of care.<sup>327</sup> Secondly, our study provides no evidence of a robust relationship between chain membership and quality (i.e. structure and outcome), although we did find a negative, but statistically weak (90%), association with patient satisfaction. This goes against our second hypothesis but partly reflects the evidence

that shows that concentration and multihospital systems in the US hospital sector do not lead to better quality.<sup>360-363</sup> Thirdly, and contrary to our third hypothesis, we did not find that non-profit providers outperform for-profit providers regarding quality of care. The international empirical evidence for the relationship between ownership and quality presents mixed results which seem to depend heavily on the context (e.g. financial incentives).<sup>61,97,98</sup> However, our findings do indicate that for-profit providers score better on the NPS – a more business-oriented, measurable outcome – which supports the theory that for-profit providers score better on the measurable and transparent outcomes.

Our findings suggest that, given the variation in quality of care among ITCs is substantial (i.e. structural and process indicators and the postoperative infections), there are various ways of improving the efficient allocation of care. On the other hand, the descriptive statistics demonstrate that on average ITCs perform well on quality. Most ITCs comply with the structural and process quality indicators; the average chance of postoperative infections is relatively low; and the average NPS is 55%, which is high compared to the median NPS of 16% for more than 400 companies in 28 industries.<sup>351</sup>

To the best of our knowledge, this is the first scientific study on the quality of care in the ITC sector in the Netherlands and one of the first studies on the volume-quality relationship for high-volume and low-risk procedures taking the entire ITC sector into account. These findings may help various stakeholders to understand the ITC sector better. For example, the Dutch healthcare inspectorate inspects the ITC sector by means of inspection interventions, which in part are guided by various indicators. Some of these indicators were part of this study. The inspectorate could further investigate the difference between low- and high-volume ITCs, preferably taking into account non-linearity when using this indicator.

These results may have important implications for patients as well. In a regulated competitive healthcare system, patients are empowered to choose their own healthcare provider and our findings illustrate that patients should be aware of the variation in performance within the ITC sector.

A data-related practical implication is that the available quality indicators are sub-optimal and therefore we make an appeal to stakeholders in charge to continue their commitment to enhance quality measures within the ITC sector (e.g. patient-reported outcome measures (PROMs)) and improve the quality reporting system.

#### **4.4.1 Limitations**

Despite the richness of our database there may be some biases. Firstly, we did not attempt to disentangle the direction of the volume-quality relationship. Likewise, the data did not allow us to study the learning curve of individual surgeons, with which we could have further explored the volume-quality relationship. We also did not have the opportunity to explore other mediating factors – for instance, the possible impact of quality improvement programmes.<sup>364</sup>

Secondly, ITCs filled out the data questionnaire themselves and this could result in misreporting. It could, for example, lead to underreporting of postoperative infections due to a suboptimal postoperative surveillance system or it could incentivise desirable answers.<sup>365-367</sup> However, for these clinics there are no financial consequences based on what they have reported, so perverse incentives are minimised. For this reason, we expect the bias from self-reporting to move in the same direction (i.e. underreporting) for all ITCs.

Thirdly, patient ratings have their weaknesses, in particular potential selection bias.<sup>368</sup> A number of ITCs did not receive online patient rating scores therefore we performed a significance test with the total number ITCs included in our dataset and the ITCs with at least 30 patient ratings. The test found significant differences in relation to the size of the organisations (Appendix 4.G.). This selection could potentially lead to a Type II error. Furthermore, the online patient rating scores might be subject to selection bias because the patients have to go proactively to the online patient rating website to provide their feedback; they do not receive a reminder after their treatment. We assume all providers are subject to the same bias.

Fourthly, it remains a challenging endeavour to assess the relationship between volume and postoperative infections because (i) the chance of having postoperative infections naturally increases with volume; (ii) small denominators can generate outliers; and (iii) the chance of having postoperative infections is rather low for ITC services. We have addressed this complexity by running a number of models: first, excluding the providers without postoperative infections and setting a minimum volume cut-off point; second, pooling 3 years of observations; and third, a fractional logit model as a robustness check.

Fifthly, although we obtained patient-level data for the patient ratings for this study, the other variables are at the ITC location level. In order to derive more conclusive results, patient-level data for all variables would be preferable, but this data does not (yet) exist for the entire ITC sector.

Lastly, we could not differentiate for hybrid locations – those ITCs that offer a combination of reimbursable and non-reimbursable care. Non-profit ITCs might avoid the for-profit ban with creative accounting.<sup>369</sup>

## 4.5. Conclusions

Our results indicate that, in general, low-volume ITCs are more likely to provide lower quality of care for low-risk invasive ambulatory care than high-volume ITCs. ITCs with more invasive treatments score better on structure, process and outcome (i.e. fewer postoperative infections). However, the relationship between volume and postoperative infections is small and is a non-linear relationship – an L-shaped curve – which suggests a ceiling whereat the marginal benefit of higher volume ITCs diminishes. The visual representation seems to suggest that the inflection point for the rate of postoperative infections is at around 2,000 invasive treatments per

ITC location. In addition, higher volume does not necessarily lead to higher patient ratings, and possibly even influences patient satisfaction negatively.

The mediating factors have a more tenuous relationship with quality. The size of the workforce is not related to the three quality measures. Furthermore, our results suggest that chain membership does not improve quality of care. Instead, a negative relationship between chain membership and patient ratings seems apparent. Likewise, the theory that non-profit providers outperform for-profit providers was not supported by our findings; the relationship is equivocal. Ownership type is not related to the structural and process indicators, but the findings for the pooled postoperative infections and the NPS suggest that for-profit providers might outperform non-profit providers on those quality indicators.

## 4.6. Appendix

### Appendix 4.A. Questions used from the IGJ dataset<sup>a</sup>

---

Aantal locaties

*Number of locations*

---

Uw instelling is een: (ZBC, privé kliniek, medisch diagnostisch centrum)

*Our location is a: (ITC, private clinic, medical diagnostic centre)*

---

Had uw instelling afspraken met een ziekenhuis waar de patiënt in geval van calamiteiten of complicaties, die niet in de particuliere kliniek of het medisch diagnostisch centrum behandelbaar zijn, terecht kan (gedurende 24 uur per dag, 7 dagen per week)?

*Did your location have an agreement with a hospital where patients, in case of complications which cannot be treated at your location, can go (24/7)?*

---

Werden refractiechirurgische ingrepen uitgevoerd in uw instelling in het verslagjaar?

*Did your location perform refractive surgery in the year of survey?*

---

Werden cataractoperaties uitgevoerd in uw instelling in het verslagjaar?

*Did your location perform cataract surgery in the year of survey?*

---

Werden orthopedische ingrepen uitgevoerd in uw instelling in het verslagjaar?

*Did your location perform orthopaedic surgery in the year of survey?*

---

Werden plastisch chirurgische ingrepen uitgevoerd in uw instelling in het verslagjaar?

*Did your location perform plastic surgery in the year of survey?*

---

Werden cosmetische ingrepen uitgevoerd in uw instelling in het verslagjaar?

*Did your location perform cosmetic surgery in the year of survey?*

---

Werden dermatologische ingrepen uitgevoerd in uw instelling in het verslagjaar?

*Did your location perform dermatological surgery in the year of survey?*

---

Voerde uw instelling in het verslagjaar invasieve ingrepen uit?

*Did your location perform invasive surgery in the year of survey?*

---

Totaal aantal invasieve behandelingen in het verslagjaar

*Total number of invasive treatments in the year of survey*

---

Totaal aantal patiënten dat een invasieve ingreep onderging in het verslagjaar

*Total number of patients with invasive treatments in the year of survey*

---

Kunt u onderscheid maken naar ASA-klasse?

*Can you distinguish between ASA status?*

---

Wat was het aantal patiënten in ASA-klasse 1?

*What was the number of patients with ASA status 1?*

---

Wat was het aantal patiënten in ASA-klasse 2?

*What was the number of patients with ASA status 2?*

---

Wat was het aantal patiënten in ASA-klasse 3 en hoger?

*What was the number of patients with ASA status 3 or higher?*

---

Wat was het aantal patiënten met een onbekende ASA-klasse?

*What was the number of patients with unknown ASA status?*

---



---

Beschikte u in het verslagjaar over een deliriumprotocol dat voldoet aan bovenstaande beschrijving?

*Did your location have a delirium protocol in the year of survey?*

---

Screende u in het verslagjaar structureel patiënten op risico voor delirium?

*Did your location screen patients on delirium a structural basis ?*

---

Aantal patiënten met een postoperatieve infectie in het verslagjaar

*Number of patients with postoperative infections in the year of survey*

---

Aantal BIG-geregistreerde basisartsen (in FTE), werkzaam in uw instelling in het verslagjaar.

*Number of registered physicians (in FTE) working at your location in year of survey*

---

Aantal RGS-geregistreerde medisch-specialisten (in FTE), werkzaam in uw instelling in het verslagjaar

*Number of registered medical specialists physicians (in FTE) working at your location in year of survey*

---

Aantal (RGS-geregistreerde) medisch specialisten in het verslagjaar (NIET in FTE)

*Number of registered medical specialists physicians (not in FTE) working at your location in year of survey*

---

Aantal (BIG-geregistreerde) basisartsen in het verslagjaar (NIET in FTE)

*Number of registered physicians (not in FTE) working at your location in year of survey*

---

De behandelend arts was in het verslagjaar 24 uur per dag oproepbaar

*The physician who carried out the treatment could be reached 24/7*

---

De dienstdoende arts was in het verslagjaar 24 uur per dag oproepbaar

*The physician on duty could be reached 24/7*

---

Voerde u in het verslagjaar patiënttevredenheidsonderzoek uit?

*Did your location carry out a patient satisfactory survey?*

---

a. Note: the ITC locations fill out the questionnaires themselves. Sometimes the head office of the chain fills out the forms for all their locations, but these questionnaire are still answered by each care location separately.

---

## Appendix 4.B. Additional methods description

### *Merge patients' ratings and IGJ data*

There were some patients' rating locations that did not have data with the corresponding year in the IGJ data. For those observations that could not be matched, the organisational characteristics of the ITCs were assigned to those patients' rating observations whereby the gap of the last year's observation in the IGJ dataset was the smallest, gaps above 3 years were excluded (86 patients' rating observations were deleted due to this restriction).

### *Augmented component plus residual plots*

The augmented component plus residual plots is a method proposed by Mallows<sup>355</sup> to visually detect non-linearity. The partial residuals are the dependent variables corrected for all the independent variables except the variable in question – in our case invasive treatments – and the augmented partial residuals adds a quadratic term. “In the absence of nonlinearity, the augmented partial residual plot and the component-plus-residual plot are similar. But if a nonlinear effect is present in a variable (it need not be quadratic), the augmented residual plot gives a clearer picture of the effect than the component residual plot”<sup>370, p.58</sup>. The graphs are supported by a linear line and a line that locally weights the regression, to illustrate potential non-linearity for each quality indicator with the number of invasive treatments.

**Appendix 4.C. VIF scores: testing for multicollinearity**

	Composite Quality indicator		Postoperative infections		3 year pooled postoperative infections		Aesthetic postoperative infections		Patients ratings		NPS	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
<b>Log invasive treatments</b>	1.45	0.69	1.66	0.60	1.89	0.53	1.48	0.68	3.09	0.32	2.02	0.49
<b>Chain membership</b>	1.06	0.95	1.29	0.78	1.27	0.79	1.23	0.81	2.20	0.46	1.54	0.65
<b>FTE of professionals (physicians and nurses)</b>	1.77	0.56	2.77	0.36	2.54	0.39	1.36	0.73	7.95	0.13	3.12	0.32
<b>Ownership</b>	1.30	0.77	1.23	0.81	1.34	0.75	1.48	0.67	1.26	0.79	1.36	0.74
<b>Specialism ophthalmology</b>	1.64	0.61	1.75	0.57	2.38	0.42			3.80	0.26	3.58	0.28
<b>Specialism orthopaedics</b>	1.79	0.56	2.26	0.44	2.17	0.46			5.24	0.19	2.96	0.34
<b>Specialism aesthetic surgery</b>	1.33	0.75	1.38	0.72	1.51	0.66			2.06	0.49	1.58	0.63
<b>Specialism dermatology</b>	1.47	0.68	1.42	0.70	1.77	0.57			2.57	0.39	2.84	0.35
<b>ASA II</b>	1.26	0.80	1.17	0.85	1.84	0.54	1.27	0.79	2.58	0.39	1.93	0.52
<b>ASA III</b>	1.19	0.84	1.29	0.77	1.50	0.67	1.29	0.78	3.87	0.26	2.60	0.38
<b>Year 2</b>	1.42	0.71	1.56	0.64			1.58	0.63	2.22	0.45	2.30	0.44
<b>Year 3</b>	1.45	0.69	1.58	0.63			1.56	0.64	3.00	0.33	3.23	0.31
<b>Year 4</b>			1.72	0.58			1.55	0.64	2.31	0.43	2.65	0.38
<b>Mean VIF</b>	1.43		1.62		1.82		1.42		3.24		2.44	

**Appendix 4.D. Summary statistics divided by the type of provider and chain-membership (2014-2017)**

Non-profit			For-profit		
	Average number of locations		Average number of invasive treatments	Average number of locations	Average number of invasive treatments
Chain affiliated ITC locations	Overall mean $\pm$ SD	5.41 $\pm$ 4.08	2204.40 $\pm$ 2206.17	4.14 $\pm$ 2.52	1296.36 $\pm$ 2513.29
	n%	42%		39%	
Sole proprietorship	Overall mean $\pm$ SD		1495.43 $\pm$ 1647.30		988.38 $\pm$ 1020.13
	n%	58%		61%	

**Appendix 4.E. Results without ASA classification included as control**

Type of outcome variable	Composite Quality indicator	Postoperative infections	Postoperative infections	Mean score	Promoter (>=9)	Ratings >=7	Ratings >=8	Detractor (<=6)	NPS
Type of model	RE - Linear	RE - Linear	RE - Linear	RE - Linear	RME - Logit	RME - Logit	RME - Logit	RME - Logit	RE - MLE
Type of data used	Annual data	Annual data	Pooled over 3 years	Annual data	Annual data	Annual data	Annual data	Annual data	Pooled to provider level
Log invasive treatments	0.420*** (0.083)	-0.396*** (0.034)	-0.096*** (0.029)	-0.068** (0.028)	-0.136** (0.057)	0.244** (0.120)	-0.190** (0.096)	-0.145** (0.073)	0.004 (0.021)
FTE number of professionals	-0.023 (0.032)	0.017** (0.007)	0.008 (0.006)	0.003 (0.003)	0.005 (0.006)	-0.020 (0.015)	0.014 (0.012)	0.015* (0.008)	-0.000 (0.002)
No chain membership	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Chain membership	-0.254 (0.287)	0.067 (0.063)	-0.108 (0.078)	-0.133* (0.070)	-0.131 (0.143)	0.540** (0.229)	-0.443** (0.186)	-0.260 (0.168)	-0.087** (0.042)
For-profit	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Non-profit	1.402*** (0.378)	0.144* (0.081)	0.140** (0.064)	-0.144 (0.104)	-0.362 (0.236)	0.070 (0.377)	-0.318 (0.318)	-0.560** (0.268)	-0.164*** (0.056)
Cluster/ Identifier	ID ITC	ID ITC	ID Chain	ID ITC + ID Chain	ID ITC + ID Chain	ID ITC + ID Chain	ID ITC + ID Chain	ID ITC + ID Chain	ID Chain
Observations	716	410	136	19,294	19,294	19,294	19,294	19,294	117
Number of groups	313	187	93	80	80	80	80	80	55

Controlled for type of specialism and year effects (expect for the pooled data)

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Appendix 4.F. Results with a cut-off point of 100 invasive treatments for postoperative infections

Type of outcome variable	Postoperative infections
Type of model	RE
Type of data used	Annual data
Log invasive treatments	-0.270*** (0.031)
FTE number of professionals	0.009* (0.006)
No chain membership	Reference
Chain membership	0.101* (0.057)
For-profit	Reference
Non-profit	0.029 (0.065)
<i>Cluster/Identifier</i>	ID ITC
<i>Observations</i>	287
<i>Number of groups</i>	143

Corrected for case-mix(ASA II & III), type of treatment and year

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Appendix 4.G. Statistical difference between providers with and without patients' ratings

	Difference	T-statistics
Number of invasive treatments	1368.10***	(5.68)
FTE of professionals (physicians and nurses)	4.44***	(5.57)
Chain membership	-0.02	(-0.38)
Ownership	0.23***	(4.55)
Specialism ophthalmology	0.15**	(2.64)
Specialism orthopaedics	0.12*	(2.61)
Specialism aesthetic surgery	-0.08	(-1.27)
Specialism dermatology	0.04	(0.65)
ASA II	0.07*	(2.22)
ASA III	0.02**	(3.12)
N	328	

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Is there a volume-quality relationship within the independent treatment centre sector?

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# Chapter

# 5.

## **For-profit nursing homes in the Netherlands: what factors explain their rise?**

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## Abstract

This exploratory mixed-methods study analyses characteristics of the emerging for-profit nursing home industry in the Netherlands and identifies the interrelated set of factors (context, trends, and sector conditions) that contribute to its growth. Until recently, the Dutch nursing home sector relied almost exclusively on non-profit providers. Even though profit distribution in nursing home care is still banned, the for-profit nursing home sector is expanding. The study uses economic theory on non-profit organisations and mixed-form markets to understand this expansion.

We find that changes in the regulatory framework have unlocked the potential of the for-profit nursing home sector, enabling for-profit nursing homes to circumvent the for-profit ban. The expansion of the for-profit sector was mainly driven by the low responsiveness of the non-profit sector to increased and changed demands. For-profit providers took advantage of this void. Moreover, they exploited “cream-skimming” potential in the market, and used the wider care system to reduce their labour costs by relying on external specialist care. Another main driver was the access to financial capital from private investors (e.g., private equity firms).

**Keywords:** For-profit, nursing homes, non-profit, private equity, ownership, the Netherlands

## 5.1 Introduction

Nursing homes can be public, non-profit or for-profit organisations. The share of for-profit nursing homes differs significantly among Western countries, ranging from 4% in Norway to about 76% in England.<sup>56</sup> For-profit nursing homes have received considerable attention from scholars, mainly with regard to their performance in comparison to non-profit and public organisations.<sup>104,112,113,371-373</sup> Research on factors that explain the role of for-profit organisations in the nursing home industry is less advanced. Although literature on the non-profit enterprise offers helpful insights about factors that might shape the organisational makeup of sectors, scholars also state that “there is very little understanding of the dynamic forces causing the expansion of the [non-profit or for-profit] sector into areas long dominated by the other”<sup>374, p.544, 375, p.63</sup>.

Current developments in the Dutch nursing home sector provide a good opportunity to increase our understanding of these dynamics. The Netherlands is known for its almost exclusively private non-profit provision of nursing home care.<sup>124</sup> Until recently, the role of for-profit providers was negligible. No Dutch policies were directed toward the growth of the for-profit share and a ban on profit distribution in nursing home care for the elderly is still in place. Nevertheless, Dutch for-profit nursing homes are gaining ground.

This explorative study aims to understand how the Dutch nursing home market has opened up to for-profit homes: What is the current status of the Dutch for-profit nursing home sector, and what factors stimulated its expansion? It is, to the best of our knowledge, the first academic study aimed at describing and understanding the growth in for-profit nursing homes in the Netherlands. Our study builds on mixed-form markets literature<sup>63,376</sup> and economic theory on non-profit organisations.<sup>31,62,377-379</sup>

## 5.2. Theoretical framework

### 5.2.1. For-profit and non-profit organisations

The principal difference between for-profit and non-profit organisations is “the presence of strict limits on the appropriation of the organisation’s surplus in the form of monetary gain by those who run and control it”<sup>107, p.5</sup>. Both non-profit and for-profit organisations can earn a surplus, but the non-distribution constraint prohibits non-profit organisations from distributing surpluses to third parties. Instead, they must retain and devote surpluses to financing further development of their services, to benefit “beneficiary stakeholders”<sup>31,62</sup>.

In order to understand the participation of for-profit providers in the healthcare system, it is useful first to review theories explaining the participation of non-profit providers. The “third-sector rationale” and the “contracting and trust-goods rationale” help to explain the presence of non-profit organisations in certain industries.<sup>376</sup> The “third-sector rationale” understands the participation of non-profit

organisations in a sector as a way of compensating for inadequate for-profit and government provision of services.<sup>107,380</sup> Non-profit providers might seek to step in, for example, when profit-maximising behaviour by for-profit providers, such as cost-cutting leads, to a reduction in the quality of services or when government providers are unable to deal with heterogeneity in demand.<sup>379</sup> The “contracting and trust-goods rationale” views the organisation instead as a nexus of contracts: it argues that, rather than a corrective for the failures of other providers, non-profit providers are the most efficient form of organising the delivery of “trust goods” – that is, goods that are difficult for stakeholders to evaluate due to information asymmetry. Because non-profit providers are subject to the non-distribution constraint, consumers are less concerned about being exploited due to the information asymmetry, and hence the costs of contracting are lower, because less effort must be made to regulate and control the contracted providers.<sup>62,376,377,379,380</sup>

### **5.2.2. Factors that stimulate the entrance of for-profit organisations in non-profit sectors**

The aforementioned theoretical arguments predict that the non-profit sector dominates in the provision of long-term care (LTC) services, however, many Western healthcare systems are organised as mixed markets that also include for-profit organisations.<sup>56</sup> The Dutch non-profit nursing home sector is also evolving into a mixed market. Literature on mixed-form markets points to possible reasons for the coexistence of different organisational forms in one sector,<sup>63,381</sup> and helps us to identify factors that might explain the changing makeup of the Dutch nursing home sector. We identify sector conditions, broader trends and context enablers.

#### *Sector conditions*

The profit motive incentivises for-profit firms to enter a sector and expand when demand increases or changes.<sup>62</sup> In addition, for-profit organisations are more responsive to changing demand than non-profit providers because they do not face so-called “trapped capital”.<sup>92</sup> Although non-profit organisations aim at avoiding a negative net cash flow, they are not necessarily incentivised to minimise costs and to adjust capacity to demand. Hence, non-profit organisations tend to be slower in adjusting their capacity to changing demands than for-profit organisations.

A related factor that might lead to an increase of for-profit providers is heterogeneity in demand, which gives non-profit and for-profit organisations the opportunity to serve their own clientele. For example, non-profit nursing homes in the United States (US) primarily target the “clinically more severe and financially more lucrative end of the payer spectrum”, whereas for-profit facilities “usually have a less lucrative payer mix”.<sup>382, p.339</sup>

A related condition is the potential for “cream skimming”. It is not unusual for non-profit organisations to cross-subsidise their services.<sup>62</sup> The surplus of payments made by individual clients is used to serve non-profit organisations’ charitable clients. As for-profit organisations can choose to serve only profitable clients, they are

able to compete on price and/or quality of services.<sup>63,376</sup> In general, increasing prices in non-profit organisations beyond a break-even point, signals the market's potential profitability, which may lead to for-profit organisations entering the market.<sup>381</sup>

#### *Broader trends*

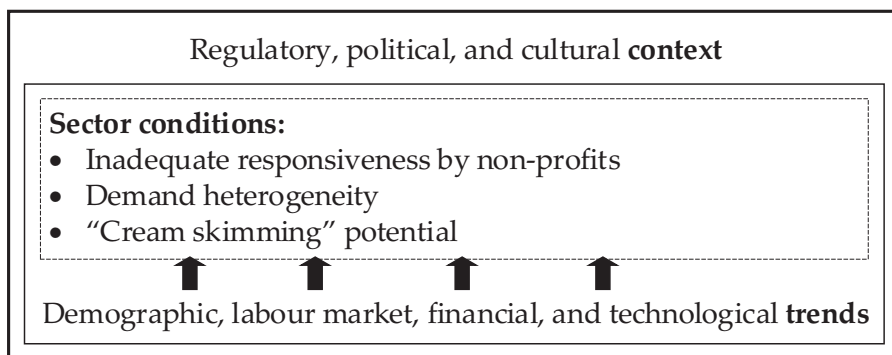
Sector conditions are affected by broader trends: demographic developments, labour market circumstances, financial trends, and technological developments.<sup>380</sup> For example, an ageing population would lead to an increase in demand for LTC services. Labour market circumstances determine the type of labour available and the fluctuations in labour costs. The non-profit and for-profit sectors may attract different types of labour and therefore changing labour market circumstances may affect them differently. For instance, the non-profit sector attracts more voluntary labour, so rising labour costs may give non-profit organisations a competitive advantage over for-profit organisations.<sup>31</sup> Trends in the cost of financial capital can also affect the ownership composition. Non-profit and for-profit organisation exploit different ways of attracting investment funds. For-profit organisations are able to attract private investors, such as private equity firms, because they can pay dividends, whereas non-profit organisations rely on financial means such as loans, donations, or grants. Finally, technological developments can lead to innovations that disrupt the composition of the market.<sup>383</sup>

#### *Context*

These conditions and trends need to be placed in their regulatory, political and cultural contexts.<sup>380</sup> Several contextual factors affect the emergence and growth of the for-profit sector. First, regulations can either promote or hinder the role of for-profit organisations.<sup>376</sup> For example, government regulations granting tax-exemptions to non-profit organisations give them a competitive advantage over for-profit providers. Second, the political and cultural context can be either receptive to or sceptical of for-profit provision of healthcare services. For example, different types of welfare states can lead to different approaches to problem-solving that favour one organisational form over the other because of more or less trust in the private sector. The American liberal welfare state favours for-profit provision whereas the social-democratic welfare states in Scandinavia favour public provision.<sup>384</sup> Third, path dependencies affect the emergence of for-profit providers: the "social origins" of public goods provision and existing institutions create structures, norms and practices that can significantly influence the organisational makeup of the sectors.<sup>380,384</sup> Fourth, the political and cultural context can be subject to broad, paradigmatic shifts. Most notably, the New Public Management paradigm of the 1980s and 1990s encouraged business-like values such as efficiency, output measurement and customer orientation.<sup>3</sup> New Public Management heralded an era of privatisation, tendering procedures for public services, and outsourcing. In many countries, the for-profit nursing home sector grew in response to the introduction of quasi-markets.<sup>372,385-389</sup>

Figure 5.1. shows the schematic representation of the theoretical framework.

**Figure 5.1.** Summary of factors that can facilitate for-profit entry in non-profit-dominated sectors



### 5.2.3. Institutional background

The comprehensive, universal LTC system in the Netherlands enables every citizen in need of LTC to rely on public funding. The Netherlands is one of the highest LTC spenders on nursing and personal care services among all Organisation for Economic Co-operation and Development countries.<sup>390</sup>

In 2015, a major reform of LTC regulation in the Netherlands occurred. The reform aimed to bring about a move from residential to non-residential care.<sup>125</sup> It also decentralised the LTC sector, delegating commissioning power to regional LTC offices. The reform reduced government responsibility: instead of having overall control of LTC delivery, the government would instead finance and safeguard the functioning of the LTC market.

For a person to get access to LTC and public financing in the Netherlands, they must undergo both a care needs assessment and means testing. The care need is determined by the Care Assessment Centre and gives a person access to public LTC funds (Wlz; Dutch LTC law). The Wlz regulation provides three options for care financing. The first and most frequently chosen option is the in-kind intramural package, which is used in non-profit nursing homes. It is an elaborate care package that includes housing. For the in-kind intramural package, a regional LTC office contracts nursing homes within its region. People choosing the in-kind package are placed in a contracted LTC facility based on the nursing home’s suitability and vacancies. The second financing plan is an in-kind extramural package called the total home-care package (HCP; in Dutch: VPT) or the modular care package (MCP; in Dutch: MPT). In this financing plan, the regional LTC office only purchases the provision of care; care recipients organise and finance their own housing. This can be their own house or an apartment on the site of a nursing home. With MCP, the care is still contracted by the regional LTC office, but the eligible person can adapt the care package – for example, by abstaining from food services in the HCP package. The

third option is funding in the form of a personal budget (PB; in Dutch: PGB), which allows clients to arrange their own extramural care instead of delegating this task to the regional LTC office. As both the second and third financing plans are intended to facilitate the provision of care at home by making housing a private responsibility, both are considered to be extramural financing plans.

## 5.3. Methods and data

We applied a mixed-methods approach in which we combined quantitative and qualitative data to answer our research question.

### 5.3.1. Quantitative methods and data

#### *Definitions*

Dutch for-profit nursing homes are defined as facilities that have the legal status of a private for-profit company (private limited company, general partnership, or sole proprietorship). A private equity firm is defined as a company that owns and trades unlisted, private companies; it creates one or more funds that obtain capital commitments from investors such as pension funds, insurance companies, or wealthy individuals. Using the fund's capital, along with a loan commitment, the private company acquires so-called portfolio companies, which are sold within three to seven years on average.

#### *Data sources*

No available dataset included all the different types of Dutch nursing homes. Hence, we constructed such a dataset for this study based on two (semi-) public datasets: data from the Netherlands Patients Federation (2019) for the period 2015-2017 and data from the Dutch National Healthcare Institute of 2016.<sup>391</sup> We added data on regional characteristics (i.e. socioeconomic indicators) from the Netherlands Institute for Social Research;<sup>392</sup> and Statistics Netherlands.<sup>393</sup>

#### *Variables and analysis*

To ascertain the legal status, types of ownership, and year of opening for each for-profit nursing home, we searched their respective websites, local news articles (using LexisNexis), ownership information from the Amadeus dataset (financial data and company information for European companies; Bureau van Dijk), and publicly available inspection reports of the Dutch Health and Youth Inspectorate. We then tried to obtain missing data through e-mail correspondence with the nursing homes. We also constructed a dichotomous variable for chain membership; nursing homes were categorised as chain members if they were part of a parent company with two or more nursing homes. Furthermore, we calculated the percentage of nursing homes owned by the four biggest chains, and used the Dutch National Healthcare Institute dataset to estimate the average number of clients living within the different

types of nursing homes. The Netherlands Patients Federation data were used to identify significant differences in the client ratings between the nursing home types, conducting the Welch t-test that corrects for unequal variances.

Regional statistics include the socioeconomic status of the region and the average value of the buildings in euros. Regional statistics were linked by means of four-digit postal codes. The socioeconomic status uses a standardised measure in which zero equals the average Dutch neighbourhood and scores are higher (positive) or lower (negative) than the socioeconomic average.

### 5.3.2. Qualitative methods and data

In addition to the quantitative analyses, we carried out a qualitative analysis to identify the distinctive features of for-profit nursing homes and to understand the factors that hinder and stimulate the growth of the Dutch for-profit nursing home industry. The research ethics committee exempted this research for the Medical Research Involving Human Subjects Act.

#### *Data collection*

Twenty-two semi-structured, in-depth interviews were conducted with a total of 25 participants (See Table 5.1.). All participants signed an informed consent form. The interviews consisted of the following two questions for directors and experts in the nursing home sector: (A1) What is the organisational model in the for-profit nursing home? (A2) What are opportunities and barriers for growth of the for-profit nursing home industry? Other questions were applied in interviews with the client representatives of for-profit nursing homes: (B1) What were the reasons to choose this particular nursing home? (B2) What were the reasons to choose a for-profit nursing home? (B3) How do you evaluate living in a for-profit nursing home? Interviews were audiotaped and transcribed verbatim.

**Table 5.1.** Profile of the participants

Background	Interview participants	
	n = 25	Participant no.
Director/ staff for-profit facility (facility related to chain)	5	6, 8, 22
Director/ staff for-profit facility (standalone facility)	5	5, 10, 11, 12
Client for-profit facility (or representative of a client)	5	1, 2, 3, 14, 15
General sector expert	5	4, 7, 9, 13, 16
Institutional actor <sup>a</sup>	4	17, 18, 19, 21
Director/ staff nonprofit facility <sup>b</sup>	1	20

<sup>a</sup> Participants from the Ministry of Health, long-term care trade association non-profit sector, and LTC offices.

<sup>b</sup> The table lists the current positions of the participants. Many of them also had expertise on or experience in the non-profit sector.



*Sampling*

Participants were purposefully selected based on preselected criteria. These included (a) the participant has expertise on the Dutch nursing home sector, (b) this expertise is based on at least three years of experience (this criterion does not apply to the client group of participants), and (c) the expertise was expected to add to the range of perspectives included in the sample. As the study had an explorative basis, maximum variation sampling was applied to capture a wide range of perspectives. We stopped adding new participants to our sample when we reached thematic saturation.

*Data analysis*

We applied inductive thematic techniques to identify major underlying themes in the interview data using Atlas.ti. Two researchers independently drafted a list of recurrent codes derived from the data. The two researchers collaboratively refined an initial set of codes that captured the main ideas in the data. Subsequently, the codes were collated into broader themes. For all themes, both the number of coded interview segments on the theme and the number of respondents who shared information on the theme were written down to weigh the relative importance of the themes and to determine the central findings.

## 5.4. Results

We start by outlining relevant regulatory, political and cultural context variables. Thereafter, we provide a description of the current makeup of the Dutch nursing home sector, including the distinctive characteristics of for-profit nursing homes. The last paragraphs present our findings on the sector conditions and the broader trends that stimulated the for-profit expansion in the Dutch nursing home industry.

We acknowledge that many factors are strongly interconnected but we discuss each factor separately for the sake of analytical clarity. The dynamics between the factors are addressed in the Discussion and Conclusions section.

### 5.4.1. Context

*Regulatory context*

The LTC reform of 2015 provided two opportunities for for-profit entry and expansion in the Dutch nursing home sector.

Firstly, the profit ban for intramural care services prohibits the allocation of profits to third parties for nursing homes that apply the in-kind intramural care package. However, the ban does not apply to care delivered through the extramural financing schemes (i.e., HCP, MCP, and PB) or to nursing homes with fewer than 7 people.<sup>394</sup> Although these extramural plans were introduced to facilitate the provision of care at home, they are increasingly used to provide nursing home care for groups of care-recipients at one specific location – that is, the clustered provision of extramural care. In this way, for-profit nursing homes circumvent the ban on profit distribution, but

are still able to receive public funding to provide care to people who are assessed by the Care Assessment Centre as requiring nursing home care.

Secondly, affluent residents of non-profit nursing homes have to make high co-payments, and this opened up a market for for-profit nursing homes. All three financing plans (in-kind, HCP/MCP, and PB) come with obligatory co-payments that vary with the residents' income and capital. The maximum co-payment is €2,365 per month for the in-kind intramural package and €862 per month for the extramural financing schemes in 2019. This system of obligatory co-payments is beneficial for the for-profit sector, as the co-payment in their financing schemes (HCP/MCP and PB) is much lower than for the in-kind package in non-profit nursing homes. As a result, the in-kind intramural package is less attractive for more affluent clientele, who can use the €1,500 per month difference in co-payments to rent an apartment in a for-profit nursing home. For the majority of for-profit nursing homes, prices for rent and services range from €3,000 to €4,500 per month, but could reach €7,500 per month.<sup>395</sup> The cost of care, which is covered by public budgets and obligatory co-payments, is additional to the monthly rent and services prices (i.e., "topping up" services)<sup>389</sup>.

#### *Political and cultural context*

The Netherlands should be considered a hybrid welfare state, resembling different welfare state types.<sup>396</sup> The Dutch political context represents a decision-making model that is consensual, decentralised, horizontal, and in collaboration with its stakeholders.<sup>397</sup> Its political context is characterised by a collaborative relationship between government and non-profit sectors. Non-profit enterprises have been the dominant organisational form in the Dutch nursing home sector since World War II.<sup>33</sup> Capital funds for non-profit entities were widely accessible and, as a consequence, the entrance of for-profit providers in the healthcare sector was discouraged.<sup>33</sup> The preference for non-profit providers was legally reinforced by a profit ban in 1977.<sup>32</sup>

#### **5.4.2. Characteristics of the for-profit sector**

Table 5.2. provides an overview of the descriptive statistics on the Dutch for-profit nursing home sector in 2019, which consists of 274 for-profit nursing homes, 12.2% of the total number of nursing home locations. For-profit nursing homes are much smaller than their non-profit counterparts: whereas for-profit homes have 20 clients on average per location, non-profit homes average 64 clients per location. This implies that approximately 4.0% of the total nursing home client population lives in for-profit homes.

The majority of for-profit facilities are chain-affiliated. The proportion of for-profit nursing homes that are standalone is higher for homes that rely on PBs than for homes that rely on HCP/MCP. Most for-profit locations are owned by private individuals. One in five publicly contracted for-profit nursing homes is private equity-owned; one in four is owned by an international chain.

Finally, our results show that for-profit nursing homes are more frequently located in affluent regions. For-profit facilities working from a PB, in particular, are situated in regions with a significantly higher socioeconomic status and with a higher average value of buildings.

**Table 5.2.** Descriptive statistics for-profit nursing home sector

	Non-profit	For-profit contracted by the regional LTC office (HCP/MCP)	For-profit financed by personal budget (PB)
Number of nursing home locations	87.8% n=1968 <sup>a</sup>	12.2% n=274 <sup>b</sup>	
		5.9% n=132	6.3% n=142
Average number of clients <sup>c</sup>	64.2 (58.11) n=1678	22.9 (19.52) n=32	15.5 (5.13) n=21
<b>Legal status ultimate owner</b>			
Limited liability firm		98.5%	93.0%
Sole proprietorship or general partnership		1.5%	7.0%
<b>Type of owner</b>			
Privately owned		53.8%	78.9%
Investor		7.6%	19.0%
Private equity		20.5%	3.5%
International chain		26.5%	0.7%
<b>Chain affiliation</b>			
Chain membership	95.24%	81.8%	69.0%
Percentage nursing homes owned by the four biggest chains	6.1%	38.6%	40.9%
<b>Geographical distribution</b>			
Average socioeconomic status (2017) <sup>d</sup>	-0.33 (1.18)	-0.10** (1.21)	0.13*** (1.07)
Average value buildings (x1000 in euros) <sup>e</sup>	210.54 (50.38)	219.88** (61.33)	219.48* (62.87)

Sources: Netherlands Patients Federation, National Healthcare Institute, Netherlands Institute for Social Research, Statistics Netherlands

\*\*\*p<0.01, \*\* p<0.05, \* p<0.1 | Standard deviation between parentheses

a. The number of intramural care providers in the National Healthcare Institute dataset

b. Eight for-profit nursing homes were excluded, as it is unknown which financial package they apply; 20 nursing homes were excluded because they work from HCP/MCP, but obtained a non-profit status

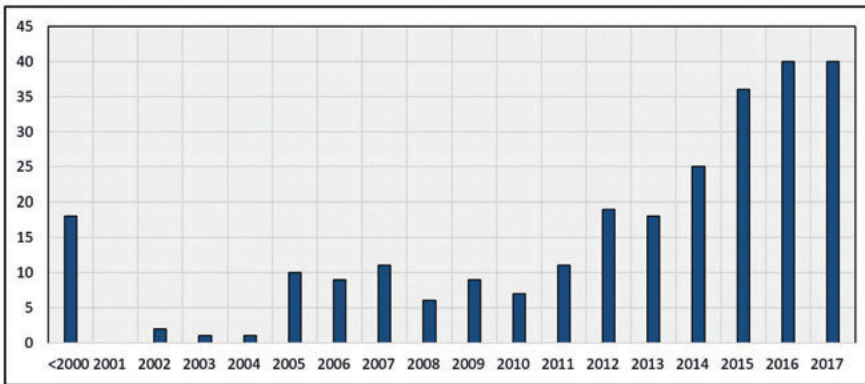
c. Estimation based upon the numerator of the rate of psychotropic drug use per nursing home (National Healthcare Institute dataset); since not all nursing homes reported on this measure, the number of nursing homes are smaller than the total number of nursing homes

d. Based upon a standardized measure: 0 represents the average Dutch neighborhood

e. In the region of the residence

We found that the for-profit nursing home industry grew substantially over the years: 50% of the active for-profit nursing homes opened in the last three years (Figure 5.2). Approximately 50% of the for-profit nursing homes were already active before the LTC reform of 2015. These for-profit nursing homes relied on private payments or PBs. During our research, we obtained plans of for-profit chains indicating their intentions to open 45 new nursing homes in the near future, implying short-term future growth of at least 16% of the total number of for-profit nursing homes relative to 2017.

**Figure 5.2.** Growth for-profit sector (year of opening)<sup>a</sup>



a. There was 1 missing and 16 locations were opened in 2018, but were already included in the Netherlands Patients Federation dataset of 2017. Facilities that were closed were not included in the dataset.

We also found an increasing uptake of HCP packages, which reflects the growth of the for-profit nursing home sector. Although HCP packages can be used to fund care at home, respondents highlighted that these packages are primarily used for clients in clustered living facilities that are mainly for-profit. The increase in HCP uptake is much higher (17% in 2016 relative to 2015 and 19% in 2017 relative to 2016) than for in-kind intramural packages (-2% and -1%, respectively).<sup>398</sup>

### 5.4.3. Sector conditions

#### *“Cream skimming” clients*

For-profit nursing homes exploit the sector’s “cream skimming” potential by selecting the type of clients they wish to serve. For-profit nursing homes working from the PB plan are able to select their clients, whereas other nursing homes must accept clients referred to them by the LTC office. Participants from the for-profit sector confirm that they select clients based on how they fit with the existing group of residents and on employees’ ability to take care of certain client needs (i.e., severity of their disease). Moreover, despite the promise that clients can live in for-profit facilities until they

die, participants mention examples of residents who, because of the severity of their disease, still had to move to a non-profit nursing home.

#### *Inadequate responsiveness*

For-profit nursing homes seem more responsive to changing demands than their non-profit counterparts. There have been increasing shortages in the Dutch nursing home sector; the number of people on waiting lists has almost doubled since 2017.<sup>399</sup> This left a vacancy for the for-profit sector to fill.

Moreover, for-profit nursing homes have been more responsive to the increased demand for a “well-being” approach that focuses on well-being rather than the medical aspects of nursing home care and that encourages small-scale nursing homes that feel “just like home”. Participants state that for-profit nursing homes are frontrunners in the implementation of the “well-being” approach, whereas the non-profit sector often represents large-scale, bureaucratic, and medically oriented organisations. The qualitative data further indicate that the elderly of today, and their families, are increasingly demanding; they articulate their wishes and ask for environments that fit their lifestyle, which often does not align with the current supply of traditional non-profit nursing homes.

Participants provided numerous illustrations of what the “well-being” approach means in practice. For example, the quality of food and food preparation is regarded as an important aspect of well-being. Another aspect of well-being is the living environment of for-profit facilities, which often includes nice outdoor spaces and large private rooms that residents can furnish themselves so that they feel at home, whereas many non-profit nursing homes provide fully furnished rooms. Client participants stated that they also considered choosing a non-profit nursing home, but that these looked too much like “institution[s]” (P2) or were “too clinical” (P3). In contrast, for-profit locations have common rooms that “look like a hospital or traditional nursing home as little as possible” (P11) – for example, through “open front doors for residents [with dementia], and the absence of safety measures at the stairs” (P22).

Our tentative analysis of the client ratings of the Netherlands Patients Federation finds that the well-being and customisation approach in for-profit nursing homes is highly appreciated by residents. Although the number of for-profit nursing homes in our sample is relatively small, we find that client satisfaction is significantly higher at for-profit providers for all indicators (Table 5.3).

Although non-profit nursing homes aim at moving in the direction of the “well-being” approach and small-scale units, they are hindered by their heritage of large-scale real estate and an organisational culture in which the medical perspective on nursing home care is strongly embedded: “Most for-profit providers benefit from their newness” (P21). The Dutch for-profit nursing homes do not start as large-scale organisations that converted from non-profit to a for-profit status, but rather function as newly established organisations.

**Table 5.3.** Difference between the type of nursing homes and their client ratings

	Non-profit	For-profit <sup>a</sup>
<b>Average score accommodation</b> (scale 1-10)	7.94 (0.58)	8.78*** (0.39)
<b>Average score employees</b> (scale 1-10)	8.16 (0.43)	8.77*** (0.48)
<b>Average score for listening</b> (scale 1-10)	7.78 (0.48)	8.39*** (0.61)
<b>Ratio of clients who would recommend the nursing home</b> (dichotomous variable: yes/no)	0.92 (0.08)	0.95*** (0.07)
<b>N</b>	1.108	32

Source: Netherlands Patients Federation (2014-2017)

Standard deviation in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$  (alternative hypothesis that for-profit ratings > non-profit ratings)

a. all for-profit providers were combined (HCP/MCP & PB financed) because the number of observations was deemed too low to separate the two groups

#### *Utilising the current care system*

We found another factor that benefitted for-profit nursing homes and does not fall neatly into one of the predefined theoretical categories. Whereas most non-profit nursing homes employ staff for specialist care, for-profit homes can reduce labour costs by not hiring expensive staff for specialist care. Instead, specialist care in HCP/MCP-funded for-profit facilities often relies on geriatric specialists seconded from non-profit providers. Specialist care in PB-funded for-profit facilities relies on general practitioners (GPs). Hence, for-profit nursing homes greatly benefit from the wider healthcare system: they utilise the current care system to reduce their labour costs. GPs have raised their concerns about the limits of their profession in this organisational model:

*There was fuss about the role of the GPs in for-profit nursing homes working from PBs. Formally, these elderly live at their own home, which makes the GP the first point of contact for medical care. When 20 elderly people with severe dementia live in one place, however, it can be questioned whether this is manageable for GPs. (P21).*

GPs perceive the care for the elderly in these types of homes as too severe and too specialised. Consequently, in 2019, the Dutch Ministry of Health, Welfare and Sport began questioning this for-profit nursing home strategy.<sup>400</sup>

Although participants observed that the “well-being” demand is primarily articulated by more highly educated elderly, our data provide no clear evidence for the heterogeneity of demand proposition as presented in the theoretical framework.

#### 5.4.4. Broader trends

##### *Demographic*

Demographic trends have led to an increase in both the absolute and relative number of elderly in the Netherlands, and this trend is likely to continue in coming decades.<sup>401</sup> On average, the new generation of elderly is better educated than previous generations and wealthier in terms of equity.<sup>401</sup> More than half of the elderly in the Netherlands have wealth in excess of 100,000 euros, and one in ten have wealth in excess of half a million euros.<sup>402</sup> The older population is often able and willing to pay extra for a nice place to live and for extra services. One client participant stated, for example:

*I asked my sons: is it financially possible for me to live here? It was no problem. (...) Then what else can I wish for? (P14)*

##### *Labour market*

The qualitative data highlight an important labour market trend: the relative size of the labour force diminishes while nursing homes need extra healthcare professionals.<sup>401</sup> Respondents from both the for-profit and the non-profit sectors stated that labour shortages are to the relative benefit of for-profit nursing homes. The for-profit business model enables more time with clients, as the additional financial income for services is also used to deploy personnel. Moreover, the PB funding plan liberates for-profit nursing homes from several bureaucratic rules by which nursing homes that rely on traditional in-kind funding plans must abide. Participants from the for-profit sector state that they “avoid the red tape that comes from working with LTC offices” (P10); consequently, more time is available to be with clients. Participants also observe more “hospitality employees” at for-profit nursing homes, such as cooks and hostesses: “attention personnel” (P22) who relieve the work of medical staff. As a result, for-profit nursing homes seem to be more attractive employers and face less difficulty in attracting care professionals.

##### *Financial*

Increasing financial pressure on the Dutch healthcare system seems to have contributed to the growth of for-profit providers. Without cost-cutting, the healthcare budget is forecasted to double in 2040, compared to 2015, crowding out financial sources for other collective goods.<sup>403</sup> The LTC reform of 2015 aimed at bending the increasing cost curve, leading to decreased LTC funding.<sup>125</sup> After a loud public outcry against the austerity cuts to LTC and its consequences (e.g., care-quality scandals, long waiting lists in non-profit homes, and the deteriorating reputation of non-profit nursing homes), LTC received significant extra public funding from 2017 on.<sup>404</sup> “Elderly do not want to go to a traditional [non-profit] nursing home; these homes rightly have a bad name.” (P11). Compared to sectors for domiciliary care and care for the disabled, the nursing home sector has been financially weak.<sup>405</sup> In 2016, 39% of the



nursing homes were loss-making entities.<sup>406</sup> According to the participants, many for-profit firms are less affected by these circumstances, mainly because their revenue model combines private and public funding. Where public funding for care costs (case-mix adjusted annual fees) is tight, the private funding arrangements in the Dutch for-profit nursing home sector allow homes to compensate by increasing fees for real estate and for additional services and amenities.

Another relevant financial trend is the changing access to and costs of financial capital. Due to market-oriented healthcare reforms, non-profit healthcare providers bear more financial risks, which makes banks more reluctant to issue loans.<sup>32</sup> For-profit nursing homes have easier access to capital because they can circumvent the dependency on bank loans – for example, by turning to private equity firms. Private equity firms can inject large sums of money into the for-profit sector, enabling it to expand quickly. Indeed we found that private equity firms are active in the for-profit nursing home sector (Table 5.2.). Once their investments have generated growth in the for-profit providers, private equity firms tend to sell the provider. Three private equity-owned Dutch nursing home chains were sold to international chains, comprising 49 locations in total. In all three cases, they were sold to French healthcare chains (Korian or Orphea). Several respondents expressed their concern about private equity firms' involvement in the for-profit nursing home sector as their focus might be on short-term profit maximisation at the expense of quality. Client rating data tentatively suggests lower scores for private equity firm-owned nursing homes than other for-profit entities (Table 5.4.).

**Table 5.4.** Private equity ownership of nursing homes in 2016; client ratings 2014-2017

	Non-private equity owned nursing home	Private equity owned nursing home
<b>Accommodation</b>	8.84 (0.43)	8.63* (0.31)
<b>Employees</b>	8.91 (0.44)	8.46*** (0.44)
<b>Listening</b>	8.62 (0.50)	8.01*** (0.55)
<b>Information</b>	8.44 (0.55)	7.88*** (0.60)
<b>Recommendation</b>	0.97 (0.04)	0.92** (0.07)
<b>N</b>	19	16

Source: Data adapted from Netherlands Patients Federation (2014–2017)

Standard deviation in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1



Although participants from the for-profit sector mentioned examples of the use of technology (e.g., home automation), technological trends were not mentioned as a main trend that explains the current for-profit sector expansion.

## 5.5. Discussion and Conclusions

This study is, to the best of our knowledge, the first academic study aimed at mapping for-profit nursing homes in the Netherlands and understanding the factors that stimulated their growth. We found substantial recent growth in for-profit nursing homes in the Dutch LTC system. Fifty percent of the currently active for-profit homes were established in the last three years, resulting in a for-profit market share of 12% (measured in the number of nursing home sites). In comparison to their non-profit counterparts, Dutch for-profit nursing homes are more often small-scale and more focused on high-income clients. The for-profit sector consists of both standalone homes and chains, including private equity-owned chains.

An interrelated mix of context variables, sector conditions and broader trends has stimulated for-profit nursing home expansion in the Netherlands. First and foremost, the regulatory context changed. The reforms designed to encourage deinstitutionalisation of elderly care unlocked opportunities for the for-profit nursing home sector. For-profit nursing homes embraced new extramural funding plans that allowed them to circumvent the for-profit ban. In other words, the for-profit sector exploited loopholes in the regulatory framework. We found that the peak of the number of newly established for-profit nursing homes coincided with the implementation of the LTC reform.

In addition, several sector conditions created opportunities for for-profit newcomers in the nursing home sector. A first condition was the inadequate responsiveness of the dominant non-profit nursing home sector. The non-profit sector was unable to respond to the demographically driven increase and change in demands of a new generation of elderly. The for-profit sector provided an alternative to traditional non-profit nursing homes. For-profit nursing homes were able to acquire this role because most of the for-profit nursing homes are newly established organisations, able to design their organisational model from scratch. For-profit nursing homes established a well-being approach that tallied with the wishes of their clientele, whereas non-profit nursing homes were less able to do so. This finding runs contrary to findings in Nordic countries (i.e., Denmark, Finland, Norway, and Sweden), for which a previous study found that traditional nursing homes were able to reform their nursing homes from a medical to a social care model.<sup>389</sup> Tentative analyses find that for-profit providers' focus on well-being resulted in higher client ratings than the non-profit sector.

A second sector condition encouraging for-profit sector growth was the "cream skimming" potential for for-profit nursing. We found that for-profit organisations target a relatively affluent clientele, partly in response to the greater wealth of the

current generation of elderly compared to previous generations. The PB-financed nursing homes are particularly able to reap the benefits of “cream skimming” because they enjoy more freedom to select their clients than the HCP/MCP-funded, for-profit nursing homes.

A third sector condition was the design of a for-profit business model that relies heavily on the wider care system for specialist care by using geriatric specialists seconded from non-profit providers or by relying on GPs. For-profit nursing homes reduce labour costs by utilising the wider healthcare system. This “system utilisation” was not found in literature and therefore adds to our understanding on what factors stimulate the expansion of for-profit providers in mixed markets.

These sector conditions need to be seen in the context of the aforementioned demographic changes, as well as financial and labour market changes. Because of an affluent clientele that pays for additional services and because of their avoidance of red tape in the case of PB-financed care, for-profit nursing homes have more financial leeway to hire “attention staff” and to have a high staff/client ratio. This, in turn, makes for-profit homes more attractive employers relative to non-profit nursing homes. Hence, labour shortages are to the relative benefit of for-profit nursing homes. In addition, an important financial driver for the for-profit providers’ rise was their access to financial capital from private investors (including private equity firms). The money injection by private equity firms fostered the for-profit sector’s growth, whereas non-profit organisations were unable to attract such capital and also faced difficulties in getting bank loans. Furthermore, the financing of for-profit organisations with both public and private funding enabled them to rely less on public funding, shielding them somewhat from austerity measures.

### **5.5.1. Limitations**

Our methods come with some limitations. Firstly, specific case-mix control variables were not available. Our qualitative data indicate that non-profit nursing homes tend to have a heavier case-mix, but this could not be controlled for in our study. Secondly, our view of for-profit nursing homes is limited to homes detected by the Netherlands Patient Federation and the Dutch National Health Care Institute. Since some standalone homes might be unknown to them, there might be a slight underreporting of the number of for-profit homes. Thirdly, a relatively low number of for-profit nursing homes received 15 or more client ratings in the Netherlands Patients Federation dataset. We therefore present these quantitative data as supporting evidence to our qualitative findings. Finally, a large proportion of the participants in our study were working in or affiliated with the for-profit sector, which might lead to a bias in the qualitative data in favour of for-profit nursing homes. Data from the for-profit sector were therefore constantly compared to data from other participants. Results were only included if they were confirmed by participants from different backgrounds (Table 5.1).

### 5.5.2. Implications

The growing for-profit nursing home sector sparks governance questions. Based on the qualitative and quantitative findings, we outline several possible governance implications related to the composition of the market, care quality norms, and accessibility.

For-profit nursing home growth has two interconnected implications for the market composition of the Dutch nursing home sector. The first relates to market consolidation. The four biggest chains in the for-profit sector in the Netherlands already own about 40% of all for-profit nursing homes. Consolidation could have negative consequences for the quality of care: studies on US nursing homes have found that for-profit nursing home chains provide inferior quality of care.<sup>407,408</sup> The second implication relates to private equity firms investing in for-profit nursing homes. In countries such as Sweden, Norway, Canada, the United Kingdom, and the US, private equity firms are active within the nursing home sector.<sup>372,409</sup> Our data show that Dutch nursing home chains are also partly owned by these firms. The consequences are unclear because the international evidence on the quality performance of private equity firms is inconsistent: studies present both indications of lower quality in private equity homes,<sup>407,410</sup> and no harm to quality of care.<sup>411</sup> Our data tentatively suggest that client ratings are lower among private equity-owned nursing homes (Table 5.4.). The changing composition of the Dutch nursing home sector toward for-profit chains and the presence of private equity firms demands close scrutiny with regard to their long-term consequences.

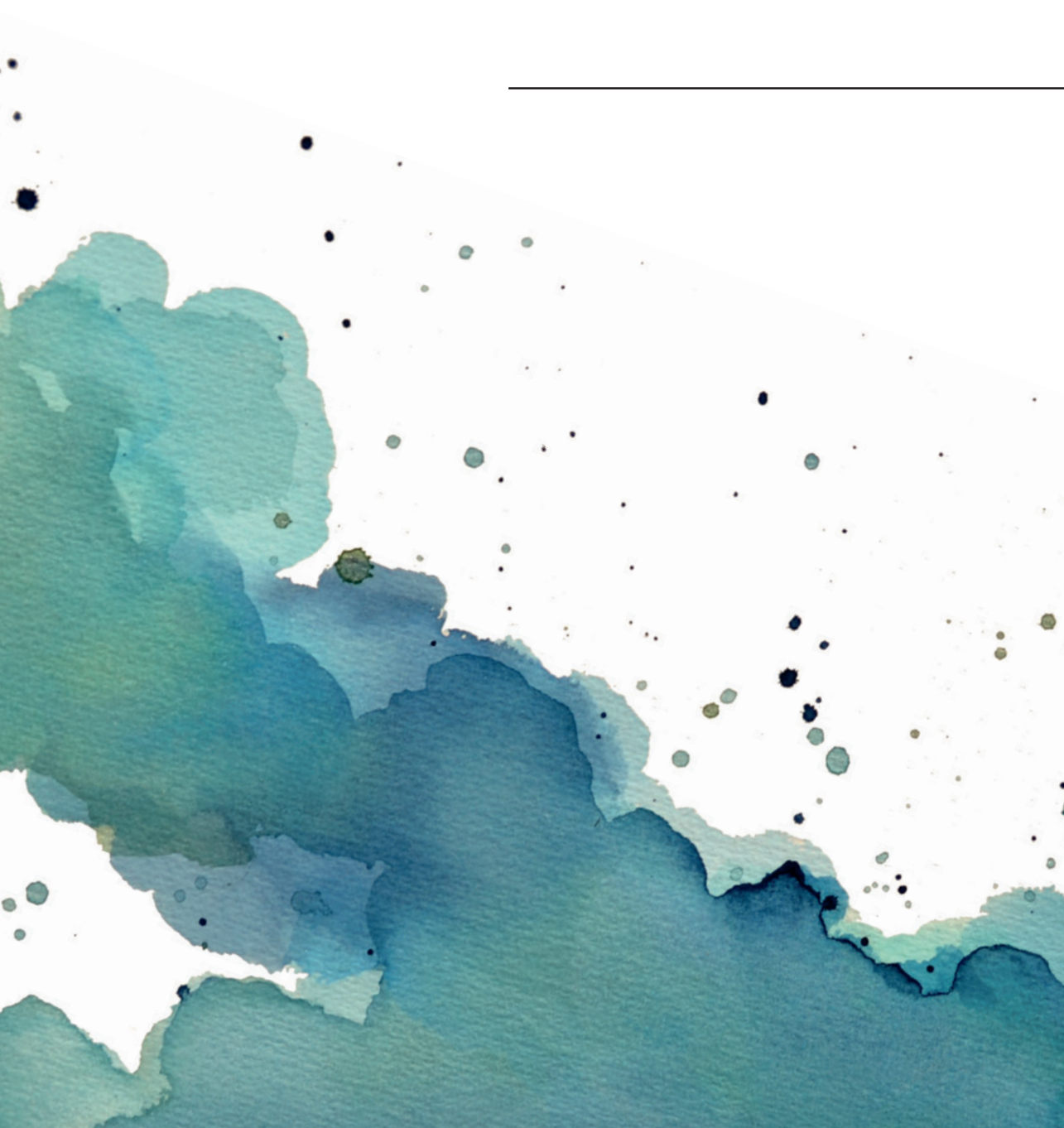
A second and related implication of the presence of the for-profit sector concerns quality norms. We found that for-profit nursing homes seem to score better on client satisfaction rates – in contrast to US findings,<sup>412</sup> but in line with the findings from Sweden.<sup>388</sup> The latter study reported that private nursing homes “seem to focus more on personal service aspects rather than on structural prerequisites for care quality”.<sup>388, p.565</sup> Most literature reviews from the US report lower care quality in for-profit nursing homes than in non-profit homes.<sup>104,112,113</sup> Studies in Nordic countries do not unequivocally support these findings.<sup>371,372</sup> Further research is needed on how for-profit ownership affects care quality in Dutch nursing homes.

Lastly, the presence of the for-profit sector also has implications for the accessibility of the nursing home sector. Although we found some examples of for-profit nursing homes that target low- and middle-income groups, the majority of for-profit nursing homes target high-income elderly. The “cream skimming” behaviour of for-profit providers further perpetuates the polarisation of the nursing home sector. These two factors raise concerns about the general accessibility of the Dutch nursing home system for lower-income groups due to the more limited options available to them and to potential differences in waiting lists.<sup>83</sup>

Although the for-profit sector has possibly eased waiting lists for nursing home care and shaken up the unresponsive traditional LTC market, there are serious governance risks associated with the for-profit sector providing nursing home

services. If the for-profit nursing home sector maintains its low profile, as it has been able to do for most of its existence, the societal implications could be profound and might counter the benefits associated with the for-profit sector.





# Chapter

# 6.

## **Do private hospitals outperform public hospitals regarding efficiency, accessibility and quality of care in the European Union? A literature review**

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## Abstract

European countries have enhanced the scope of private provision within their healthcare systems. Privatising services have been suggested as a means to improve access, quality and efficiency in healthcare. This raises questions about the relative performance of private hospitals compared with public hospitals. Most systematic reviews that scrutinise the performance of the private hospitals originate from the United States. A systematic overview for Europe is non-existing. We fill this gap with a systematic realist review comparing the performance of public hospitals to private hospitals on efficiency, accessibility, and quality of care in the European Union.

This review synthesises evidence from Italy, Germany, the United Kingdom, France, Greece, Austria, Spain and Portugal. Most evidence suggests that public hospitals are at least as efficient as or are more efficient than private hospitals. Accessibility to broader populations is often a matter of concern in private provision: patients with higher socioeconomic backgrounds hold better access to private hospital provision, especially in private parallel systems such as the United Kingdom and Greece. The existing evidence on quality of care is often too diverse to make a conclusive statement.

In conclusion, the growth in private hospital provision seems not related to improvements in performance in Europe. Our evidence further suggests that the private (for-profit) hospital sector seems to react more strongly to (financial) incentives than other provider types. In such cases, policymakers either should very carefully develop adequate incentive structures or be hesitant to accommodate the growth of the private hospital sector.

**Keywords:** efficiency, healthcare quality, health services accessibility, literature review, private sector



## 6.1. Introduction

It is an ongoing debate what the role of the private sector in the healthcare system should be. In theory, under competitive forces and the right preconditions, private hospitals might outperform public providers. However, empirical evidence, mostly originating from the United States (US), does not confirm such hypothesis.<sup>98-100</sup> For example, Schlesinger & Gray (2006) find that although the evidence is mixed, it seems to favour non-profit hospitals.<sup>98</sup> Eggleston et al. (2008) analysing differences in quality of care also find mixed evidence.<sup>61</sup> Herrera et al. (2014) provide an overview of systematic reviews focusing on quality of for-profit, not-for-profit and public providers. Among other things, they concluded that for-profit providers have higher mortality rates.<sup>111</sup> The US studies illustrate that non-profit hospitals seem to mimic FP hospitals on more competitive markets, which might blur the distinctions between both ownership types.<sup>146</sup>

Most European health markets are both less competitive and more inclusive than the US, which may provide private providers with different incentives. In past decades, the high share of public provision spurred discussions about possible inefficiencies, and a movement towards privatisation could be observed across Europe.<sup>85,413</sup> Nowadays, practically all European Union (EU) health systems “contract” both public and private providers. However, EU countries do differ regarding the scale and scope of private hospitals. In most Bismarck-type systems, private hospitals may be on par with public hospitals: public and private providers provide comparable services and are reimbursed in a similar way. To illustrate, in Germany, the private sector, both the for-profit and non-profit sector, run comparatively similar hospitals (i.e. size, type of treatments offered) as public hospitals.<sup>275</sup> Other countries contain more contextual differences between private and public provision. In France, public hospitals mainly provide acute medical care, whereas for-profit hospitals seem to specialise in profitable procedures and outpatient care.<sup>414</sup> In Austria, public hospitals are the dominant players, but the non-profit sector also provides a part of the hospitals services.<sup>415</sup> However, in most Beveridge systems, the private sector runs parallel to the public sector as an alternative provision.<sup>85</sup> The private sector then also is paid through a parallel private funding scheme (i.e., out of pocket payments or private insurance). Greece symbolises a hospital sector with a clear parallel private sector. The private sector in Greece includes profit-making hospitals, diagnostic centres as well as independent practices. The services are mainly privately financed through either out-of-pocket payments or private health insurance.<sup>416</sup> The United Kingdom (UK) also held parallel hospitals system, but over the years an increasing number of private hospitals and independent treatments centres (ITCs) were being commissioned by the National Health Service (NHS).<sup>417</sup> Such systematic differences may influence the composition and performance of private hospitals. Furthermore, countries differ on the extent of privatisation. In some countries, such as the Nordic countries, hospital ownership is predominantly public, while in other countries, such as the Netherlands, public ownership is non-existent.

It is currently unknown whether private hospitals outperform public hospitals in the different European health systems. Reviews on this topic are to the best of our knowledge non-existent. The main aim of this review is to compare the private sector with the public sector on efficiency, quality and accessibility of services within the EU. We are well aware, that the profit status of private hospitals is most likely an important theoretical confounder in explaining differences in performance ever since Kenneth Arrow (1963) pointed to the fact that private non-profit status might function as a way to limit market imperfections in situations of unobservable performance of information asymmetries.<sup>14</sup> However, distinctions between public and private provision are often at least as important as institutional demarcations, as the distinction between for-profit and non-profit hospitals. That is the reason that we focus on the distinction between public and private. However, if indicated in the included studies, we also differentiate our results between for-profit and non-profit private hospitals.

Our review contributes in three ways: (1) to map available literature and to highlight knowledge voids; (2) to identify differences between private and public provisions; and, finally, (3) to find institutional and healthcare system related drivers for differences in efficiency, accessibility, and quality of care.

## 6.2 Methods

### 6.2.1. Definitions

Public hospitals can be either state-owned or fully run by public entities; private ownership can be mission-driven (non-profit) or return driven (for-profit).<sup>128</sup> The term “private” hospitals will be used as an encompassing term throughout this paper, making no distinction between non-profit and for-profit. To compare public and private hospitals, this review will investigate three umbrella outcomes: (1) efficiency, (2) accessibility, and (3) quality of care. Efficiency holds the notion as the extent to which objectives are achieved in relation to the resources consumed.<sup>418</sup> This includes both productivity measures on the basis of frontier analysis and other regression-based approaches, efficiency ratios (e.g., employment ratios) and other efficiency outcomes such as length of stay (LOS) or responsiveness to demand. The most applied productivity methods are the Stochastic Frontier Analysis (SFA) and the Data Envelopment Analysis (DEA).<sup>100,101</sup> Efficiency measures are reflected in multiple indicators such as technical efficiency (maximum output from a given set of inputs or a minimum set of inputs with a given set of outputs), cost efficiency (technical efficiency accounting for the input price), scale efficiency (when the size of the unit is at its optimum), and/or allocative/profit efficiency (cost minimisation or profit maximisation).<sup>96</sup> Accessibility is categorised into financial affordability, physical access, informed access, and timely access (e.g., waiting times).<sup>419</sup> Quality of care is structured along the lines of the Donabedian model of structure, process and outcomes.<sup>420</sup> Some studied indicators, such as LOS, can be classified under different

domains within the Donabedian framework. On the basis of consultations during two expert meetings, such indicators were classified towards the most suitable domain. Another difficulty arises with practice variation. To illustrate, does a high rate of surgical interventions indicate better or poor quality of care? To avoid the complex discussion on practice variation and the ambiguous relationship with quality of care, this review does not look into variation in practices.

### 6.2.2. Realist Review

Our study follows a realist review approach. A realistic review is suited to review interventions that are embedded in complex systems, whereby outcomes are dependent and influenced by their contexts.<sup>421</sup> Rationales and drivers behind the implementation or growth of the private sector are diverse. Because of the peculiar nature of our “intervention”, minor deviations from the realist review protocol were necessary (i.e., no explicit distinction is made between intervention, context and mechanism). This review limits its territory to the EU (28 countries), because the EU countries are, to a certain extent, comparable but have various healthcare systems. The variety of healthcare systems can be used to explore how private hospitals perform within various settings. We strive towards a review that “delivers illumination rather than generalizable truths and contextual fine-tuning rather than standardization”.<sup>421, p.24</sup> Hence, the empirical findings are embedded within descriptive context.

### 6.2.3. Search strategy

The review was conducted from August to October 2015, and updated in June 2017. Data management was done by using Mendeley and Excel. Four databases were searched: Scopus, SocINDEX, Web of Science and EconLit. Grey literature was excluded. The searches in the relevant databases were updated in June 2017. Different search terms were tested before the actual selection of the articles, to reassure the quality and relevance of the included hits. Table 6.1. shows the search terms in a simplified manner; in Appendix 6.A., the complete search string is given.

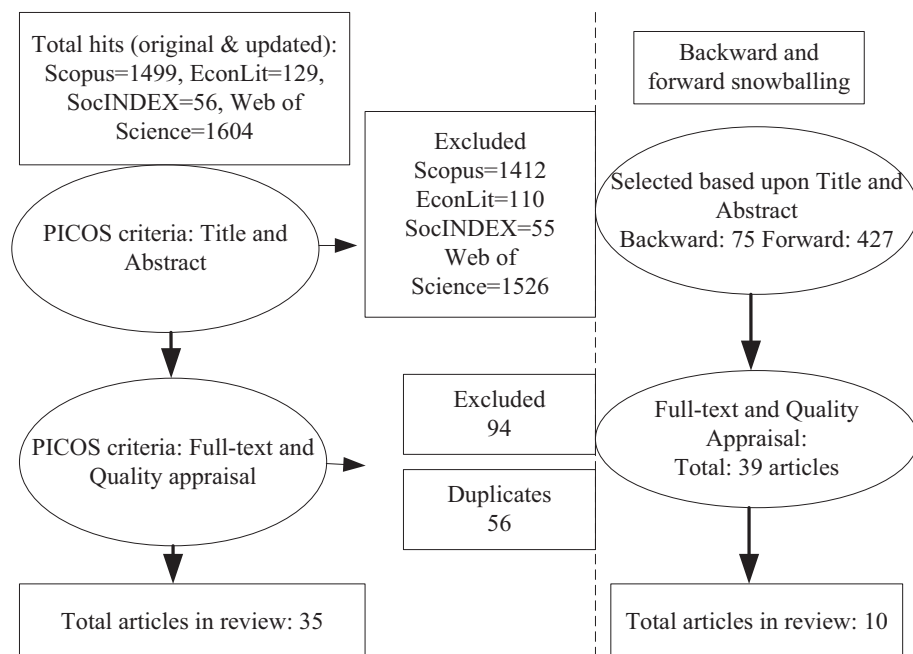
**Table 6.1.** Search terms

<b>Intervention</b>	private hospital OR privatization OR public-private hospital, OR hospital ownership OR for profit hospital	
<b>Outcome</b>	efficiency OR health care quality OR health care accessibility OR hospital admission OR patient admission OR health care delivery OR affordability OR health care utilization OR health care availability	<i>AND NOT:</i> job satisfaction OR Medicare in keywords (for <2008, United states in Keywords)
<b>Inclusion criteria</b>	Journal articles in English after 2000	

#### 6.2.4. Selection criteria

Figure 6.1. shows the flow chart of the review process. Only research after 2000, conducted in the EU and articles written in English, were included. Papers were included by matching them with the five Population, Intervention, Comparison, Outcome and Study Design (PICOS) criteria (Table 6.2.). To safeguard quality and limit selection bias, the full-text and appraisal stage was performed by two reviewers.

**Figure 6.1.** Flow chart of selection process



**Table 6.2.** Inclusion criteria for the second phase

<b>Population</b>	Private hospitals; this could be a non-profit or for-profit hospital. Papers that include private hospitals as a control variable are also considered to be eligible.
<b>Intervention/ exposure</b>	Patients are exposed to the service delivery of private hospitals.
<b>Comparison</b>	A comparison should be made with public hospitals.
<b>Outcome</b>	One of the following three elements should be covered: efficiency, quality of care and accessibility. Articles that only include employment conditions are not taken into consideration.
<b>Study design</b>	Empirical research, no descriptive papers or economic modelling are included.

Articles were assessed using a standard format to appraise the quality of the studies (see Appendix 6.B.). The main criteria for exclusion were as follows: (1) research designs were considered to be (extremely) weak; and (2) poor reporting on the dataset and methodology, or no possibility of a critical appraisal. The two reviewers only included evidence whereby the quality assessment demonstrated that the findings contributed to our research objective (see Appendix 6.C. for excluded references in quality appraisal phase). In total thirty-five articles could be included.

A snowballing procedure was performed in December 2015 and January 2016. Forward snowballing identifies articles that refer to the selected articles in the review. Backward snowballing means that the reference list of the articles was included into the review process. Additionally, the literature selected in other systematic reviews covering the EU was included.<sup>99-101,422,423</sup> Such a snowballing methodology has been assessed as a successful addition to the systematic review by advocates of realist reviews.<sup>421</sup> Articles conceived to be useful upon the PICOS criteria went through the same inclusion process. In total, another ten articles could be included, bringing the total number of studies to forty-five.

## 6.3. Results

The selected articles are shown in summary tables in Appendix 6.D. Thirteen articles originate from Italy, eight from Germany, seven from the UK, six from France, five from Greece, three from Austria, two from Spain, and one from Portugal. While in Germany, Italy, France, and Austria most private hospitals act as a substitute for public hospitals, in the UK, Portugal, Spain, and Greece, most private hospitals do complement the public system.

### 6.3.1. Efficiency

We found twelve articles using productivity functions assessing primarily technical efficiency, three studies analysing profit and/or cost efficiency, and ten articles reflecting other efficiency measures (e.g., LOS). The evidence on technical efficiency shows no unambiguous conclusion can be made that for-profit and non-profit hospitals are more (cost and/or technical) efficient than public hospitals, although public hospitals seem to be just as efficient as or more efficient than private hospitals. The findings on the other efficiency measures indicate that private hospitals seem to be more responsive to (financial) incentives.

#### *Productivity functions*

The studies that estimated technical and/or cost efficiency use a DEA<sup>266,424-426</sup> or a SFA model.<sup>427-431</sup> Other studies contrast multiple approaches, SFA versus DEA.<sup>432-434</sup> The (adjusted) discharged patients<sup>427,433</sup> and the number of inpatient (weighted) cases were most often used as output parameters.<sup>266,425,428,429,434</sup> Diagnosis-related groups (DRGs),<sup>424,426</sup> outpatient visits,<sup>424</sup> and differentiation of specific procedures

(e.g., number of complex surgery and emergency room treatments)<sup>431,433</sup> were used less frequently. Regarding input factors, most studies used the number of beds as a proxy for capital investments; one study used the amount spent on supplies as measurement of the capital used.<sup>425</sup> To identify labour inputs, all studies incorporate the number of full-time equivalents (FTE) of physicians, nurses and other staff members (e.g., administrative, non-clinicians, and teaching staff); one study could not include FTE, but only the number of staff members because of data limitations.<sup>431</sup>

Only the results on technical efficiency are grouped in Table 6.3., since this was the dominant outcome and enhances comparability. The findings show mixed results, but do indicate more favourable results for public hospitals. Four German studies found that public hospitals were more efficient than for-profit hospitals.<sup>266,432,434</sup> One possible explanation is that local governments sell the inefficient hospitals to the private sector.<sup>432</sup> Also, German for-profit hospitals with over a thousand beds were found to operate more efficiently.<sup>266</sup> In Italy, one study found that for-profit hospitals (Lazio Regio) were less technical efficient than public hospitals.<sup>431</sup> When comparing non-profit hospitals and public hospitals, the different methodologies and years covered offered divergent results.<sup>431</sup> Three studies also concluded that non-profit hospitals were less efficient in Germany.<sup>266,428,434</sup> Berta et al. (2010) reveal that Italian for-profit hospitals are less efficient than their public/non-profit counterparts, but over time have converged towards the same efficiency level as other types.<sup>427</sup> Similar converging results were found in Germany.<sup>429</sup> Non-profit hospitals in Germany and Italy also show convergent efficiency scores according to a total of four studies.<sup>425-427,433</sup> Two studies, from Austria and Germany, reasoned that private providers are more efficient than public hospitals.<sup>424,425</sup> The German study analysed the process of privatisation, whereby hospitals that converted to for-profit status also increased their efficiency. This indicates that a longitudinal design might show different results than cross-sectional designs. Hospitals that converted to non-profit status initially also show increases in efficiency; however, these diminish over time.<sup>425</sup> In the case of Portugal, one study concludes that private hospitals were more cost efficient than their public counterparts.<sup>430</sup> Using a different methodology – non-oriented super efficiency and different sample selections – no difference in efficiency was found.<sup>426</sup>

The overarching message in most studies might actually be the fact that reimbursement schemes are of importance. In Italy, for-profit hospitals were found to be less efficient because they use resources less efficiently. This might be due to the fact that private for-profit hospitals are confronted with specific regulations that set a limit to the number of funded admissions; since such limits fluctuate over time and are quite volatile, for-profit hospitals might face problems to adjust fixed input resources accordingly.<sup>431</sup> Another indication of the importance of funding schemes might be the fact that after a DRG-based payment system had been introduced in Italy, non-profit hospitals converged to the same levels of technical efficiency as public hospitals.<sup>433</sup> In Germany, Herr et al. (2011) also found no statistically significant differences in technical efficiency between for-profit and public hospitals after a

DRG-based payment system had been introduced in 2004.<sup>429</sup> Earlier, Herr (2008) showed that private hospitals were on average less cost and technical efficient, maybe because of the fact that in that timeframe, there existed an incentive to increase LOS to raise revenues.<sup>428</sup> Nonetheless, for-profit hospitals were found to be more profit efficient than public hospitals, meaning that hospitals have certain output prices and input prices, and for-profit hospitals choose the best combination of both input and output factors.<sup>429</sup> However, another study discovered that under the DRG payment system, efficiency gains among for-profit-privatised hospitals were significantly lower compared with before the DRG payment system.<sup>425</sup> The Austrian DRG system only covers up to 50% of hospital costs, and additional funds come from states and operational-deficit coverage, determined ex post by the local authorities. Such funds disproportionately accrue to public providers placing the private sector at bay, but possibly also increasing their incentives to operate more cost conscious.<sup>424</sup>

**Table 6.3.** Overview technical efficiency of private hospitals compared to public hospitals

	Less efficient	No difference	More efficient
<b>For-profit</b>	5 studies from Germany & Italy find private for-profit hospitals less efficient than public hospitals <sup>266,428,431,432,434</sup>	2 studies from Germany & Italy find no difference between private for-profit and public hospitals <sup>427,429</sup>	1 study from Germany finds private (for-profit) hospitals to be more efficient than public hospitals <sup>425</sup>
<b>Non-profit</b>	3 studies from Germany find private non-profit hospitals to be less efficient than public <sup>266,428,434</sup>	4 studies from Germany & Italy find no difference between private (non-profit) and public hospitals <sup>425-427,433</sup>	1 study from Austria finds private (non-profit) hospitals to be more efficient than public hospitals <sup>424</sup>

#### *Other efficiency outcomes*

A subset of studies use other outcomes to assess the efficiency of hospital providers. Multiple studies analyse the relationship between ownership and LOS (Table 6.4.). A short LOS is seen as an indicator of superior efficiency. French private hospitals have longer LOS for knee procedures, but shorter LOS for hip procedures.<sup>435</sup> For most diagnostic groups, there exists no difference in LOS between UK public hospitals and private ITCs, although for some treatments, particularly hip and knee procedures, a longer LOS was found for National Health Service (NHS) hospitals.<sup>119</sup> Another study using the same dataset as the former study supports the latter findings, whereby LOS in ITCs is shorter than in public hospitals for hip replacements.<sup>436</sup> Evidence from Italy reports shorter LOS in private hospitals for aortic valve substitution.<sup>437</sup> However, LOS was found to be longer in Italian private psychiatric hospitals.<sup>438</sup> The authors explain this by private psychiatric hospitals being funded on a per diem basis, creating



incentives to increase LOS. Indeed, in Greece, LOS was also higher in private mental health clinics.<sup>439</sup> This alludes to the assumption that for-profit providers seem to apply more revenue-maximising strategies. Overall, per diem funding structures – as in mental health – seem to increase LOS among private providers, while prospective structures as in acute care seem to create an opposing effect. Both underline the idea that the private providers respond more intensely to incentives than public hospitals. This is tested in a more head-to-head approach by Schwierz (2011).<sup>95</sup> The author identifies that the introduction of a new payment system in 2014 pushed for economic discipline and penalised high-cost hospitals, creating incentives for German private hospitals to take over public hospitals.<sup>95</sup> In general, for-profit hospitals were also found to respond faster to increasing demand than other ownership types. Public hospitals were more likely to default; therefore, privatisation became an appealing option.<sup>95</sup> Another study, also conducted in Germany, analyses changes in hospital staff after privatisation. This study discovers that for-profit privatisation reduced staff per inpatient case (especially nurses, other non-physician clinical staff, and other non-clinical staff). Such findings were not found when non-profit hospitals were the acquiring party.<sup>144</sup> Similar finding was found in Greece; for-profit hospitals seem to have lower nursing staff rates for nurses compared with the public hospitals.<sup>439</sup>

Finally, two studies addressed upcoding. In Italy, Vittadini et al. (2012) looked at registering patients with non-existing complications to increase reimbursement.<sup>440</sup> There was evidence that both non-profit and for-profit hospitals were to some extent engaged in “upcoding” before a specific law against upcoding in 2007 was institutionalised. No such evidence was found for public hospitals.<sup>440</sup> Berta et al. (2010) also found that during 2003-2005, for-profit hospitals had more intense upcoding practices than other hospital types.<sup>427</sup> However, no ownership differences were found after 2005, probably because of more severe checks implemented after 2003.<sup>427</sup>

### **6.3.2. Accessibility**

Included articles examine eleven different indicators of accessibility (Table 6.5). Most included studies do raise concerns about accessibility to private hospitals; most of them flag this issue by analysing the complexity of the cases and various patients’ characteristics. In many countries, private providers do target higher socioeconomic classes (SES), often through parallel private insurance. High-income patients hold better access to private hospitals, and that waiting times in the private sector are lower.



Table 6.4. Other efficiency measures

Outcome/ indicator	Number of studies	Type (private)	Countries	Impact
Length of stay	3	Aortic valve substitution, hip and knee procedures in private hospitals or ITCs	Italy, UK, France	Private hospitals have shorter LOS
	3	Private (i.e. psychiatric hospitals, mental health clinics) hospitals and specifically for knee procedures	Italy, Greece, France	Private hospitals have longer LOS
	1	ITCs (for most diagnostic groups)	United Kingdom	No difference
Responsiveness to demand	1	For-profit	Germany	Private hospitals are more responsive
Employment	1	Non-profit	Germany	No difference
	2	For-profit	Germany, Greece	Private hospitals have lower staff rate
Upcoding	1	Non-profit and for-profit	Italy	Private hospitals have more upcoding
	1	Non-profit and for-profit	Italy	No difference

Abbreviations: ITCs: Independent treatment centres | LOS: Length of stay | UK: United Kingdom

**Table 6.5.** Accessibility indicators overview

Concept	Number of studies	Outcome/indicator	Type (private)	Countries	Impact
<b>Affordable</b>	8	SES of patients (e.g., employment status, residents from deprived versus affluent region)	Private (i.e., maternity, psychiatric), ITCs	Italy, UK, Greece, Spain	
	2	Method of payment (i.e., private health insurance and pay out-of-pocket)	Private	Greece	
	1	Payment per discharge	For-profit	Greece	
<b>Physical</b>	3	Case-mix differences (e.g. cream skimming)	For-profit, ITCs	Italy, UK	Public hospitals perform better
	1	Access to specialty care (i.e. adjusted rates of revascularisation)	Private	France	
	1	Admission pattern	Private psychiatric	Italy	
	1	Access to pre-emptive registration	For-profit	France	
	1	Regional physical mobility (number of non-resident patients in the region admitted)	Private	Italy	
<b>Physical</b>	1	Mean expenditure and usage of drugs	For-profit	France	No difference
<b>Affordable</b>	1	Access to specialty care (i.e. ambulatory care services)	Private	France	
	1	Method of payment (i.e. informal payment)	Private	Greece	Private hospitals perform better
<b>Physical</b>	1	Chance of follow-up treatment	Private psychiatric	Italy	
<b>Timely</b>	1	Waiting times	Private	UK	

Abbreviations: ITCs: Independent treatment centres | SES: socioeconomic status | UK: United Kingdom

*Affordable access*

In the UK, patients of private ITCs are less likely to come from deprived residential areas.<sup>119,441</sup> One other study concludes that patients in private hospitals diagnosed with prostate cancer come from the more affluent regions.<sup>442</sup> In Greece, monthly family income is positively related to private hospital admissions.<sup>443-445</sup> In addition, both patients with private health insurance and rural residents are more likely to use private care services.<sup>445</sup> Under comparable circumstances, for-profit hospitals generally charge more for admitted patients falling under the Greek Social Health Insurance fund.<sup>439</sup> In Greece, more private patients had to pay out-of-pocket payments than in public hospitals. On the other hand, and maybe remarkably, “under-the-table” payments were lower in private hospitals.<sup>446</sup>

In Spain, private maternity units/hospitals proportionally treat more patients from higher SES backgrounds.<sup>447,448</sup> In private hospitals, the prevalence of caesarean sections was also higher among immigrants in comparison with natives; no such distinctions were found within public hospitals.<sup>448</sup> In Italy, patient characteristics differ between private and public (psychiatric) hospitals. Older patients are less likely to be unemployed and make more use of private services.<sup>449</sup>

*Physical access*

Private hospitals are often accused of cream skimming and selecting more profitable patients. We found some illustrations to that suspicion. One Italian study argues that for-profit hospitals were more involved in cream skimming than both public or non-profit hospitals.<sup>427</sup> In the UK, ITCs treat less complex NHS patients.<sup>119,441</sup> In France, a higher percentage of patients with ambulatory care sensitive conditions visit public hospitals in comparison with private hospitals, while the opposite appears for revascularisation. The explanation is that in France, public and non-profit hospitals account for most acute inpatient stays and for-profit hospitals provide half the total revascularisations procedures.<sup>450</sup> Regarding a specific case from Italy, Preti et al (2010) detected that private psychiatric facilities were less likely to admit patients who attempted suicide prior to admission; this might serve as an indicator that high-risk mental health patients are less able to access private services.<sup>451</sup> Patients in private acute psychiatric inpatient clinics were also more likely to receive a follow-up treatment (i.e., rehabilitation and psychotherapy).<sup>449</sup> Bonastre et al. (2014) identified that in France no significant differences exist between public and private hospitals in relation to the use of expensive drugs (anticancer drugs), after controlling for case-mix.<sup>452</sup> One French study investigated if hospital types differed in terms of access to renal (kidney) transplantation. The authors observe that for-profit hospitals were less likely to have patients on the pre-emptive registration list than (public) academic hospitals, corrected for case-mix differences.<sup>453</sup> Pre-emptive transplantation is associated with longer patient survival. Hence, patients in for-profit hospitals might be disadvantaged in access to such treatments. Regarding regional mobility, a study from Italy found that non-resident patients are more likely to be admitted to

private hospitals compared with public hospitals when they could not gain access to care in their own region.<sup>437</sup> The authors point out that this is of concern, since patients with financial resources can afford to be more mobile.<sup>437</sup>

#### *Timely access*

In the UK, shorter inpatient waiting times are associated with higher rates of private hospital beds.<sup>454</sup>

### 6.3.3. Quality of care

Quality of care encompasses many different aspects of healthcare. This is also reflected in the variety of outcome variables found in this review (Table 6.6). The quality of care studies are structured according to the Donabedian model of structure, process, and outcomes<sup>420</sup> and show mixed results.

**Table 6.6.** Quality of care indicators overview

Concept	Number of studies	Outcome/indicator	Type (private)	Country	Impact
<b>Structure</b>	1	Continuity of care	Private psychiatric clinics	Italy	Public hospitals perform better
	1	Qualification staff	For-profit	Greece	
<b>Process</b>	2	Adherence guideline and screening	Private	Austria, Italy	perform better
	1	Appropriate admission	Private	Italy	
<b>Outcome</b>	2	Mortality rate (avoidable mortality)	For-profit, private	France, Italy	Public hospitals perform better
	1	Rehospitalisation rates	Private	France	
	1	Patient's experiences	ITCs	UK	No difference
	3	Mortality (risk of dying)	Private hospitals, non-profit & for-profit	Germany, Italy	Private hospitals perform better
	1	Readmission (likely to be readmitted in 30 days)	Private hospitals	Italy	
	1	Patients experience (regarding amenities)	ITCs	UK	

Abbreviations: ITCs: Independent treatment centres | UK: United Kingdom

### *Structure*

Kondilis et al. (2011) find that for-profit hospitals in Greece seem to have less-qualified personnel compared with public hospitals.<sup>439</sup> One of the possible explanations given by the authors is that for-profit hospitals might maximise profits and therefore minimise expenses on nursing staff. Another possible explanation is that for-profit hospitals use nursing staff more efficiently than public facilities. In Italy, private psychiatric clinics collaborated less intensely with the community system as public psychiatric departments do.<sup>449</sup>

### *Process*

From discharge data extracted from Emilia-Romagna hospitals, the appropriateness of admission was evaluated. Although the number of inappropriate admissions decreased between 2001 and 2005, private hospitals exhibit in all years more inappropriate admissions than public hospitals.<sup>455</sup> Private hospitals are also showing less adherence to antenatal screening among pregnant women in six Italian regions.<sup>456</sup> A study on Austrian hospitals shows that adherence to the guidelines for colorectal cancer screening was worse among private hospitals. After the implementation of a guideline for colorectal screening, only 3.8% of private hospitals changed their routine practice versus 14.2% of public hospitals.<sup>457</sup>

### *Outcomes*

In Germany, Tiemann & Schreyögg (2009) analysed hospital mortality rates. They found that, controlling for case-mix differences, for-profit and non-profit hospitals showed better mortality figures than the public sector. One of the potential explanations for this finding might be that publicly enforced transparency on quality indicators seems to have stimulated for-profit hospitals to put comparatively more emphasis on such issues.<sup>266</sup>

France was the country where the two included studies on quality outcomes indicated a consistently worse performance for the private sector. Mortality rates for patients aged over thirty-five and admitted for heart attacks were found to differ among hospital types. Public (non-teaching) hospitals have lower mortality rates than for-profit hospitals.<sup>458</sup> Rehospitalisation rates, a possible indicator for worse quality, differ as well between French hospitals. Private hospitals have higher rates of 30-day all-cause rehospitalisations of older patients than public providers.<sup>459</sup>

In Italy, regional degrees of privatisation (1993-2003) are used as a quasi-experimental design to investigate the association between public and private hospital spending on (the reduction of) avoidable mortality. Spending increases on public delivery of healthcare services was associated with increased reduction in avoidable mortality. However, no such positive effects were found with respect to spending increases on private healthcare services. This implies that increases of spending on private healthcare services might hamper the possible reduction in avoidable mortality by investments in the public sector.<sup>460</sup> Contrary results indicate

that patients in private hospitals are less likely to be readmitted and less likely to die within thirty days after discharge, although the impact of the latter was found to be much lower.<sup>461</sup> This corresponds to the results of a multi-level analysis, also from Italy, which assessed that the risk of dying was significantly less in private hospitals.<sup>462</sup>

Both Pérotin (2013) and Owusu-Frimpong (2010) examine UK patient experiences.<sup>463</sup> The latter study finds that users of ITCs have higher satisfaction rates, than the users of public facilities for amenities, for instance obtaining attention from doctors.<sup>464</sup> However, Pérotin did not find a significant difference on the reported overall patient experiences between public and private clinics. Differences that were found seemed to relate to other variables such as patient characteristics.<sup>465</sup>

## 6.4. Discussion

This review points to various messages. Findings on efficiency show mixed results, but do suggest that the public sector is at least as or more efficient as the private sector. Many papers mention that the institutional context might be an important constraint for the efficiency for the private sector. For example, Austrian non-profit hospitals seem to be “induced” to operate with high levels of operational efficiency. There exists quite some evidence that the private sector seems more sensitive to incentives than the public sector. This was shown for a range of indicators such as responding to changes in demand, upcoding, or adjusting LOS. Differences in LOS seem to depend on type of treatment, whereby consistent evidence shows the private sector has shorter LOS for hip procedures compared with the public sector and type of payment: per diem funding increases LOS in private settings more than in public surroundings, especially for mental health.

As expected, in South European countries and also in the UK where a parallel and partly duplicate system exists between private and public provisions, the private sector is used by the more affluent population, who may experience, for example, lower waiting times and better amenities. This suggests that universal access and a broader inclusion of private providers in the mainstream health system might be an important option to reduce such disparities in access. The same goes for cream-skimming, which, although higher in private hospitals, might be prevented by sophisticated case-mix corrections in the payment structures.

Private hospitals may perform better on observable quality outcomes such as mortality and readmissions in Germany and Italy. In France, private hospitals specialise in certain (elective) procedures. One might expect better outcomes for private hospitals as a result of such specialisations, but in France, the findings predominantly seem to favour public hospitals. This casts doubt on the advantages of private hospital specialisation.

#### 6.4.1. Limitations

This realist review analyses a complex and context-dependent issue and thus is subject to various limitations. Included studies used a wide range of indicators; research designs vary substantially. This makes it somewhat problematic to extrapolate or generalize these findings. Many findings relate to specific diseases and/or indicators implying they do not necessarily hold for a broader spectrum of diseases. Studies covering efficiency showed more consistency among their use of parameters and methodology. We were also able to only include studies from a limited number of EU countries. Most evidence compromises a few countries: Italy, Germany, France, the UK, and Greece. However, these five countries do cover for a substantial part of the total EU population and – more importantly – cover for most healthcare system types (tax-funded or social insurance, multiple payer and single payer, and decentralised and more centralised). Including articles not written in English could broaden the scope of this research. Furthermore, transferability of our results from one country to another is a difficult and complex task.<sup>465</sup> The performance of different types of hospital ownership may be highly dependent on their embeddedness in health system ecosystems. Schlesinger and Gray (2006) mention a valid criticism when stating that “much apparent inconsistencies in the effect of ownership emerge when scholars carelessly combine findings based on different health services or performance measures”.<sup>98, p.289</sup> Indeed, private hospitals may compete, specialise, or complement public providers, which could partly explain conflicting outcomes. A more thorough understanding of the position of the private sector in the wider health system could aid policymakers in designing sound and evidence-based policies in this area.

#### 6.5. Conclusion

We reviewed forty-five studies on the performance of the private hospital sector in EU countries. To our knowledge, this to date is by far the largest review on this issue in EU countries. We sought to fill this gap in the literature. We provide policymakers with several take-away messages. Firstly, the private hospital sector consists of many complex layers. Both a polarising political debate and traditional economic reasoning towards the superiority of a free or (loosely) regulated market also in healthcare do not suit the complexity of the issue. Secondly, our evidence shows that one should take a careful note to the incentives built into the healthcare systems, because they seem to be an important driver for either the divergence or convergence of the private and public sector. For-profit providers seem to respond more intensely to incentives, which may produce undesirable policy effects if the incentive structure is not well designed. Fine-tuning such structure, e.g., hospital payment systems, becomes even more important if the role of the private sector increases. It is not clear if all countries hold the steering powers to fulfil for such preconditions. Thirdly, despite popular opinion that enhancing the role of the private sector increases efficiency,

we do not find a lot of evidence that supports this claim. Most evidence shows that public hospitals are as efficient as or more efficient than private counterparts. For Beveridge countries, we found that access to private hospitals is substantially worse for patients with either low incomes or a more complex case-mix. Finally, this review highlights that policy “shopping” among research results, although possible for this subject, is dangerous. The evidence on private sector performance should be critically assessed; research designs (i.e., indicator specification, methodology and sample selection) do cause divergent results between studies. Our assessment is that the supposed superior performance of the private sector – and especially the private non-profit hospital sector – for Beveridge countries depends on full inclusion in the health system to guarantee broader access to the private sector; for all countries, it is then important to design incentive structures that minimise the opportunities for opportunistic behaviour and for quality of care includes transparency.

Overall, this review could contribute to the discussion on the role of the private sector in providing hospital services in the EU and how different systems, institutions, and incentive structures might affect the public and private hospital sectors.



## 6.6. Appendix

### Appendix 6.A. Search string

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Scopus

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Before 2008

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#### Search in Title, Abstract and Key

Block 1: ( private -within 2 words- hospital ) AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words- access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

OR

Block 2: hospital AND privatization AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words- access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

OR

Block 3: "public private\*" -within 3 words- hospital ) AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words- access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

OR

Block 4

"hospital ownership" AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

Block 5

"for profit hospital" AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words- access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

And no Keywords "Medicare" OR "US" OR "United States"

Limit to Journal, Article, English

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After 2008

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**Search in Title, Abstract and Key**

Block 1: ( private -within 2 words- hospital ) AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words- access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

OR

Block 2: hospital AND privatization AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words- access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

OR

Block 3: "public private\*" -within 3 words- hospital ) AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words- access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

OR

Block 4

"hospital ownership" AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

Block 5

"for profit hospital" AND efficiency OR "health care quality" OR "quality of health care" OR ( health care -within 3 words- access\* ) OR "hospital admission" OR "patient admission" OR afford\* OR "health care -within 3 words- delivery" OR "health care utilization" OR "health care availability" AND NOT "job satisfaction"

And no Keywords "Medicare"

Limit to Journal, Article, English

Search string: EconLit & SocINDEX	
Search Terms (AB "private w/2 hospital" OR AB ( privatization AND hospital ) OR AB "hospital ownership" OR AB "for profit hospitals" OR AB "public private w/3 hospital" OR AB "PPP w/3 hospital") OR (SU ( "private w/2 hospital" OR ( privatization AND hospital ) OR "hospital ownership" OR "for profit hospitals" OR "public private w/3 hospital" OR AB"PPP w/3 hospital" )	Search Options Published Date: 20000101-20151231 Source types <b>Academic Journals and English</b>
Search string: Web of Science	

TS="private hospital" OR TS=(privatization AND hospital) OR TS="hospital ownership" OR TS="for profit hospital" OR TS="non profit hospital" OR TS=("public private" AND hospital) OR TS=(PPP AND hospital)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article)	Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=2000-2017
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### Appendix 6.B. Quality Appraisal form

Component Ratings of Study:	Score	Justification/ Comments
Strong=3 / Modest=2/ Weak=1		
A) DESIGN		
Outcome of interest as main (3) or control variable (2/1)?		
Cross-sectional (2/1) or longitudinal (3)		
Prospective (3) or retrospective (2/1)		
Is the method of analysis appropriate? (Strong, modest, weak)		
Is the method of analysis sufficiently rigorous? (Strong, modest, weak)		
B) Quality of reporting		
Enough data have been presented to show how the authors arrived at their findings (Strong, Modest, Weak)		
Enough information is given what the methodological design is? (Strong, Modest, Weak)		
Enough information is given where the data comes from and what the characteristics are of the sample (i.e. summary statistics and sample sizes). (Strong, Modest, Weak)		
C) Selection bias		
Strong: The selected individuals/hospitals are very likely to be representative of the target population		
Moderate: The selected individuals/hospitals are at least somewhat likely to be representative of the target population		

Weak: The selected individuals/hospitals are not likely to be representative of the target population		
D) Confounders (i.e. region, demographics)		
Strong: will be assigned to those articles that controlled for most relevant confounders		
Moderate: will be given to those studies that controlled for relevant confounders, but explicitly mentions that it missed some relevant confounders		
Weak: will be assigned when the relevant confounders were not controlled for (for instance, ANOVA)		
E) Data collection methods		
Strong: The data collection tools have been shown to be valid; and the data collection tools have been shown to be reliable		
Moderate: The data collection tools have been shown to be valid ; and the data collection tools have not been shown to be reliable or reliability is not described .		
Weak: The data collection tools have not been shown to be valid or both reliability and validity are not described.		
F) Outcome variable		
<i>The choice of measurement of the outcome variable (accessibility, quality of care efficiency) is valid?</i>		
Strong: Clear connection with one of the three concepts, and/or is generally accepted by scholars (e.g. DEA)		
Moderate: a couple of validity issues arise. The connection between the outcome variable and the concepts of interest is moderate (e.g. only one disease is analysed)		
Weak: serious concerns about how the outcome variable (one of the 3 concepts) is measured		
G) Number of hospitals		
Strong: more than 10 hospitals are included in the analysis		
Moderate: between 3 and 10 hospitals are included in the analysis		
Weak: only 2 hospitals are compared		
H) Context		
Strong: Includes many different contexts/regions, high complexity in demographic characteristics		

Moderate: Combines 2 or 3 different regions		
Weak: One very specific region with specific characteristics		
J) Independence		
Is this an independent study? Yes (3) Debatable (2) No (1)		
K) Drop-outs- Only if applicable		
Strong: (If applicable: will be assigned when the follow-up rate is 80% or greater).		
Moderate (If applicable: will be assigned when the follow-up rate is 60 – 79%).		
Weak: (If applicable: will be assigned when a follow-up rate is less than 60% or if the withdrawals and drop-outs were not described).		
	Total score	
Additional comments		Answers to comments
Do the results seem to be valid?		
Do the results seem to be reliable?		
Are the results relevant? Does it fall within the scope of our research question?		
Can the results be generalised?		
	In or out	If needed: justification
Final judgment made based on the score and the additional comments		

### Appendix 6.C.

#### Excluded after quality appraisal

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Appendix 6.D. Summary of findings table (Alphabetic order): Efficiency

Indicator	Methodology	Reliability results	Generalizability results	Year(s) covered	Type (private)	Country
Barbetta et al. (2007)	COLS, SFA and DEA	Strong	Strong	1995-2000	NFP	Italy
Barros et al. (2013)	SFA	Moderate	Moderate	1997-2008	NS	Portugal
Czyptionka et al. (2014)	Two stage DEA	Strong	Strong	2010	NFP	Austria
Daidone and D'Amico (2009)	SFA	Strong	Moderate	2000-2005	FP + NFP	Italy
Gigantesco et al. (2009)	Logistic Regression	Weak	Strong	2002-2003	Psych.	Italy
Tiemann and Schreyögg (2012)	Two stage DEA and Diff-in-Diff	Strong	Strong	1996-2008	FP + NFP	Germany
Heimeshoff et al. (2014).	Employment reduction Diff-in-Diff and FE	Strong	Strong	1996-2008	FP + NFP	Germany
Herr (2008)	Technical and cost SFA	Strong	Strong	2000-2003	FP + NFP	Germany
Herr et al. (2011)	Technical, cost and profit SFA	Strong	Strong	2002-2006	FP	Germany
Herwartz & Strumann (2012)	Technical Two stage DEA + SFA	Strong	Strong	1995-2008	FP + NFP	Germany

COLS=Corrected Ordinary Least Squares; DEA=Data Envelopment Analysis; Diff-in-Diff=Difference-in-Difference; FE=Fixed Effects; FP=For-Profit; LOS=Length of Stay; NFP=Not-For-Profit; NS=Not Specified; Psych.=Psychiatric; SFA=Stochastic Frontier Analysis;

Appendix 6.D. Summary of findings table (alphabetic order): Efficiency (continued)

Indicator	Methodology	Reliability results	Generalizability results	Year(s) covered	Type (private)	Country
Lindlbauer and Schreyögg (2014)	Two stage DEA and SFA	Strong	Strong	2000-2010	FP + NFP	Germany
Maravic & Landais (2006).	Linear regression	Weak	Weak	2001	NS	France
Schwierz (2011)	IVs + FE	Strong	Strong	1996-2006	FP + NFP	Germany
Siciliani et al. (2013)	Quantile regression	Moderate	Weak	2006-2007	NS	UK
Sommersguter-Reichmann & Stepan (2015).	Super efficiency DEA	Strong	Strong	2009-2012	NFP	Austria
Vittadini et al. (2012)	Diff-in-Diff and FE	Strong	Moderate	2007-2008	FP + NFP	Italy

COLS=Corrected Ordinary Least Squares; DEA=Data Envelopment Analysis; Diff-in-Diff=Difference-in-Difference; FE=Fixed Effects; FP=For-Profit; IVs=Instrumental Variables; LOS=Length of Stay; NFP=Not-For-Profit; NS=Not Specified; SFA=Stochastic Frontier Analysis; UK=United Kingdom



Appendix 6.D. Summary of findings table (alphabetic order): Accessibility

Indicator	Methodology	Reliability results	Generalizability results	Year(s) covered	Type (private)	Country
<b>Barbieri et al. (2012)</b>	Utilization by SES	Moderate	Weak	1998-2006	ISTC	UK
<b>Biro &amp; Hellowell (2016)</b>	Waiting times	Moderate	Strong	2000-2001 & 2008-2009	ISTC	UK
<b>Bonastre et al. (2014)</b>	Mean expenditure and usage chemotherapy	Strong	Strong	2008	FP	France
<b>Gusmano et al. (2014)</b>	Avoidable hospitalization	Strong	Strong	2004-2008	NS	France
<b>Mason et al. (2010)</b>	Patient complexity	Moderate	Low	2005-2006 & 2006-2007	ITC	UK
<b>Pappa et al. (2006)</b>	Utilization by SES	Moderate	Low	2003	NS	Greece
<b>Preti et al. (2010)</b>	Admission after suicide	Moderate	Low	2004	Psych.	Italy
<b>Riffaut et al. (2015)</b>	Access to pre-emptive registration on the waiting list for renal transplantation	Strong	Low	2008-2012	FP	France

FP=For-Profit; HRG=Healthcare Resource Groups; ITC=Independent Treatment Centres; NFP=Not-For-Profit; NS=Not Specified; Psych.=Psychiatric; SES=Socioeconomic status; UK=United Kingdom

Appendix 6.D. Summary of findings table (alphabetic order): Accessibility (continued)

Indicator	Methodology	Reliability results	Generalizability results	Year(s) covered	Type (private)	Country
<b>Río et al. (2010)</b>	Utilisation by SES	Low	Moderate	2005-2006	NS	Spain
<b>Salvador et al. (2008)</b>	Utilisation by SES	Low	Low	1993-2003	NS	Spain
<b>Siskou et al. (2008)</b>	Utilisation by SES and rural versus urban citizens	Low	Moderate	2005	NS	Greece
<b>Souliotis et al. (2016)</b>	Utilisation by SES and Out of Pocket Payment	Weak	Moderate	2011-2012	NS	Greece
<b>Tountas et al. (2011).</b>	Utilisation by SES	Weak	Moderate	2006	NS	Greece

NS=Not Specified; SES= Socioeconomic status

Appendix 6.D. Summary of findings table (alphabetical order): Quality of care

Indicator	Methodology	Reliability results	Generalizability results	Year(s) covered	Type (private)	Country
Berta et al. (2013)	Mortality rate	Strong	Weak	2009	NFP	Italy
Britto-Arias et al. (2015)	Adherence guideline	Weak	Moderate	2007-2013	NS	Austria
Gobillon & Milcent (2016)	Mortality rate	Strong	Moderate	1998-2003	FP	France
Gusmano et al. (2014).	Rehospitalization rates	Moderate	Moderate	2010	NS	France
Louis et al. (2008).	Inappropriate medical admissions	Weak	Weak	2001-2005	NS	Italy
Moscone et al. (2012)	Readmission and death within 30 days	Moderate	Weak	2005-2007	NS	Italy
Owusu-Frimpong et al. (2010)	Patient satisfaction on accessibility	Weak	Weak	X	NS	UK
Pérotin V., et al. (2013)	Patients experience	Strong	Moderate	2007-2008	ITC	UK
Quercioli et al. (2013)	Avoidable mortality	Strong	Strong	1993-2003	NS	Italy
Stroffolini, et al. (2003).	Compliance to the antenatal hepatitis B screening programme	Weak	Weak	2001	NS	Italy

FE=Fixed Effects; FP=For-Profit; NFP=Not-For-Profit; ITC=Independent Treatment Centres; NS=Not Specified; UK=United Kingdom

Appendix 6.D. Summary of findings table (alphabetic order): Multiple dimensions: Accessibility, Quality of Care and/or Efficiency

Indicator	Methodology	Reliability results	Generalizability results	Year(s) covered	Type (private)	Country
<b>Preti et al. (2009)</b> Characteristics of patients, patterns of care and discharges	Chi-square or Fischer exact test	Weak	Weak	2001-2005	Psych.	Italy
<b>Berta (2010)</b> Cream skimming, readmission technical efficiency	SFA	Moderate	Strong	1998-2007	FP + NFP	Italy
<b>Fattore et al. (2014)</b> Regional physical mobility, LOS	Logistic regression + multi-level	Strong	Strong	2009	NS	Italy
<b>Kondilis (2011)</b> Bed capacity, occupancy rate, nursing staff rate, LOS and payment per discharge	Confidence Interval Analysis	Weak	Moderate	2001-2003	FP	Spain
<b>Street et al. (2010)</b> Patients from deprived versus affluent regions, LOS	Within-HRG differences with t-test	Weak	Weak	2006-2007	ITC	UK
<b>Tiemann &amp; Schreyögg (2009)</b> Technical and controlled for mortality	Two stage DEA	Strong	Strong	2002-2006	FP + NFP	Germany

DEA=Data Envelopment Analysis; Diff-in-Diff=Difference-in-Difference; FE=Fixed Effects; FP=For-Profit; HRG=Healthcare Resource Groups;

ITC=Independent Treatment Centres; LOS=Length of Stay; NFP=Not-For-Profit; NS=Not Specified; Psych.=Psychiatric; SFA=Stochastic Frontier Analysis;

UK=United Kingdom





# Chapter

# 7.

## **Independent treatment centres are not a guarantee for high quality and low healthcare prices in The Netherlands – a study of five elective surgeries**

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## Abstract

**Background:** Independent Treatment Centres (ITCs) are a growing phenomenon in many healthcare systems. Focus factory theory predicts that ITCs provide high quality healthcare with low prices, through specialisation, high-volume and routine. This study examines if ITC care outperforms General Hospital (GH) care within a regulated competition system in the Netherlands, by focusing on differences in healthcare quality and price.

**Methods:** The cross-sectional study combined publicly available quality data, list prices and insurer contracts for 2017. Clinical outcomes of five elective surgeries (total hip- and knee replacement, anterior cruciate ligament-, cataract- and carpal tunnel surgeries) were compared using zero-or-one inflated beta-regressions, corrected for underlying structural factors (i.e. volume of care, process- and structure indicators, and chain affiliation). Furthermore, price differences between ITCs and GHs were examined using ordinary least squares regressions. Lastly, we analysed quality of care in relation to the number of insurance contracts of the four largest Dutch insurance companies using ordered logistic regressions.

**Results:** Quality differences between ITCs and GHs were found to be inconsistent across procedures. No facility type performed better overall. There were no differences exhibited in the list prices between ITCs and GHs. No consistent relationship was found between the underlying factors and quality or price, in different procedures and time. We found no indication for selective contracting based on quality within the ITC sector.

**Conclusions:** This study found no evidence that ITCs outperform GHs on quality or price. This evidence does not support the focus factory theory. The substantial practice variation in quality of care may justify more evidence-based contracting within the market for elective surgery.

**Keywords:** independent treatment centres, focus factory theory, ambulatory care, quality.



## 7.1. Background

Healthcare systems worldwide strive to improve the quality of care, while experiencing a growing need to curb the increasing healthcare costs.<sup>466</sup> As a response, governments aim to improve quality and reduce costs simultaneously.<sup>467,468</sup> One of the proposed solutions is the reallocation of ambulatory care from General Hospitals (GH) to Independent Treatment Centres (ITCs).<sup>383,469</sup>

ITCs are a growing phenomenon in many healthcare systems. In the United Kingdom, the number of ITCs grew from ten in 2006-2007 to 161 ITCs in 2010-2011.<sup>470,471</sup> In the Netherlands, the number of ITCs increased by 87%, from 229 ITC sites in 2009 to 418 ITC sites in 2016, while the number of invasive treatments performed in ITCs nearly tripled.<sup>80</sup> Yet, the share of ITCs within total reimbursable healthcare in the Netherlands is only 3.8% in 2016.<sup>472</sup> The expansion of ITCs may be explained by increased possibilities to perform more invasive procedures in outpatient settings, as a result of technological developments.<sup>317</sup> Due to the increasing significance of ITC care, it is important to study cost- and quality differences between ITC care and GH care, and investigate how this is supported within a regulated competition healthcare system.

The Dutch healthcare system regulates ITCs and GHs to a great extent. Healthcare providers that provide reimbursable medical care are not allowed to allocate profits to third parties. Hence, ITCs offering reimbursable care are non-profit entities, as are hospitals. The classification of ITCs as a distinct type of healthcare provider was formalised in 1998, when ITCs were allowed to provide reimbursable medical care for a limited array of treatments. The rationale behind the legislation was to reduce waiting lists and to control for-profit clinics.<sup>44,299</sup> In 2005, a formal distinction between ITCs and hospitals was abolished with the introduction of the Health Care Institutions Admission Act. This act classifies hospitals and ITCs equally as medical specialist care providers. However, in practice, ITCs differ significantly from hospitals in their organisational set-up: ITCs are much smaller, offer primarily elective ambulatory care, and tend to be more focused.<sup>74</sup> In practice, ITCs are still categorised differently by various stakeholders in the Dutch healthcare system.

The Dutch healthcare system was reformed in 2006. Since then, consumers have been able to freely choose their health insurers and healthcare providers.<sup>26,28</sup> In this regulated competition system, health insurers purchase healthcare selectively from different providers, and negotiate features, such as volume, price and quality. Insurers offer two types of plans: a benefits in-kind plan and a restitution plan.<sup>343</sup> A restitution plan reimburses all providers, guaranteeing full choice for consumers ( $\pm$  20% of the population). A benefits in-kind plan offers full reimbursement to a restricted network of providers, and partial reimbursement (usually 75%) to out-of-network providers.<sup>473</sup>

Patients seeking care at ITCs are likely to differ from those visiting GHs.<sup>74</sup> For example, patients have different pre-requisites or preferences in choosing between

GHs and ITCs. The location and presence of certain physicians are important factors in patients' choice of GHs, whereas quality of care and limited waiting time are important motivations for patients opting for ITCs.<sup>474</sup> Important information sources for patients choosing an ITC include advice from friends and acquaintances (47%), and the Internet (42%). Information for choice of GH is often gained from previous experiences (57%) or advice from a General Practitioner or physician (30%).<sup>474</sup>

### **7.1.1. Theory**

ITCs often specialise in a specific set of elective low-invasive medical procedures.<sup>299</sup> Their concept originates from the "focus factory" theory, which builds on specialisation – with the intention to yield benefits from simplicity, repetition, experience and homogeneity of performances. This theory implies increased productivity and quality improvements as a result of focus.<sup>74,76</sup> Thus, the focus and narrow scope of ITCs might lead to better performances, compared to GHs.

Healthcare performance could be driven by a number of underlying factors related to the focus factory theory. The focus of ITCs could be reflected in improved performance on process and structure indicators, due to standardisation and improved coordination of processes.<sup>347</sup> This might also reduce overhead costs, leading to lower production costs and potentially lower prices. Moreover, high volume could improve quality – known as the volume-quality relationship.<sup>475</sup> Furthermore, chain membership (i.e. facilities with multiple sites) could improve quality through the benefits of greater resources and organisational knowledge from other chain members.

Selective contracting of efficient and effective care by health insurers could be an important driver to improve quality within the ITC sector. Almost every hospital in the Netherlands is contracted by the main insurance companies, but this is not the case for ITCs.<sup>476</sup> ITCs might, therefore, feel inclined to profile themselves as a provider of high quality care with low prices, to compete with hospitals that have greater market power. Representatives of the ITC sector deemed this pressure as very high, as they experience difficulties in obtaining contracts from health insurers.<sup>476</sup>

The aim of this study is to compare ITCs to GHs on quality of care and price. The main research questions are: Do quality outcomes differ between ITCs and GHs? Do prices differ between ITCs and GHs? Furthermore, two supporting research questions were asked towards understanding the determinants behind potential performance differences. (i). Which underlying factors are associated with quality outcomes or prices? (ii). Is selective contracting within the ITC sector based on quality outcomes of the previous year?

## 7.2. Methods

### 7.2.1. Data and variables

Quality data of Dutch hospitals and ITCs for 2017 was extracted from the public dataset of the Dutch National Health Care Institute (Zorginstituut Nederland). Five medical procedures were selected based on the availability of clinical outcome data: Anterior Cruciate Ligament (ACL) surgery, cataract surgery, Total Hip Replacement (THR), Total Knee Replacement (TKR), and Carpal Tunnel Syndrome (CTS) surgery. We collected (1) clinical outcomes, (2) process and structure indicators, and (3) the annual number of surgeries per facility. The quality indicators were selected and defined by various stakeholders (e.g. the respective medical specialist associations); the Dutch National Health Care Institute and the Dutch Health Care Authority facilitated and managed this process. Percentage postoperative infections after CTS and the percentage of revisions after TKR, THR and ACL surgery were used as clinical outcomes. The quality indicators for CTS, TKR, THR and ACL were negatively framed (which means that high quality was represented by a percentage close to zero). Postoperative improved visual acuity (i.e.  $\geq 1$  line improved on eye chart) and comparisons between achieved refraction and target refraction were used as clinical outcome measures for cataract surgery, and were positively framed (which means that high quality was represented by a percentage close to 100). Patients with ocular comorbidities were excluded from the quality dataset for cataract surgery. THR or TKR revision percentages were case-mix adjusted (i.e. gender, age, ASA classification, diagnosis, Body Mass Index, Charnley classification and smoking) by the Dutch Arthroplasty Register.<sup>477,478</sup> For CTS and ACL surgery, no data on case-mix was available.

An index measure was made upon the various process and structure indicators for each individual medical procedure. For example, if a facility uses a decision aid, the process measure will be 1 (good performance). If a facility does not comply to this standard, the process measure will be 0 (poor performance). The dichotomous quality indicators (Appendix 7.A.) were transformed into Z-scores.<sup>479,480</sup> Index measures were based upon the mean of the Z-scores of the individual quality indicators. No index was constructed for ACL treatments due to the absence of process and structure indicators.

To collect price data, we first selected the most frequently used surgical Diagnostic Related Groups ([DRGs] referred to as DOTs in Dutch) per treatment. In the Netherlands, prices are freely negotiable: each insurer and provider negotiate a DRG-price for contracted care. As these prices are competition-sensitive, they are not made public, and were not available for this study. However, providers are legally obliged to publish list prices. In theory, these prices apply for patients without health insurance or patients who receive care from a non-contracted provider. When patients visit out-of-network-providers, they may pay up to 25% of the list price, out-of-pocket. Therefore, list prices may be used as a proxy for contracted prices,

although list prices are generally higher than contracted prices. List prices of the first quarter of 2017 were obtained by manually searching websites and directly contacting healthcare providers during December 2018.

A dichotomous variable for chain affiliation was constructed manually. Providers with at least two sites (i.e. different unique addresses) were categorised as chains. In order to also include outpatient hospital clinics, a dataset from the Dutch Ministry of Health, Welfare of Sport was used.<sup>481</sup>

Data on whether or not insurance companies contracted ITCs for the five medical procedures were obtained by hand-searching the websites of the four largest insurance companies (CZ, Zilveren Kruis, VGZ and Menzis, which together covered 88.4% of the Dutch insurance market in 2017<sup>482</sup>) in December 2018. The list of providers that were contracted in each limited provider plan was used to construct the total number of contracts per ITC.

Before the analysis was performed, this study imposed several restrictions to the data. We had to exclude healthcare providers that did not provide annual quality data. These consist of: four ITC observations and one GH observation for cataract surgery; four ITC observations and one GH observation for CTS; four ITC observations for THR and TKR; and, four ITC observations and two GH observations for ACL. Furthermore, five facilities were not able to deliver list prices for 2017, and were excluded from the price analyses. We excluded specialty- and academic hospitals from all analyses, because they tend to treat a different and more complex patient group compared to ITCs and GHs.<sup>483</sup> In addition, specialty- and academic hospitals have teaching obligations that could affect quality and price. This assumption was relaxed in the robustness analyses. We also excluded providers that delivered data as holding companies only. This means that we had to remove those providers that provided the same care at multiple sites, but the different sites did not report their individual data. This resulted in the exclusion of one ITC chain that provided care for all five medical procedures included in this study. To identify observations with a potentially great influence on the regression coefficients, we performed Cook's distance tests on all regression models.<sup>484</sup> Since our sample size was relatively small and single infections could lead to high infection percentages in providers with low volumes; our results could have been driven by outliers. A Cook's distance value  $>0.85$  was required for an observation to be considered influential.<sup>485</sup> This resulted in exclusion from the regression analysis. One TKR observation and one ACL observation were identified as highly influential. Furthermore, ordinal logistic regression was only performed with sufficient sample size ( $n>10$ ), therefore, no models on insurance contracts were conducted on THR ( $n=9$ ) and TKR ( $n=10$ ).

### 7.2.2. Data analysis

For each medical procedure, five regressions were run; three models with quality as a dependent variable, one with list price as a dependent variable and one with

the number of insurance contracts as a dependent variable. In all regression models, standard errors were clustered on chain affiliation level.

Firstly, we tested for differences in clinical outcomes between ITCs and GHs (Appendix 7.B. Model 1a). Secondly, we checked which underlying factors might drive clinical outcomes (i.e. volume, process and structure measures, and chain affiliation) (Appendix 7.B. Model 1b). Thirdly, we combined these two models to assess if the relationship between the type of provider and clinical outcomes persists when controlling for underlying factors (Model 1). As the outcome measures are bounded by 0% and 100%, with a significant portion of the observations at the extremes, zero-or-one inflated beta regressions were used.<sup>486,487</sup> In these models, coefficients should be interpreted as elasticities. The marginal effects were calculated separately through the margins command in Stata.15<sup>®</sup> and reported in the text. Fourthly, an ordinary least squares model was applied to identify differences in list price between ITCs and GHs, while correcting for underlying factors (volume, process and structure measures, and chain affiliation) (Model 2). (In Appendix 7.C., we display the residual plots to assess if the residuals after the ordinary least squares regressions are normally distributed. Please note that we had already clustered our observations within chains to limit this possibility. These plots illustrate that no irregular variances of residuals can be detected.) Fifthly, by means of an ordered logistic regression, the number of contracted ITCs in 2018 was related to quality (i.e. clinical outcomes) in the previous year (Model 3). We used an ordered logistic regression, as the dependent variable – number of contracts – should be treated as ordered categorical classes.

We performed several robustness checks. Firstly, we repeated the analyses with quality data from 2016. No quality data of previous years could be used, as different quality indicators were used prior to 2016. Secondly, we estimated if the exclusion of specialist- and academic hospitals had a significant impact on the result. Thirdly, we checked if results changed when outliers were included (i.e. one TKR observations and one ACL observation).

## 7.3. Results

### 7.3.1. Descriptive statistics

Summary statistics are given in Table 7.1. Quality differences are small and inconsistent; ITCs outperform GHs on cataract care, CTS and ACL surgery, but perform on average worse on THR and TKR. However, standard errors are often large, indicating high variation in quality outcomes in both ITCs and GHs. All procedures except ACL surgery are performed on average more frequently in GHs. The majority of ITCs are affiliated to a chain (50%-62%), with chain affiliation rates being especially high for ITCs performing TKR and THR (respectively 60% and 62%). Most GHs are affiliated to a chain (i.e. having at least two sites – including outpatient clinics) as well (55%-57%). GHs perform better on process and structure indicators

(Appendix 7.A.), as illustrated by the average index measure being negative for ITCs and positive for GHs.

Average list prices are higher in ITCs for TKR, THR and CTS surgeries, but lower for cataract- and ACL surgeries. The variance in surgery list prices on TKR and THR is larger within ITCs. Furthermore, the vast majority of GHs are contracted by the four largest insurance companies (on average 3.91–3.96). The ITCs are contracted substantially less and with greater variance (on average 2.60–3.44). All GHs have insurance contracts with at least one of the four insurance companies, which is not the case for all ITCs.

Table 7.1. Descriptive statistics 2017

	Cataract		Carpal Tunnel Syndrome		Total Knee Replacement		Total Hip Replacement		Anterior Cruciate Ligament injury	
	ITC	GH	ITC	GH	ITC	GH	ITC	GH	ITC	GH
<b>Quality indicators</b>										
Postoperative $\leq 1$ dioptre of target refraction [%]	94.87 $\pm$ 3.32 (30)	93.78 $\pm$ 3.45 (64)								
Postoperative improved visual acuity $\geq 1$ line [%]	85.58 $\pm$ 9.81 (30)	83.10 $\pm$ 7.25 (64)								
Postoperative infection within 30 days [%]	0.15 $\pm$ 0.31 (20)	0.28 $\pm$ 0.46 (69)								
Revision within 1 year [%]			2.72 $\pm$ 3.29 (10)	1.28 $\pm$ 0.89 (69)	1.93 $\pm$ 2.06 (9)	1.69 $\pm$ 1.06 (69)	2.92 $\pm$ 5.73 (14)	3.75 $\pm$ 2.75 (66)		
Process and structure measure <sup>a</sup> [index]	-0.12 $\pm$ 0.38 (32)	0.08 $\pm$ 0.35 (65)	-0.13 $\pm$ 0.64 (24)	0.05 $\pm$ 0.39 (70)	-0.68 $\pm$ 0.55 (15)	0.19 $\pm$ 0.47 (69)	-0.39 $\pm$ 0.65 (13)	0.13 $\pm$ 0.57 (69)		
<b>Volume indicators</b>										
Surgeries [n]	1180.81 $\pm$ 640.65 (31)	1855.22 $\pm$ 965.50 (65)	118.05 $\pm$ 132.30 (22)	369.99 $\pm$ 199.76 (69)	163.07 $\pm$ 182.84 (15)	315.00 $\pm$ 149.90 (69)	127.92 $\pm$ 130.68 (13)	379.51 $\pm$ 184.63 (69)	129.22 $\pm$ 139.31 (18)	78.84 $\pm$ 66.08 (68)
Chain affiliation [dummy]	0.50 $\pm$ 0.51 (32)	0.57 $\pm$ 0.50 (65)	0.50 $\pm$ 0.51 (24)	0.56 $\pm$ 0.50 (70)	0.60 $\pm$ 0.51 (15)	0.55 $\pm$ 0.50 (69)	0.62 $\pm$ 0.51 (13)	0.55 $\pm$ 0.50 (69)	0.56 $\pm$ 0.51 (18)	0.56 $\pm$ 0.50 (68)
<b>Prices and contracts</b>										
Insurance contracts [n]	3.44 $\pm$ 1.11 (32)	3.94 $\pm$ 0.24 (64)	2.96 $\pm$ 1.27 (24)	3.91 $\pm$ 0.28 (69)	2.60 $\pm$ 1.55 (15)	3.96 $\pm$ 0.21 (68)	2.62 $\pm$ 1.61 (13)	3.96 $\pm$ 0.21 (68)	2.94 $\pm$ 1.35 (18)	3.94 $\pm$ 0.30 (67)
List price surgery <sup>b</sup> [€]	1,230.37 $\pm$ 116.00 (31)	1,235.89 $\pm$ 212.94 (64)	998.03 $\pm$ 180.81 (20)	926.11 $\pm$ 215.33 (69)	10,402.41 $\pm$ 1115.47(14)	10,079.14 $\pm$ 920.37 (68)	9,905.91 $\pm$ 1125.74 (12)	9,344.06 $\pm$ 887.66 (68)	4,208.94 $\pm$ 425.02 (14)	4,243.23 $\pm$ 726.79 (67)

Values are presented as mean  $\pm$  standard error (n).

Abbreviations: GH = General Hospital; ITC = Independent Treatment Centre; ASA = American Society of Anesthesiologists.

a) See Appendix 7.A. for overview.

b) The following DRG codes were used: Cataract surgery - 070401008; CTS - 990004071; TKR - 131999104; THR - 131999052; ACL - 131999102.

### 7.3.2. Regression analyses

No clear quality differences were found between ITCs and GHs for TKR, cataract and CTS surgeries (Table 7.2. and Appendix 7.B.). Model 1a (Appendix 7.B.) estimates that ITCs have a higher revision rate for THR, but a lower revision rate for ACL. Both relationships persist when correcting for underlying factors (Table 7.2.). The estimated elasticity of 0.82 for THR translates into a 1.44 percentage point higher revision rate in ITCs. ITCs performed 2.21 percentage point fewer revision surgeries than GHs for ACL. Table 7.2. indicates that the chance of developing postoperative infections declines when more CTS surgeries are performed. However, a volume-quality relationship was not found for any of the other procedures. Similarly, the process and structure indicators are only related to one procedure: they are positively associated with the increase of postoperative dioptre of target for cataract care. Chain affiliation seems unrelated to quality.

**Table 7.2.** Zero-or-one inflated beta regression models on quality in relation to facility type (i.e. ITC versus GH) 2017

	Cataract <sup>1</sup>	CTS	TKR	THR	ACL	
Dependent variable	Postoperative ≤1 dioptre of target [0-1]	Improved visual acuity ≥1 line [0-1]	Post- operative infection [0-1]	Revision within 1 year [0-1]	Revision within 1 year [0-1]	Revision within 1 year [0-1]
<b>Model 1</b>	n=94	n=94	n=89	n=78	n=78	n=79
GH	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
ITC	0.20 ± 0.14	0.09 ± 0.14	-0.08 ± 0.17	0.62 ± 0.45	0.82*** ± 0.20	-0.69** ± 0.29
Number of surgeries (x100)	-0.00 ± 0.01	-0.00 ± 0.01	-0.14** ± 0.07	-0.07 ± 0.04	-0.02 ± 0.04	0.04 ± 0.11
Process / structure	0.49** ± 0.23	-0.13 ± 0.25	-0.26 ± 0.14	0.02 ± 0.17	0.10 ± 0.11	
No chain affiliation	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
Chain affiliation	-0.08 ± 0.12	-0.25 ± 0.16	0.34 ± 0.18	0.10 ± 0.16	0.09 ± 0.13	-0.08 ± 0.20

Values are presented as coefficient ± clustered standard error.

Abbreviations: GH = General Hospital; ITC = Independent Treatment Centre, CTS: Carpal Tunnel Syndrome; TKR: Total Knee Replacement; THR: Total Hip Replacement; ACL: Anterior Cruciate Ligament injury.

1) The dependent variables of the cataract models are positively framed (one-inflated beta regressions), where the others are negatively framed (zero-or-one inflated beta regressions).

\*\*\* p<0.01, \*\* p<0.05



*Price and facility type*

The association between list prices and facility type is shown in Table 7.3. No differences in list prices were found between ITCs and GHs after correction for additional factors. High volume is related to a lower list price for standard cataract surgery, although the effect is limited: each additional surgery lowers the list price by approximately €0.05. Furthermore, good performances on process and structure measures are related to higher surgery prices for CTS surgery. This means that one standard-deviation increase in process and structure indicators increases list prices by €121.

**Table 7.3.** Relation price and facility type (i.e. ITC versus GH) 2017

	Cataract	Carpal Tunnel Syndrome (CTS)	Total Knee Replacement (TKR)	Total Hip Replacement (THR)	Anterior Cruciate Ligament injury (ACL)
Dependent variable	List price surgery [€]	List price surgery [€]	List price surgery [€]	List price surgery [€]	List price surgery [€]
<b>Model 2</b>	n=94	n=87	n=82	n=80	n=81
GH	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
ITC	-49.15 ± 41.61	51.62 ± 56.59	203.98 ± 519.83	460.97 ± 465.21	-2.98 ± 160.13
Number of surgeries (x100)	-5.23*** ± 1.94	-0.68 ± 10.58	-73.19 ± 0.73	-44.36 ± 55.59	-50.95 ± 62.07
Process / structure	-31.89 ± 47.95	120.70** ± 57.01	-15.31 ± 208.29	35.18 ± 132.54	
No chain affiliation	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
Chain affiliation	-6.23 ± 44.37	-22.88 ± 45.17	30.89 ± 258.90	97.83 ± 253.74	60.16 ± 175.05

Values are presented as coefficient ± clustered standard error.

Abbreviations: GH = General Hospital; ITC = Independent Treatment Centre.

\*\*\* p<0.01, \*\* p<0.05

*Insurance contracts*

No relationship was detected between the number of insurance contracts for 2018 and quality data of ITCs in 2017 (Table 7.4.). This suggests that insurance contracts are independent of quality of care within the ITC sector.

**Table 7.4.** Four ordered logistic regression models on the relation between insurance contracts of ITCs concluded in 2018 and quality in 2017

	Number of insurance contracts [0-4]
<b>Model 3</b>	
Cataract model – fraction $\leq 1$ dioptre of target refraction	10.17 $\pm$ 13.06 (30)
Cataract model – fraction improved visual acuity $\geq 1$ line	1.65 $\pm$ 3.33 (30)
Carpal Tunnel Syndrome model – fraction infection	-97.44 $\pm$ 98.48 (20)
Anterior Cruciate Ligament injury model – fraction revision	82.05 $\pm$ 65.11 (14)

Values are presented as coefficient  $\pm$  clustered standard error (n)

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$

### *Robustness checks*

Robustness checks are displayed in Appendix 7.D. to 7.H. Diverging from the 2017 results, no statistically significant differences in quality between ITCs and GHs were found in 2016 (Appendix 7.E., Model 1). Fewer revisions after THR occurred in 2016 compared to 2017, especially for ITCs (Table 7.1. and Appendix 7.D.). The corrected zero-or-one inflated models show that the inferior performance of ITCs on THR compared to GHs in 2017 (Table 7.2.), was not found in 2016 (Appendix 7.E., Model 1). Also, the significant relationship between ACL and type of facility disappeared in 2016 (Appendix 7.E., Model 1). Furthermore, our findings from 2017 indicate a volume-quality relationship for CTS, but this relationship disappeared in 2016; and, vice versa, no volume-quality relationship was found for TKR in 2017 (Table 7.2.), but there was such a relationship in 2016 (Appendix 7.E., Model 1). In addition, the process and structure indicators are still associated with better performance on cataract care, but in 2016, the process and structure indicators are related to the other cataract quality measure (i.e. postoperative improved visual acuity) instead of the postoperative dioptre of target. These findings reaffirm that no robust quality differences could be detected between ITCs and GHs.

When speciality- and academic hospitals are included, the corrected quality outcomes change slightly in favour of ITCs (Appendix 7.F.). For example, in contrast to Table 7.2., ITCs perform significantly better than general-, specialty- and academic hospitals on postoperative dioptre of target refraction after cataract surgery. One of the explanations for this disparity is that academic hospitals treat a different patient-base when performing cataract surgery.<sup>483</sup> This might suggest that the exclusion of ocular comorbidity does not fully correct for case-mix differences between the different types of providers. Furthermore, the significant relationship between the probability of having revisions within one year after THR and type of provider disappears. This implies that academic hospitals (this analysis does not include specialty hospitals) have similar quality performances as ITCs. Hence, it seems to be that particularly GHs performed well on this measure in 2017. To conclude,

facility type remained unrelated to price differences after inclusion of speciality- and academic hospitals (Appendix 7.G).

The final robustness check, which includes the outliers with Cook's Distance values above 0.85, illustrates that the two outliers have a substantial impact on the results (Appendix 7.H). ITCs become associated with a higher chance of revisions for TKR, while in the main model (Table 7.2.), we did not find such a relationship. In addition, the relationship between facility type and ACL care disappeared in the model when the outlier was included.

## 7.4. Discussion

This study compared ITCs with GHs on quality and price, and expected ITCs to provide better quality at a lower price – based on the focus factory theory. However, quality differences were inconsistent over different medical procedures and over time. ITCs needed fewer revision surgeries after ACL surgery. In contrast, revision surgery after THR was performed more often in ITCs than in GHs. However, these differences did not persist when we performed the robustness checks. No significant relationship was found between lists prices and facility type (i.e. ITCs and GHs). This is relevant for patients with a restrictive-provider plan, as they may need to pay the difference between the list price and 75% of the mean contracted price when they decide to visit a non-contracted provider.<sup>473</sup> Furthermore, the underlying factors did not demonstrate a clear relationship with quality or price over the different medical procedures. This indicates that ITCs may not strategically compete for patients by offering lower prices or better clinical outcomes.

These empirical findings are in line with international empirical literature, which illustrated inconsistent quality differences between ITCs and hospitals.<sup>319,320,483,488,489</sup> Recent evidence from the Netherlands identified quality differences between ITCs and GHs in providing cataract care.<sup>483</sup> This study found that ITCs scored significantly higher on patient satisfaction compared to GHs, but patient reported outcomes were similar.<sup>483</sup> Empirical evidence from England points towards better clinical outcomes after THR and TKR in ITCs compared to NHS providers. However, differences were small and the authors did not fully adjust for case-mix differences.<sup>319</sup> Browne et al. found slightly better outcomes in patients treated in ITCs, but the authors state that such differences were minor and unlikely to be clinically significant.<sup>488</sup> In the United States, Chukmaitov et al. found no difference in quality of ambulatory surgery centres and hospitals,<sup>320</sup> while Hollingsworth et al. found fewer complications after urological surgery for ambulatory surgery centres.<sup>318</sup> The inconsistent findings on clinical quality outcomes could be caused by ITCs that focus more on aspects such as patients' experiences and satisfaction.<sup>490,491</sup> In line with research on hospital chain affiliation in the United States, our study found no indications that chain affiliation improves quality of care.<sup>361</sup>

We found no overall differences in list prices between ITCs and GHs. The Dutch Health Care Authority found approximately 10%-15% lower contracted prices across the board for ITCs compared to GHs,<sup>299</sup> and another, more recent empirical study finds that ITCs offer 8% lower contracted prices than GHs for cataract care.<sup>483</sup> A lower contracted price could indicate that ITCs have less bargaining power vis-à-vis insurers. This reasoning is supported by existing literature, which found lower profit margins for ITCs compared to GHs.<sup>492</sup> Alternatively, lower contracted prices could reflect ITCs being more efficient. However, hospitals may be equally efficient, but may use higher margins on procedures that can be standardised easily to cross-subsidize more loss-making procedures. This requires additional research.

Similar to the quality outcome measures, the volume-quality relationship and the relationship between quality and the process and structure indicators vary over time. We found that facilities with more CTS surgeries scored better on clinical outcomes (i.e. less postoperative infections) in 2017, but not in 2016. In contrast, there was a significant volume-quality relationship for THR in 2016, but this relationship was not detected in 2017. Furthermore, we did not find a volume-quality relationship for the other treatments. The volume-quality relationship has been demonstrated in previous research on high-risk surgical procedures in hospitals,<sup>324-327,336,339</sup> but is less studied for low-risk surgical outpatient procedures.<sup>47,333</sup> Previous research has demonstrated that high-volume hospitals provided better quality of care for low-risk invasive treatments.<sup>330,332,333,358</sup> One contribution from the United States and the Netherlands shows that the volume-quality relationship also persist within the ITC sector, however, this relationship appears to be weaker.<sup>47,310</sup> Different from the previous studies, our results do not indicate that a volume-quality relationship exists for the five treatments included in this study.

Lastly, we did not find convincing evidence that healthcare insurers selectively contract ITCs based on quality. Therefore, ITCs may not obtain a competitive advantage when outperforming on quality. This goes against the premise of the regulated competition system that high quality gets rewarded through selective contracting. Studies on the relation between quality and selective contracting in the managed competition sector in the Netherlands are limited, and show mixed results.<sup>493-495</sup> Studies on price competition in the Dutch hospital-sector also show limited responsiveness of insurers to price differences.<sup>26,28,494</sup> One study found an increase in total costs of inpatient DRGs after the introduction of market-based price competition, but a decrease in total costs of outpatient DRGs.<sup>28</sup> Heijink et al. detected no decrease in cataract prices after the introduction of regulated competition, and insurers did not selectively contract hospitals on cataract care.<sup>26</sup> The role of quality in negotiations between insurers and providers seems to be limited.<sup>494</sup>

#### **7.4.1. Limitations**

Despite the uniqueness of the quality dataset – which contains quality data of both GHs and ITCs for multiple treatments – some data limitations need to be taken into

account when interpreting our results. Firstly, we cannot exclude the possibility of unobserved confounders, such as remaining case-mix differences. The models that include specialty- and academic hospitals indicate concerns of such sort. International evidence allude to concerns of “cherry-picking” behaviour among ITCs, which means that ITCs treat less complex patients compared to GHs.<sup>119,120</sup> However, some studies indicate that these case-mix differences are not that pronounced.<sup>483,496</sup> We could not control for case-mix when assessing CTS and ACL surgeries. Case-mix could potentially drive quality outcomes for CTS treatments.<sup>497</sup> For instance, ITCs might treat less CTS patients with diabetes compared to GHs,<sup>498</sup> but differences in postoperative infections between diabetic and non-diabetic patients are not necessarily present.<sup>499</sup> One risk factor for postoperative complications for ACL surgery is if the patient needs inpatient admission following ACL surgery (i.e. overnight stays).<sup>500,501</sup> This is highly influenced by the type of anaesthesia; regional anaesthesia provides more same-day discharges, while general anaesthesia often requires inpatient admission.<sup>502,503</sup> It is unclear if the choice of anaesthesia between ITCs and GHs significantly differs – most ITCs and GHs offer both options (i.e. same-day and overnight stay). Insufficient case-mix correction could lead to unjustifiable lower quality in hospitals due to more highly-complex surgeries. Even if case-mix differences bias our outcome results towards higher quality for ITCs as a result of “cherry picking”, the absence of quality differences indicates that remaining case-mix differences may play a limited role, or that absence of quality differences is a conservative conclusion.

Secondly, despite a legal mandate for providers to report their annual quality data to the Dutch National Health Care Institute, some providers did not report their quality data. This could introduce selection bias. Also, one large ITC chain aggregated location-specific outcomes, and had to be excluded. We checked if the observations regarding quality and price of this ITC chain were significantly different from the other observations. We found that these observations were less than one z-score removed from the overall mean. Therefore, we argue that the possibility that the exclusion of this chain will bias our results is limited. To check the completeness of the data, we compared ITCs included in our dataset to all healthcare providers featured on the website of the Dutch Patients Association ([ZorgkaartNederland.nl](http://ZorgkaartNederland.nl)): a tool for patients to choose between healthcare providers. The vast majority of ITCs were present in our dataset – depending on the type of treatment – ranging from 74% to 97%. This indicates that our data covers most of the ITC market, but selection bias could not be ruled out. Again, this suggests that the absence of higher quality in ITCs is a conservative conclusion.

Thirdly, list prices might not reflect real prices, as contracted prices are generally lower than list prices, especially for ITCs. Furthermore, it is unclear if list prices are actually used to inform out-of-network patients. For example, legislation prevents prices of out-of-network care to form a major barrier in patient choice: for patients visiting out-of-network providers at least 75% of the average contracted market

price must be compensated by insurers. If 75% of the mean market price would be sufficient to cover marginal costs, out-of-network patients may not be charged any out-of-pocket costs, and the list prices lose their informational value. More research is needed to assess if and how list prices are actually used in practice.

Other limitations include self-reporting, small sample size and ITC physicians working in GHs. Firstly, quality data was self-reported by ITCs and GHs, which could result in positive misreporting (i.e. desirable answers). Secondly, our findings are based on a relatively small sample size, which limit the ability to detect small differences. In addition, results from small sample sizes are more susceptible to outliers. This was also demonstrated in the robustness checks. Thirdly, a report from 2013 states that at least 96 ITC physicians (divided over a total of 313 ITCs) also worked as a physician at a GH.<sup>474</sup> However, the available data did not allow us to correct for physicians that work in both GHs and ITCs. These physicians could transfer knowledge and experience between GHs and ITCs, reducing quality differences between facilities types.

#### **7.4.2. Implications**

Our study contributes to the understanding of how ITCs perform compared to GHs on quality of care, price, and how effective selective contracting is, with regard to quality of care, within the Dutch ITC sector. The ITC sector has become more prominent in many healthcare systems and the need for ambulatory care is likely to grow in the near future, with an increasingly ageing population that will further intensify the demand on, for instance, ophthalmological and orthopaedic care.<sup>504,505</sup>

Despite its limitations, our findings could be of interest to various stakeholders. Firstly, health insurers may want to utilise this information in strategic contracting. We found that ITCs are less often contracted than GHs. From a quality perspective, ITCs do not seem to outperform GHs. Furthermore, while we found no differences in list prices, other studies have shown that contracted prices were lower for ITCs compared to GHs.<sup>299,483</sup> Thus, reallocating low invasive care to ITCs could still be attractive for health insurers from a cost perspective. Although ITCs and GHs on average perform similarly, substantial practice variation in quality may justify more selective contracting on quality. This could also incentivise both ITCs and GHs to invest in quality. Creating more transparency in healthcare costs and prices is warranted in order to study the economic effects of ITCs. Additionally, transparency could empower patients to make better-informed decisions and lower healthcare costs by creating a more efficient and competitive system.<sup>506</sup> Enhancing and improving open data in healthcare systems to monitor the performance of different types of providers has the potential to greatly improve the efficiency of the healthcare system. Only with better case-mix adjustments can we assess if specialty and academic hospitals are value-adding entities, and if it is more efficient for some patients to be treated in GHs and/or ITCs. Once those improvements are realised, the ITC sector has

the potential to play a more prominent role in the provision of elective care and can potentially contribute to the financial sustainability of the Dutch healthcare system.

## 7.6. Appendix

### Appendix 7.A. Process and structure indicators 2017

	Cataract		Carpal Tunnel Syndrome		Total Knee Replacement		Total Hip Replacement	
	ITC	GH	ITC	GH	ITC	GH	ITC	GH
Multiple appointments are by default scheduled on the same day	0.63 ± 0.49 (32)	0.78 ± 0.41 (65)	0.78 ± 0.42 (23)	0.91 ± 0.28 (70)	0.40 ± 0.51 (15)	0.90 ± 0.30 (69)	0.46 ± 0.52 (13)	0.90 ± 0.30 (69)
Availability of extra services <sup>1</sup>			0.25 ± 0.15 (24)	0.27 ± 0.24 (70)	0.20 ± 0.14 (15)	0.31 ± 0.23 (69)	0.24 ± 0.16 (13)	0.32 ± 0.23 (69)
The use of a decision aid					0.60 ± 0.51 (15)	0.69 ± 0.47 (68)	0.62 ± 0.51 (13)	0.68 ± 0.47 (68)
Range of anaesthetics offered <sup>2</sup>					0.77 ± 0.10 (15)	0.96 ± 0.10 (69)		
Patients are always asked if they prefer an anaesthetic method	0.42 ± 0.50 (31)	0.94 ± 0.24 (65)						
Reachable by email or telephone after surgery	1.00 ± 0.00 (32)	1.00 ± 0.00 (65)						
Uses the quality registration system of the professional ophthalmology association	0.97 ± 0.18 (31)	1.00 ± 0.00 (65)						
Patients see surgeon before anaesthesia	0.97 ± 0.18 (32)	1.00 ± 0.00 (65)						
Patients can choose between lenses	1.00 ± 0.00 (32)	0.95 ± 0.21 (64)						
Range of lenses offered <sup>3</sup>	0.84 ± 0.24 (32)	0.70 ± 0.31 (65)						



## Appendix 7.A. Process and structure indicators 2017, continued

	Cataract		Carpal Tunnel Syndrome		Total Knee Replacement		Total Hip Replacement	
	ITC	GH	ITC	GH	ITC	GH	ITC	GH
Examination of both hands on the same day			0.68 ± 0.48 (22)	0.73 ± 0.45 (70)				
Supporting disciplines available on site <sup>4</sup>			0.32 ± 0.16 (22)	0.54 ± 0.22 (70)				
Multiple appointments are generally scheduled on the same site			0.88 ± 0.34 (24)	0.79 ± 0.41 (70)				
Patient has contact with surgeon within 6 weeks after surgery			0.96 ± 0.19 (22)	0.92 ± 0.17 (69)				
Mean z-value	-0.12 ± 0.38 (32)	0.08 ± 0.35 (65)	-0.13 ± 0.64 (24)	0.05 ± 0.39 (70)	-0.68 ± 0.55 (15)	0.19 ± 0.47 (69)	-0.39 ± 0.65 (13)	0.13 ± 0.57 (69)
Difference (p-value)	p=0.012		p=0.108		p=0.000		p=0.004	

Values are presented as mean ± standard error (n).

Abbreviations: GH = General Hospital; ITC = Independent Treatment Centre.

- 1) i.e. e-consult, video-consult, evening consult, schedule online appointments, patient can online access their patient record, patient portal.
- 2) i.e. NSAID, opiates, intravenous anaesthesia, nerve blockade, infiltration with local anaesthetics.
- 3) i.e. monofocal lens, monofocal toric lens, bifocal lens, multifocal lens, multifocal toric lens.
- 4) i.e. physiotherapist, occupational therapist, hand therapist, rehabilitation doctor, nurse practitioner, physician assistant, specialised nurse.

### Appendix 7.B. Zero-or-one inflated beta regression models on quality in relation to facility type (Model 1a), and in relation to the underlying factors (Model 1b), 2017

	Cataract <sup>1</sup>		Carpal Tunnel Syndrome	Total Knee Replacement	Total Hip Replacement	Anterior Cruciate Ligament injury
Dependent variable	Postoperative ≤1 dioptre of target refraction [0-1]	Postoperative improved visual acuity ≥1 line [0-1]	Postoperative infection [0-1]	Revision within 1 year [0-1]	Revision within 1 year [0-1]	Revision within 1 year [0-1]
<b>Model 1a</b>	n=94	n=94	n=89	n=78	n=78	n=79
GH	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
IIC	0.10 ± 0.11	0.13 ± 0.15	0.19 ± 0.18	0.61 ± 0.33	0.75*** ± 0.17	-0.66** ± 0.28
<b>Model 1b</b>	n=94	n=94	n=89	n=78	n=78	n=80
Number of surgeries (x100)	-0.01 ± 0.00	-0.00 ± 0.01	-0.13** ± 0.06	-0.05 ± 0.04	-0.04 ± 0.04	-0.12 ± 0.14
Process / structure	0.43* ± 0.25	-0.15 ± 0.24	-0.24* ± 0.13	-0.20 ± 0.14	-0.04 ± 0.11	
No chain affiliation	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
Chain affiliation	-0.05 ± 0.14	-0.24 ± 0.16	0.34* ± 0.18	0.09 ± 0.17	0.09 ± 0.15	-0.09 ± 0.20

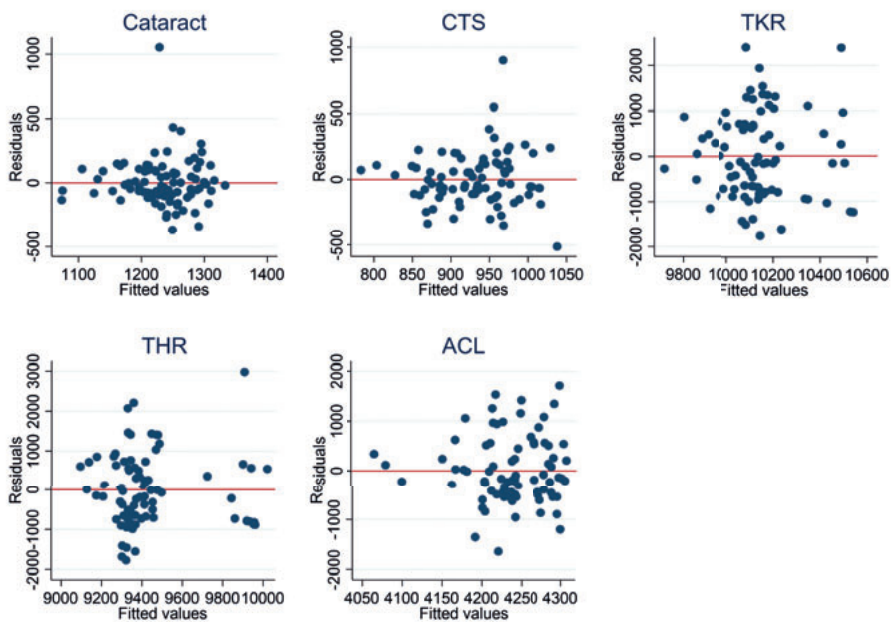
Values are presented as coefficient ± clustered standard error.

Abbreviations: GH = General Hospital; IIC = Independent Treatment Centre.

1) The dependent variables of the cataract models are positively framed (one-inflated beta regressions), where the others are negatively framed (zero-inflated beta regressions).

\*\*\* p<0.01, \*\* p<0.05

**Appendix 7.C. Residual plots of the OLS regression models with price as outcome variable, 2017**



## Appendix 7.D. Summary statistics 2016

	Cataract		Carpal Tunnel Syndrome		Total Knee Replacement		Total Hip Replacement		Anterior Cruciate Ligament injury	
	ITC	GH	ITC	GH	ITC	GH	ITC	GH	ITC	GH
<b>Quality indicators</b>										
Postoperative $\leq 1$ dioptre of target refraction [%]	93.73 $\pm$ 7.27 (24)	94.00 $\pm$ 2.56 (61)								
Postoperative improved visual acuity $\geq 1$ line [%]	88.66 $\pm$ 7.58 (24)	90.33 $\pm$ 3.83 (61)								
Postoperative infection within 30 days [%]			0.16 $\pm$ 0.26 (17)	0.32 $\pm$ 0.47 (70)						
Revision within 1 year [%]					1.23 $\pm$ 0.89 (8)	0.98 $\pm$ 0.71 (68)	1.17 $\pm$ 1.23 (6)	1.59 $\pm$ 0.93 (68)	2.68 $\pm$ 3.49 (13)	3.24 $\pm$ 1.97 (68)
Process and structure measure [mean dummies]	0.81 $\pm$ 0.10 (26)	0.91 $\pm$ 0.10 (65)	0.72 $\pm$ 0.21 (20)	0.77 $\pm$ 0.15 (70)	0.46 $\pm$ 0.22 (10)	0.68 $\pm$ 0.17 (69)	0.34 $\pm$ 0.25 (7)	0.60 $\pm$ 0.21 (69)		
Process and structure measure [index]	-0.21 $\pm$ 0.40 (26)	0.06 $\pm$ 0.42 (65)	-0.19 $\pm$ 0.63 (20)	0.03 $\pm$ 0.43 (70)	-0.79 $\pm$ 0.64 (10)	0.08 $\pm$ 0.50 (69)	-0.74 $\pm$ 0.81 (7)	-0.00 $\pm$ 0.59 (69)		
<b>Volume indicators</b>										
Surgeries [n]	1,177.88 $\pm$ 675.35 (25)	1,894.16 $\pm$ 928.59 (64)	122.05 $\pm$ 162.06 (19)	365.06 $\pm$ 194.18 (69)	253.20 $\pm$ 243.44 (10)	298.55 $\pm$ 136.60 (69)	147.14 $\pm$ 121.65 (7)	367.36 $\pm$ 191.31 (69)	153.71 $\pm$ 148.61 (14)	82.92 $\pm$ 69.34 (68)
Chain affiliation	0.54 $\pm$ 0.51 (26)	0.54 $\pm$ 0.50 (65)	0.50 $\pm$ 0.51 (20)	0.53 $\pm$ 0.50 (70)	0.70 $\pm$ 0.48 (10)	0.52 $\pm$ 0.50 (69)	0.57 $\pm$ 0.53 (7)	0.52 $\pm$ 0.50 (69)	0.64 $\pm$ 0.50 (14)	0.53 $\pm$ 0.50 (68)

Values are presented as mean  $\pm$  standard error (n). | Abbreviations: GH = General Hospital; ITC = Independent Treatment Centre

Appendix 7.E. The relationship between quality and facility type (i.e. ITC versus General Hospital), 2016

Dependent variable	Cataract <sup>1</sup>		Carpal Tunnel Syndrome		Total Knee Replacement		Total Hip Replacement		Anterior Cruciate Ligament injury	
	Postoperative ≤1 dioptre of target refraction [0-1]	Postoperative improved visual acuity ≥1 line [0-1]	Postoperative infection [0-1]	Revision within 1 year [0-1]	Revision within 1 year [0-1]	Revision within 1 year [0-1]	Revision within 1 year [0-1]	Revision within 1 year [0-1]		
<b>Model 1a</b>	n=84	n=85	n=87	n=76	n=74	n=80				
GH	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference		
ITC	0.21 ± 0.13	-0.10 ± 0.15	-0.11 ± 0.10	0.14 ± 0.19	0.01 ± 0.17	-0.41 ± 0.22				
<b>Model 1b</b>	n=85	n=85	n=86	n=76	n=74	n=81				
Number of surgeries (x100)	-0.02*** ± 0.01	-0.01 ± 0.01	-0.00 ± 0.05	-0.09** ± 0.04	0.03 ± 0.03	-0.10 ± 0.09				
Process / structure	0.17 ± 0.16	0.27** ± 0.13	-0.31 ± 0.19	-0.04 ± 0.08	0.04 ± 0.10					
No chain affiliation	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference		
Chain affiliation	0.15 ± 0.14	-0.02 ± 0.14	0.16 ± 0.17	-0.04 ± 0.12	-0.19 ± 0.12	0.02 ± 0.17				
<b>Model 1</b>	n=84	n=85	n=86	n=76	n=74	n=81				
GH	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference		
ITC	0.18 ± 0.13	-0.12 ± 0.16	-0.10 ± 0.09	0.24 ± 0.24	0.06 ± 0.16	-0.17 ± 0.31				
Number of surgeries (x100)	-0.01 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.05	-0.10** ± 0.04	0.03 ± 0.03	-0.07 ± 0.10				
Process / structure	0.19 ± 0.16	0.25** ± 0.12	-0.30 ± 0.19	0.04 ± 0.14	0.05 ± 0.11					
No chain affiliation	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference		
Chain affiliation	0.06 ± 0.13	-0.00 ± 0.15	0.17 ± 0.17	-0.04 ± 0.12	-0.19 ± 0.12	0.02 ± 0.17				

Values are presented as coefficient ± clustered standard error.

Abbreviations: GH = General Hospital; ITC = Independent Treatment Centre.

1) The dependent variables of the cataract models are positively framed (one-inflated beta regressions), where the others are negatively framed (zero-inflated beta regressions).

\*\*\* p<0.01, \*\* p<0.05

**Appendix 7.F. Zero-or-one inflated beta regression models on quality in relation to facility type (i.e. ITCs versus General Hospitals plus specialist- and academic hospitals), 2017**

Dependent variable	Cataract <sup>1</sup>		Carpal Tunnel Syndrome	Total Knee Replacement	Total Hip Replacement	Anterior Cruciate Ligament injury
	Postoperative ≤1 dioptre of target refraction [0-1]	Postoperative improved visual acuity ≥1 line [0-1]				
<b>Model 1a</b>	n=103	n=103	n=95	n=89	n=86	n=89
H	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
ITC	0.16 ± 0.10	0.14 ± 0.14	0.07 ± 0.17	0.51 ± 0.32	0.66*** ± 0.16	-0.69** ± 0.28
<b>Model 1</b>	n=103	n=103	n=95	n=89	n=86	n=89
H	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
ITC	0.35*** ± 0.12	0.08 ± 0.14	-0.19 ± 0.14	0.37 ± 0.73	0.54 ± 0.31	-0.76*** ± 0.29
Number of surgeries (x 100)	0.01 ± 0.01	-0.01 ± 0.00	-0.19*** ± 0.07	-0.11** ± 0.04	-0.07 ± 0.04	0.04 ± 0.11
Process / structure	0.21 ± 0.19	-0.11 ± 0.16	-0.11 ± 0.19	0.02 ± 0.16	0.11 ± 0.12	
No chain affiliation	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
Chain affiliation	0.30** ± 0.12	-0.01 ± 0.15	0.22 ± 0.18	-0.17 ± 0.38	-0.34 ± 0.22	-0.18 ± 0.26

Values are presented as coefficient ± clustered standard error.

Abbreviations: H = General Hospitals, Academic Hospitals and Specialist Hospitals; ITC = Independent Treatment Centre.

1) The dependent variables of the cataract models are positively framed (one-inflated beta regressions), where the others are negatively framed (zero-inflated beta regressions).

\*\*\* p<0.01, \*\* p<0.05

### Appendix 7.G. Relation price and facility type (i.e. ITCs versus General Hospitals plus specialist- and academic hospitals), 2017

	Cataract	Carpal Tunnel Syndrome (CTS)	Total Knee Replacement (TKR)	Total Hip Replacement (THR)	Anterior Cruciate Ligament injury (ACL)
Dependent variable	List price surgery [€]	List price surgery [€]	List price surgery [€]	List price surgery [€]	List price surgery [€]
<b>Model 2</b>	n=103	n=93	n=92	n=88	n=90
H	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
ITC	-64.13 ± 40.15	45.22 ± 53.99	2.45 ± 526.06	252.45 ± 417.62	111.54 ± 188.31
Number of Surgeries (x 100)	-4.37*** ± 1.47	-2.55 ± 10.34	-57.64 ± 68.01	-62.42 ± 52.70	-53.86 ± 83.84
Process / structure	-16.38 ± 41.52	108.29 ± 55.39	-117.57 ± 228.85	-53.39 ± 139.98	
No chain affiliation	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
Chain affiliation	-27.35 ± 44.32	-27.17 ± 42.72	-347.00 ± 306.02	-373.49 ± 314.00	448.89 ± 337.32

Values are presented as coefficient ± clustered standard error.

Abbreviations: H = General Hospitals, Academic Hospitals and Specialist Hospitals; ITC = Independent Treatment Centre.

\*\*\* p<0.01, \*\* p<0.05

### Appendix 7.H. Quality in relation to facility type with outliers, 2017

	Total Knee Replacement	Anterior Cruciate Ligament injury
Dependent variable	Revision within 1 year [0-1]	Revision within 1 year [0-1]
<b>Model 1a</b>	n=79	n=80
GH	<i>Reference</i>	<i>Reference</i>
ITC	0.79** ± 0.37	-0.47 ± 0.34
<b>Model 1</b>	n=79	n=80
GH	<i>Reference</i>	<i>Reference</i>
ITC	0.94 ± 0.50	-0.41 ± 0.37
Number of surgeries (x100)	-0.03 ± 0.05	-0.03 ± 0.13
Process / structure	0.10 ± 0.19	
No chain affiliation	<i>Reference</i>	<i>Reference</i>
Chain affiliation	0.15 ± 0.15	0.11 ± 0.19

Values are presented as coefficient ± clustered standard error.

Abbreviations: GH = General Hospital; ITC = Independent Treatment Centre.

\*\*\* p<0.01, \*\* p<0.05





# Chapter

# 8.

## **Do independent treatment centres offer more value than general hospitals? The case of cataract care**

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## Abstract

**Objective.** To identify differences between independent treatment centres (ITCs) and general hospitals (GHs) regarding costs, quality of care, and efficiency.

**Data sources.** Anonymous claims data (2013-2015) were used. We also obtained quality indicators from a semi-public platform.

**Study design.** This study uses a comparative multi-level analysis, controlling for case-mix, to evaluate the performance of ITCs and GHs for patients diagnosed with cataract.

**Data collection.** Reimbursement claims were extracted from existing claims databases of the largest Dutch health insurer. Quality indicators were obtained by external agencies through a mixed-mode survey.

**Principal findings.** There are no stark differences in complexity of cases for cataract care. ITCs seem to perform surgeries more frequently per care pathway, but conduct a lower number of healthcare activities per surgical claim. Total average costs are lower in ITCs compared with GHs, but when adjusted for case-mix, the differences in costs are lower. The findings with the adjusted quality differences suggest that ITCs outperform GHs on patient satisfaction, but patients' outcomes are similar.

**Conclusion.** This finding supports the postulation – based on the focus factory theory – that ITCs can provide more value for cataract care than GHs.

**Keywords.** Efficiency, healthcare costs, independent treatment centres, quality of care, value

## 8.1. Introduction

Provoked by the increasing pressure to sustain rising health care costs, policymakers are seeking for more efficient ways to organise healthcare delivery. To pursue the vision of a value-based healthcare system (measuring outcomes, costs, and creating integrated practice units), some scholars proposed to utilise more specialised services instead of full-service providers.<sup>507</sup> The theoretical assumption behind this argues that specialisation provides the right conditions to improve efficiency and quality of care. Reallocating (ambulatory) elective care from full-service hospitals (i.e. academic and general hospitals) to independent treatment centres (ITCs) could be one important response to improve efficiency within the broader healthcare system.

ITCs are usually smaller independent providers which generally focus on one patient group, specialism or treatment.<sup>75</sup> In several healthcare systems, ITCs are more profit oriented than general hospitals (GHs).<sup>33</sup> ITCs seem to embody to a greater extent the theoretical concept of the focus factory.<sup>74,76,475</sup> This theory postulates that harmonising the care-portfolio and specialisation would lead to better performance due to repetition, experience and homogeneity of tasks. The aim would be to enhance the expertise of the healthcare provider and improve efficiency. These efficiency gains could then lower operational costs,<sup>75,508</sup> through standardisation and by reallocating expertise and equipment to just one place. Subsequently, reductions in overhead costs could be made possible. Furthermore, quality could be improved by means of routine and cultivating from continued learning. In line with Michael Porter's theory of Value-Based Health Care which defines value as patient-related outcomes relative to costs,<sup>507</sup> ITCs would theoretically achieve more value for the same procedure compared with full-service hospitals.

In many countries, the number of ITCs has risen steeply over the past decades. This increase is partly due to technological advances: more treatments can be reallocated to ambulatory care settings. Also, policymakers became more receptive toward ITCs, since many healthcare systems opted for a more market-driven system. In the United States (US), the number of Medicare-certified ITCs (called independent Ambulatory Surgery Centres in the US) doubled between 1991 and 2001 (1460-3371), but recently this growth has slowed down.<sup>77,78</sup> In the United Kingdom (UK), the number of ITCs peaked in the mid-90s and has been declining since,<sup>509</sup> however, the total spending on the ITC-sector increased with 39% between 2013-2014 and 2016-2017.<sup>79</sup> In the Netherlands, the number of ITC concerns has been growing steadily from 81 in 2008 to 241 in 2015.<sup>321</sup> ITCs started to emerge in the Netherlands when an act (1998) came into force allowing ITCs to provide reimbursable medical care for a limited array of treatments. That act was introduced in order to reduce waiting lists and to gain control over the for-profit clinics.<sup>44,299</sup> The formal distinction between ITCs and hospitals was abolished with the introduction of the Health Care Institutions Admission Act in 2005, which regulates the approval of reimbursable care providers. Now, both hospitals and ITCs are formally defined as medical

specialist care providers; however, ITCs are still different in practice and categorised as different types of entity, by, for instance, patients associations, health insurers and ITCs themselves.

Some empirical evidence on the relative performance of ITCs exists, most of which comes from the US. However, comparative studies scrutinising cost and quality simultaneously are lacking. The studies that analysed quality of care either find equivocal results<sup>318,320</sup> or find no clear medical quality advantages for ITCs over full-service hospitals.<sup>114</sup> Studies covering patients' experiences are also inconsistent, with one UK study finding no significant differences for the overall reported patients' experiences,<sup>463</sup> whereas one other study identified higher satisfaction rates among ITCs users compared with National Health Service (NHS) facilities.<sup>464</sup> In contrast, the independent sector in the UK charged higher prices than NHS hospitals (unclear whether this disparity still exists),<sup>510</sup> and evidence points to the fact that ITCs in the UK are not always more efficient – only patients with hip or knee replacements had a shorter length of stay when treated in an ITC.<sup>119</sup> At the same time, findings from both the UK and the US suggest that ITCs might be cherry-picking and treat less complex patients compared with hospitals.<sup>97,119,120,496,511,512</sup>

From the demand side, it seems that the characteristics of patients seeking care from ITCs differ from those of patients seeking care from hospitals. The independent sector in the UK historically serves the interests of private practices of NHS consultants and target a more affluent clientele with additional amenities and shorter waiting lists.<sup>119,33</sup> Also in the US, patients who are not insured via Medicaid more often chose to visit an ITC.<sup>120</sup> In the Netherlands, there is still a knowledge gap regarding the patterns of referral for patients visiting ITCs. One report from 2013 provides more insight on the motivations underlying patients' choice of healthcare provider: patients going to ITCs often make the choice themselves (43%) – fewer of whom make a choice themselves to opt for care in a GH (38%).<sup>474</sup> Furthermore, not all ITCs are contracted by all health insurers, while GHs more often are contracted by all four major health insurers – with a contracting index of 0.53 for ITCs and 0.88 for hospitals.<sup>513</sup> Therefore, people with a comprehensive indemnity healthcare insurance package will probably be more inclined to opt for ITCs. These insurance packages cover ITC care even when the ITC has no contract from this respective health insurer. From this perspective, people who could afford a comprehensive indemnity healthcare insurance package – people with a higher socioeconomic status (SES) – might have better access to ITCs. However, a recent report found no relationship between income and the choice for those insurance coverage that limits the choice of healthcare providers.<sup>514</sup> Another reason why there might be a certain selection of patients visiting ITCs is that, according to guidelines set by the Dutch healthcare inspectorate, ITCs should refrain from treating patients of ASA (American Society of Anesthesiologists) type III, which are patients with severe systemic diseases.<sup>515</sup>

This study focuses on cataract care, a care modality often provided by ITCs. Cataract care is a classic example that illustrates the shift from inpatient care toward ambulatory care settings: *“Cataract surgery has dramatically evolved from a procedure done almost exclusively as a routine inpatient procedure with a hospital stay up to 1 week to an outpatient operation with minimal limitations on the patient’s postoperative activity.”*<sup>516, p.146</sup> In the Netherlands, most cataract surgical procedures are now outpatient and ITCs play a substantial role in delivering them.<sup>299,517</sup> There is a growing need to optimise cataract care delivery due to ageing societies which means that the demand for cataract surgery will increase.<sup>505</sup>

In 2006, the Netherlands implemented a number of market-oriented reforms of the healthcare system and the ITC enterprises subsequently grew. The focus factory theory would predict that ITCs would provide better value, but there remains uncertainty as to whether ITCs really do outperform GHs. To the best of our knowledge, this is the first study that scrutinises the performance of ITCs in the Dutch healthcare system and assesses the added value of ITCs. Cataract surgery provided by ITCs is compared with GHs over the period 2013 to 2015. Our aim was to provide insight into the case-mix adjusted differences between ITCs and GHs regarding costs, quality and efficiency.

## 8.2. Methods

### 8.2.1. Data

Our data are based on (anonymous) insurer claims and cover the period 2013-2015. We were able to include 4.5 million beneficiaries who were covered by the insurance company Achmea. This sample is highly representative: Achmea had a market share of 31.1% in 2015, making it the biggest health insurer in the Netherlands.<sup>518</sup> Achmea has the highest market share across a wide geographic area in the Netherlands whereas three other largest health insurers are more geographically concentrated. Achmea claims data therefore offer a good degree of geographical representativeness.<sup>519</sup> Furthermore, the beneficiaries of the main health insurers reflect the diversity of the Dutch population, because the health insurers cross-subsidise costs among the more loss-making and more profit-generating clientele.<sup>520</sup> We extracted ophthalmological claims for people with a cataract diagnosis, based on the diagnosis code included in the claims data. All individual ophthalmological claims within a single year were obtained.

We use the annual cross-sectional inclusion of claims per patient to define the patients’ care pathway. This means that all the ophthalmological claims that were claimed that year for one specific patient diagnosed with cataract were assigned to their patients’ care pathway. Patients who received care from multiple providers during their care pathway were excluded from analysis, constituting between 1.6% and 2.0% of the patients. Data on quality of care were obtained from a platform that collects quality measures for health insurers. This specific database is owned

and managed by the national database for insurers (Vektis). The quality data were obtained by means of a mixed-mode survey (not part of the current study), contracting two different external parties to manage the data collection. The national number of cataract surgeries per provider was attained from the same platform (Vektis). Data were linked through a unique identifier assigned by Vektis and are on concern level (a concern can have multiple locations). This unique identifier was also used to identify ITCs and GHs as the identifier codes are structured in such a way that the type of provider can be easily detected. Comparisons between GHs and ITCs are our main interest because academic and tertiary care hospitals deviate too much from the ITC organisational model, mainly because of their teaching objectives and their more complex patient base. Tertiary care and academic hospitals were categorised manually by means of the identifier codes. The descriptive statistics of these types can be found in Appendix 8.A.

### 8.2.2. Study variables

In the Netherlands, providers are paid through a diagnostic-related groups system. Such groups are called “care products” (DRGs), and also include outpatient care.<sup>343</sup> For the care products used in this study, the price per DRG is determined through bilateral negotiations between health insurers and providers. Volume encompasses the total number of DRGs claimed in one care pathway, which could, for example, be consultation and diagnostic DRGs. Two types of cataract surgical DRGs are included: complex and standard. The number of healthcare activities contained in one surgical reimbursed DRG serves as a measure for efficiency. The different healthcare activities are categorised into four categories. These four categories contain the following number of activities: 14 diagnostic, 5 anaesthetic, 4 surgical, 2 consultation activities and 1 day care admission activity. A cataract surgical DRG has to contain one of the four surgical cataract activities. For example, one surgical DRG can contain one surgical activity, three different diagnostic activities (e.g. biometric test, optical coherence tomography, and an electrocardiographic assessment), and two different consultations. The precise number of activities could only be analysed for 2015 because before that year providers were not obliged to share this information with their health insurers.

The patient characteristics should determine the possible case-mix differences. Besides age and gender, this includes the level of multimorbidity, ocular comorbidity, and SES.<sup>521</sup> SES was derived from the postal codes of the patients, using the SES scores of 2014 provided by The Netherlands Institute for Social Research (Sociaal en Cultureel Planbureau).<sup>392</sup> This proxy is based on education, income, and position in the labour market of all the inhabitants within that neighbourhood. Zero equals the average Dutch neighbourhood, minus zero indicates a lower than average SES neighbourhood, whereas above zero indicates a higher SES than average. To assess possible multimorbidity, we grouped pharmaceutical claims of patients and used those as a proxy to identify if they have one of the 27 chronic conditions included in

the Dutch risk-adjusted contribution classification system. A patient was classified as multimorbid whether they had two or more chronic conditions. We included ocular comorbidity as a separate confounder variable, since ocular comorbidity can have an impact on possible complications after cataract surgery.<sup>522</sup> To measure this, we used a proxy: diabetic type I and II and glaucoma – also obtained from the pharmaceutical claims. The models that include quality were adjusted for total surgical volume, accounting for the volume-quality relationship.<sup>525</sup> This includes the total number of cataract surgical claims per provider, so not solely the claims filled by Achmea.

Finally, we used patient-reported data from the Dutch Consumer Quality Index Cataract Questionnaire (CQI Cataract) to assess for quality of cataract surgery.<sup>523</sup> The quality indicators are the Net Promoter Score (NPS) and a patient-reported outcome measure (PROM). The NPS is a common management tool to measure patient satisfaction and asks the opinion of patients on *“How likely is it that you would recommend this hospital or clinic for a cataract operation to a friend or colleague?”*. The ratio of the number of promoters over the number of detractors makes up the NPS. The PROM used for this study measures the perceived outcome of patients 4 weeks after their cataract surgery based on 12 different questions which measures the patient-reported outcome after surgery. For instance, if the patient, 4 weeks after the cataract operation, can see better at short distance (all PROM questions are available in the Appendix 8.D). Both NPS and PROM were available on the level of the individual providers. We have NPS and PROM data for 2013 and 2014. However, for both years two different PROM scales were used: for 2013, a 4-point ordinal scale was used; for 2014, this was a 5-point scale, which makes comparisons between these two years troublesome.

### 8.2.3. Statistical analysis

Our descriptive statistics outline the unadjusted inter-provider differences regarding the characteristics of cataract patients (i.e. case-mix), type of surgical procedures, volume, price and total costs. A mixed-model approach is used to analyse the association between type of provider (ITCs vs GHs) and the dependent variables: number of healthcare activities (2015), total costs of claims (2013-2015), and the quality parameters NPS and PROM (2013-2014). In the models, we accounted for clustering of patients within hospitals, including a random intercept for provider level, and adjusted for confounders such as case-mix differences. Actual claims costs are skewed to the right; therefore, the total claims costs were logarithmically transformed in the multi-level model. The multi-level models are tested for better fit with the non-transformed costs models utilising the Akaike Information Criterion (AIC).<sup>354</sup> The GHs are used as our reference category.

The mixed model with the number of health activities as dependent variable controls for: (a) SES; (b) multimorbidity; (c) gender; (d) aged 85 or older; and (e) ocular comorbidity. The model, which includes the total log costs as dependent variable, controls for the same case-mix confounders mentioned above, and additionally



controls for: (a) conservative treatment; (b) the number of surgical procedures; and, (c) complex cataract surgery. The model which incorporates both costs and quality, restricts to patients who at least had one surgical cataract procedure. Total costs are used as a control when quality is the dependent variable and vice versa. This last model builds upon the last mentioned model, but adds total volume of the provider as control variable. The volume estimator has three categories (i.e. low volume, middle and high volume providers) and is based on the figures of how volume is distributed: the lower 25% ( $\leq 700$ ), middle ( $>700 < 3000$ ), and upper 25% ( $\geq 3000$ ) of 2013 and 2014.

## 8.3. Results

### 8.3.1. Patient characteristics

Table 8.1. shows the characteristics of the sample of patients per type of provider (2015) (the descriptive statistics of 2013 and 2014 are shown in Appendix 8.B. and 8.C.). The dataset includes 29 cataract ITCs. In total, this dataset contains around 50,000 patients who received cataract care (including academic and tertiary hospitals). In 2013, ITCs had 19.3% share of cataract patients (Appendix 8.B.), which further grew to 24.1% in 2015. The type of treatment provided to patients is relatively similar between ITCs and GHs: around 56% of the cataract patients received standard cataract surgery; 6.5% received complex cataract surgery; and 38% received no surgery.

Patient characteristic statistics illustrate that there are small differences in the complexity of patients for cataract care between ITCs and GHs. The mean age is lower in ITCs. The percentage of patients who are 85 years or older is much lower in ITCs than GHs. The average number of chronic conditions illustrate that ITCs' patients have less comorbidity, and the average number of patients with diabetes indicates possible lower ocular comorbidity. The average SES of patients going to ITCs is higher compared with GHs. Glaucoma is the only indicator that suggests that ITCs might be treating a more complex patient group since in ITCs the number of patients with glaucoma is higher compared with GHs. Glaucoma might have a negative impact on the postoperative visual acuity,<sup>522</sup> but on the other hand, when glaucoma has been detected early enough, a higher share of glaucoma patients does not necessarily reflect the complexity of those treated, because with medication their symptoms can be successfully suppressed.<sup>524,525</sup> In conclusion, these findings indicate that overall complexity of ITC patients for cataract care do not differ strongly from GHs.



**Table 8.1.** Descriptive statistics: provider characteristics, type of treatments, patient characteristics, volume, price and total costs (2015)

		ITCs	Cataract GHs
<i>Provider characteristics</i>			
Total number of providers	N	29	52
Number of patients	N	11526	20901
	%	24.11	43.72
<i>Type of treatment</i>			
Standard cataract surgery	%	55.69	55.92
Complex cataract surgery	%	6.55	5.14
No surgery	%	37.75	38.91
<i>Patient characteristics</i>			
Average Age	Mean	72.26 (9.77)	73.20 (10.1)
<18 years	%	0.08	0.26
>85 years	%	8.32	10.29
Men	%	41.07	42.75
Average number of chronic conditions	Mean	2.15 (1.65)	2.24 (1.72)
Average number of Diabetes I patients	Mean	0.05 (0.22)	0.08 (0.27)
Average number of Diabetes II patients	Mean	0.14 (0.35)	0.18 (0.39)
Average number of Glaucoma patients	Mean	0.30 (0.46)	0.12 (0.33)
SES	Mean	-0.06 (1.20)	-0.28 (1.16)
<i>Volume</i>			
Number of DRGs per patient care pathway of cataract care	Mean	1.45 (0.63)	1.41 (0.63)
Number of cataracts per patients' care pathway	Mean	0.91 (0.81)	0.84 (0.77)
>=2 cataract per patients' care pathway	%	28.42	22.96
<i>Price</i>			
Price DRG for standard cataract surgery	Mean	1009.22 (46.07)	1095.15 (110.51)
Price DRG for complex cataract surgery	Mean	1250.58 (114.99)	1391.07 (154.93)
<i>Total costs</i>			
Total costs for cataract – conservative	Mean	115.43 (58.31)	117.27 (65.41)
Total costs for patients with 1 cataract operation	Mean	1057.38 (109.38)	1151.20 (164.47)
Total costs for patients with 2 cataract operations	Mean	2085.43 (167.86)	2272.05 (287.40)

Standard deviations in parentheses

### 8.3.2. Volume

The number of DRGs and the number of surgical claims show that ITCs submit a slightly higher number of claims during a care pathway than GHs do (Table 8.1). Nevertheless, the average number of surgeries is higher within ITCs, with, on average, 0.91 cataract operations per care pathway, while GHs have an average of 0.84.

### 8.3.3. Price and total claims costs

The descriptive statistics on charged DRG prices and total claims costs of the care pathway are also exhibited in Table 8.1. The DRG prices, which the insurer negotiates with ITCs, are substantially lower for cataract surgery than prices for GHs: on average 85.9 euros less for standard cataract surgery and 140 euros for complex cataract surgery. For patients with one cataract operation, the total cost differences are on average 94 euros per care pathway, and for patients with two cataract operations, this gap widens to 187 euros – both accounting for approximately 8% in cost savings. When patients receive conservative treatment, there seem to be relatively small cost differences between ITCs and GHs. These descriptive findings are consistent over the years 2013 and 2014 (Appendix 8.B. and 8.C.).

When adjusted for case-mix, the total claims costs for cataract care in ITCs stay lower compared with GHs (Table 8.2). However, this difference becomes smaller, to a difference of 5% in 2015 (based on the exponentiated coefficient of  $-0.05$  since the log costs are the outcome variable), compared with the unadjusted descriptive statistics of 8%. In addition, in 2013 ITCs seem to have been, in contrast to 2014 and 2015, actually slightly more expensive than GHs.

**Table 8.2.** Relationship between type of provider (ITCs versus GHs) and the log costs of all claims per patients' care pathway (2013 - 2015)

	2013 log costs	2014 log costs	2015 log costs
<b>GHs</b>	Reference	Reference	Reference
<b>ITCs</b>	0.05*** (0.00)	-0.02*** (0.00)	-0.05*** (0.00)
<b>Observations</b>	47931	47176	47396

Controlled for academic hospitals, tertiary care hospitals, SES, gender, multi-morbidity, ocular comorbidity, aged 85 or over, 2 or more operations, type of operation (conservative and complex)

\*\*\*  $p < 0.01$ . \*\*  $p < 0.05$ . \*  $p < 0.1$

Standard errors in parentheses

### 8.3.4. Efficiency

Efficiency in this study is defined as the number of activities in a surgical claim, where fewer activities are perceived as more efficient. Results in Table 8.3. suggest that ITCs are more efficient in providing cataract surgery. ITCs carry out fewer healthcare activities within each surgical cataract DRG compared with GHs. The day

care procedures (i.e. a number of hours of nursing care spent within a nursing ward) are significantly shorter in ITCs. The number of anaesthetic procedures also depicts a strong contrast: ITCs seem to do no anaesthetic procedures. The explanation for ITCs reporting almost no anaesthetic procedures is because there are no healthcare activities for anaesthetic eye drops. (Anaesthetic eye drops is a commonly used anaesthetic for less-complex patients.<sup>526</sup>) Only optometric therapy is a more frequent procedure among ITCs. This might well correspond with our reasoning that ITCs seem to be more efficient, since optometrists can serve as cheaper substitutes for ophthalmologists.<sup>527</sup>

These differences between ITCs and GHs persist when adjusted for case-mix (Table 8.4.). The efficiency gained by ITCs seems to be higher with complex cataract surgical claims compared with standard cataract surgical claims. Approximately, and on average, (adjusted for case-mix factors) ITCs perform 0.5 fewer activities compared with GHs; for a complex cataract surgical claim, this is approximately 1 activity fewer.

**Table 8.3.** Descriptive statistics of the number of healthcare activities within the surgical cataract DRGs (2015)

		ITCs	GHs
<b>Activities within complex cataract surgery</b>	Total	4.27 (2.02)	5.48 (2.30)
	Diagnostic	0.82 (1.07)	1.04 (1.31)
	Anaesthetics	0.00 (0.07)	0.51 (0.92)
	Day care	0.31 (0.47)	0.72 (0.48)
	Optometric consultation	0.44 (0.57)	0.26 (0.67)
	<b>Activities within standard cataract surgery</b>	Total	4.14 (1.70)
Diagnostic		0.78 (0.95)	0.86 (1.13)
Anaesthetics		0.01 (0.16)	0.38 (0.81)
Day care		0.36 (0.48)	0.57 (0.52)
Optometric consult		0.38 (0.56)	0.25 (0.59)

Standard deviations in parentheses

**Table 8.4.** Relationship between type of provider (ITCs versus GHs) and the number of healthcare activities within the two surgical claims (2015)

	For standard cataract surgical claim	For complex cataract surgical claim
<b>GHs</b>	Reference	Reference
<b>ITCs</b>	-0.42*** (0.03)	-1.19*** (0.10)
<b>Observations</b>	34863	3299

Controlled for academic hospitals, tertiary care hospitals, SES, gender, multi-morbidity, ocular comorbidity, gender, aged 85 or over

\*\*\* p<0.01. \*\* p<0.05. \* p<0.1

Standard errors in parentheses

### 8.3.5. Patient Value

Table 8.5. illustrates that, when the model controls for quality, the claims costs in ITCs remain lower compared with GHs for both 2013 and 2014 with 7% ( $\exp(-0.07) \approx 0.93$ ). This is higher than the model with the adjusted claims costs (Table 8.2) (5% difference), which does not control for quality differences, which means that ITCs perform better when quality of care is also taken into account. Quality differences between ITCs and GHs demonstrate that ITCs score significantly better on the NPS compared with GHs. However, the dissimilarity of the PROM scores is marginal and inconsistent. In other words, ITCs seem to perform better on patient satisfaction compared with GHs, but there are no differences in the patient-reported outcomes after cataract surgery.

**Table 8.5.** Relationship between type of cataract care provider (ITCs versus GHs) and the log costs of all claims per patients' care pathway and quality of care (NPS and PROM), rotating log costs and quality of care as outcome or control variable (2013 & 2014)

	Cataract 2013 log costs <sup>a</sup>	Cataract 2014 log costs <sup>a</sup>	Cataract 2013 NPS <sup>b</sup>	Cataract 2014 NPS <sup>b</sup>	Cataract 2013 PROM <sup>b</sup>	Cataract 2014 PROM <sup>b</sup>
<b>GHs</b>	Reference	Reference	Reference	Reference	Reference	Reference
<b>ITCs</b>	-0.07*** (0.00)	-0.07*** (0.00)	0.16*** (0.00)	0.13*** (0.00)	0.01*** (0.00)	-0.01*** (0.00)
<b>Observations</b>	29486	28582	29486	28582	29486	28582

Controlled for academic hospitals, tertiary care hospitals, SES, gender, multi-morbidity, ocular comorbidity, aged 85 or over, high and low volume providers, 2 or more operations, type of operation (complex)

a. controlled for NPS and PROM

b. controlled for log costs

\*\*\* p<0.01. \*\* p<0.05. \* p<0.1

Standard errors in parentheses

## 8.4. Discussion

Our results indicate that ITCs, compared with GHs, can be value-adding entities for cataract care. This finding supports the “focus factory” thesis that typify ITCs. Total costs of cataract claims are lower for ITCs compared with GHs, although the adjusted cost differences are somewhat smaller than the unadjusted costs. Lower costs seem to be partly driven by lower negotiated prices, since ITCs tend to have a slightly higher number of claims per cataract care pathway. Our findings suggest that ITCs are able to offer those lower prices for cataract surgery, due to performing less healthcare activities within cataract surgical claims and through more intense use of optometrists. In addition, lower fixed costs (e.g. lower overhead) and perhaps lower margins could be other reasons why cataract ITCs are able to offer lower prices. With respect to quality of care, the results are mixed. NPS scores are significantly higher for ITCs compared with GHs, while differences in the PROM scores are inconsistent and marginal. In other words, patients’ experiences are better in ITCs, but the differences in patient-reported improvement after cataract surgery are opaque and do not seem to differ. Overall, these quality measures exhibit different results, underlying the need to measure the different quality dimensions.

We find limited selection of low-severity patients for cataract surgery by ITCs, which is in line with the findings in Meyerhoefer et al.,<sup>496</sup> but goes against the studies that do find case-mix differences.<sup>119,120</sup> Furthermore, this study also seems to support that different quality indicators can show contrasting results.<sup>318</sup> A general trend that seems to emerge is that ITCs score better on patients’ satisfaction,<sup>464</sup> but not on patient-reported outcomes of the treatment.<sup>320</sup>

This study has some strengths. We were able to use claims data from a big sample of the Dutch population utilising multiple years. Secondly, this study is one of the first that empirically studies the relative performance of the ITC-market in a number of areas (i.e. costs, quality and efficiency). Thirdly, this study takes a broader perspective of the patients’ care pathway, instead of only comparing surgical claims. Fourthly, we were able to separate claim reimbursements from actual activities, identifying process efficiency differences between ITCs and GHs.

Our study is also subject to some limitations. (a) The quality indicators used in this study were not optimal. Quality data for cataract surgery were on provider-level, and not individual treatment level. In addition, the PROM scores were part of the CQI questionnaire, but were derived from the non-validated part. (b) The study design adjusts for relevant case-mix differences; however, we cannot exclude the possibility that unobserved case-mix differences influenced our results. Case-mix differences can be a serious confounder because the referral patterns seem to differ between ITC and GH patients. Quasi-experimental evaluation tools should be considered for future research, when longitudinal and/or more detailed data become available, to limit the unobserved variances between ITCs and GHs. This is especially relevant for treatments for which the outcomes are more case-mix dependent (e.g.

total hip replacements). For instance, Instrumental Variable models could be used for this purpose. These models should then take into account potential selection bias at two different levels (i.e. provider and patient).<sup>528</sup> (c) The proxy used in this study to measure patients' care pathway is a relatively crude measure since it is based on the annual cross-sectional claims. This study would ideally have used the patients' care pathway identifier, which is included in the Dutch claims data, but due to serious irregularities, this identifier was deemed unreliable. (d) There is a risk that our proxy for efficiency – the number of healthcare activities – might not fully capture the differences in the resources used since this could vary by the different healthcare activities. (e) An additional limitation is that hospital may systematically cross subsidise their activities on more competitive markets such as cataract surgery. However, due to negotiated global budgets with the additional requirement to deliver additional services if patients need them, the actual room to cross-subsidise has become more limited in recent years.

This study contributes to our limited understanding of the relative performance of ITCs compared with GHs. However, some important questions remain unanswered. The first question is whether the care provided by ITCs serves as a substitute for hospital care. US findings reveal that a growing penetration of ITCs does not necessarily induce a decline in ICT-sensitive services in hospitals.<sup>529</sup> The second question, relates to the concern whether suppliers induce demand. Several studies from the US have indicated that this is sometimes the case,<sup>530,531</sup> particularly among physician-owned healthcare providers.<sup>114</sup> Based upon our own estimation, of the ITCs contracted for cataract care, 68% are physician-owned. The phenomenon of supplier-induced demand could very well affect the Dutch physician owners. They do need to maintain and improve the financial health of their organisation because their incomes depend on it. However, in the Netherlands, the extent of these financial incentives is limited; not only does the Netherlands prohibit healthcare providers from allocating profits to owners or third parties but it also imposes a salary cap on Dutch physicians who are board members of ITCs. We note that the US' prohibition on self-referrals under the Stark Laws also tries to limit the issue of undesirable incentives. (This is a restriction which the Netherlands has not imposed.) Notwithstanding the regulation already in place, policymakers and healthcare purchasers should consider the possibilities of supplier-induced demand when designing reimbursement legislation and contracting strategies. Thirdly, we have found that ITCs more often carry out two cataract operations per care pathway than GHs. It is beyond the scope of this study to assess whether this indicates that ITCs are undertaking unnecessary cataract operations but it does raise concerns which merits further investigation. Fourthly, this study cannot exclude the possibility of upcoding practices. Our findings do hint toward concerns of this sort. We observe an irregular combination of a higher number of DRGs and cataract operations per care pathway among ITCs, but a lower number of activities within each claim, while at the same time most case-mix indicators indicate that ITCs are not treating a more

complex patient base compared with GHs. Nevertheless, DRGs are automatically defined from the filled healthcare activities, and upcoding might be less plausible than the idea that efficiency gains drive our finding.

The role of ITCs within future healthcare systems is still up for debate. Currently, GHs need to continue providing elective ambulatory care surgery if they are to ensure their long-term financial survival; therefore, GHs will likely resist the reallocation of these services to ITCs. Moreover, increasing ITC penetration may increase the risks of efficiencies of scope driving out efficiencies of scale. In conclusion, for some elective surgeries ITCs could potentially enhance value of modern healthcare systems, but policymakers do need to be alert to possible adverse effects.

## 8.5. Appendix

### Appendix 8.A. Descriptive statistics tertiary and academic hospitals (2015)

		Academic hospitals	Tertiary care hospitals
<i>Provider characteristics</i>			
Total number of providers		8	19
Number of patients	N	2108	13267
	%	4.41	27.75
<i>Type of treatment</i>			
Standard cataract surgery	%	43.93	53.8
Complex cataract surgery	%	11.67	7.25
No surgery	%	43.93	38.92
<i>Patient characteristics</i>			
Average Age	Mean	66.19 (16.28)	72.42 (10.11)
<18 years	%	3.32	0.17
>85 years	%	6.07	9.14
Men	%	49.00	43.40
Average number of pharmaceutical products	Mean	2.30 (1.84)	2.38 (1.75)
Average number of Diabetes I patients	Mean	0.11 (0.32)	0.09 (0.29)
Average number of Diabetes II patients	Mean	0.16 (0.37)	0.21 (0.40)
Average number of Glaucoma patients	Mean	0.29 (0.45)	0.19 (0.39)
SES	Mean	-0.24 (1.29)	-0.23 (1.20)
<i>Volume</i>			
Number of DRGs per patient journey of cataract care	Mean	1.47 (0.73)	1.40 (0.61)
Number of cataract operations per patient journey	Mean	0.67 (0.67)	0.86 (0.79)
>=2 cataract operations per patient journey	%	11.1	24.63
<i>Price</i>			
Price DRG for standard cataract surgery	Mean	1207.11 (72.23)	1091.45 (127.16)



		Academic hospitals	Tertiary care hospitals
Price DRG for complex cataract surgery	Mean	1844.82 (495.14)	1361.35 (105.61)
<i>Total costs</i>			
Total costs for cataract care – conservative	Mean	173.63 (131.14)	119.05 (72.79)
Total costs for patients with 1 cataract	Mean	1413.34 (370.80)	1149.67 (173.48)
Total costs for patients with 2 cataract	Mean	2734.85 (623.77)	2262.29 (284.93)
Standard deviations in parentheses			

### Appendix 8.B. Descriptive statistics: provider characteristics, type of treatments, patient characteristics, volume, price and total costs (2013)

		ITCs	GHs
<i>Provider characteristics</i>			
Total number of providers	N	29	62
Number of patients	N	10097	24656
	%	19.3%	47.0%
<i>Type of treatment</i>			
Standard cataract surgery	%	56.37	55.34
Complex cataract surgery	%	5.85	3.77
No surgery	%	37.77	40.89
<i>Patient characteristics</i>			
Average Age	Mean	72.02 (9.72)	72.98 (10.12)
<18 years	%	0.03	0.20
>85 years	%	8.07	9.64
Men	%	39.83	42.34
Average number of chronic conditions	Mean	2.11 (1.65)	2.28 (1.70)
Average number of Diabetes I patients	Mean	0.04 (0.20)	0.09 (0.28)
Average number of Diabetes II patients	Mean	0.13 (0.34)	0.20 (0.40)
Average number of Glaucoma patients	Mean	0.30 (0.46)	0.12 (0.32)
SES	Mean	-0.07 (1.24)	-0.29 (1.16)

		ITCs	GHs
<i>Volume</i>			
Number of DRGs per patient journey of cataract care	Mean		
Number of cataract operations per patient journey	Mean	0.90 (0.81)	0.80 (0.76)
>=2 cataract operations per patient journey	%	27.6	20.97
<i>Price</i>			
Price DRG for standard cataract surgery	Mean	1147.41 (45.28)	1231.10 (178.03)
Price DRG for complex cataract surgery	Mean	1316.49 (49.41)	1363.57 (331.41)
<i>Total costs</i>			
Total costs for cataract care – conservative	Mean	138.01 (74.83)	119.45 (81.28)
Total costs for patients with 1 cataract operation	Mean	1195.39 (102.62)	1294.04 (219.36)
Total costs for patients with 2 cataract operations	Mean	2350.67 (145.71)	2487.15 (386.54)
Standard deviations in parentheses			

### Appendix 8.C. Descriptive statistics: provider characteristics, type of treatments, patient characteristics, volume, price and total costs (2014)

		ITCs	GHs
<i>Provider characteristics</i>			
Total number of providers	N	27	59
Number of patients	N	11072	21875
	%	22.5	44.4
<i>Type of treatment</i>			
Standard cataract surgery	%	55.21	55.50
Complex cataract surgery	%	6.42	4.22
No surgery	%	38.35	40.27
<i>Patient characteristics</i>			
Average Age	Mean	72.20 (9.85)	72.98 (10.02)
<18 years	%	0.08	0.15
>85 years	%	8.03	9.66
Men	%	39.51	41.81

		ITCs	GHS
Average number of chronic conditions	Mean	2.12 (1.64)	2.24 (1.70)
Average number of Diabetes I patients	Mean	0.05 (0.22)	0.08 (0.28)
Average number of Diabetes II patients	Mean	0.13 (0.34)	0.19 (0.39)
Average number of Glaucoma patients	Mean	0.29 (0.45)	0.12 (0.33)
SES	Mean	-0.06 (1.20)	-0.31 (1.18)
<i>Volume</i>			
Number of DRGs per patient journey of cataract care	Mean	1.40 (0.58)	1.34 (0.57)
Number of cataract operations per patient journey	Mean	0.86 (0.78)	0.78 (0.74)
>=2 cataract operations per patient journey	%	24.73	18.62
<i>Price</i>			
Price DRG for standard cataract surgery	Mean	1072.08 (73.01)	1164.57 (156.39)
Price DRG for complex cataract surgery	Mean	1284.27 (83.87)	1451.95 (204.28)
<i>Total costs</i>			
Total costs for cataract care – conservative	Mean	129.05 (67.51)	123.76 (71.14)
Total costs for patients with 1 cataract operation	Mean	1128.21 (124.68)	1216.40 (189.48)
Total costs for patients with 2 cataract operations	Mean	2193.03 (180.31)	2387.61 (341.06)
Standard deviations in parentheses			

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**Appendix 8.D. PROM questions - in Dutch and with our own English translation**


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Hoe gaat het volgende bij u: goed dichtbij kunnen zien?

*How would you assess the following: seeing well close by?*

---

Hoe gaat het volgende bij u: samenwerking tussen beide ogen?

*How would you assess the following: coordination between both eyes?*

---

Hoe gaat het volgende bij u: gevoel van onafhankelijkheid?

*How would you assess the following: sense of independence?*

---

Hoe gaat het volgende bij u: goed veraf kunnen zien?

*How would you assess the following: seeing well from far away?*

---

Hoe gaat het volgende bij u: doen van de normale bezigheden?

*How would you assess the following: doing normal activities?*

---

Hoe gaat het volgende bij u: geen last hebben van felle lichten?

*How would you assess the following: bright lights bothering you?*

---

Hoe gaat het volgende bij u: mogelijkheid tot deelname aan het verkeer?

*How would you assess the following: possibility to participate in traffic?*

---

Hoe gaat het volgende bij u: geen dingen dubbel zien?

*How would you assess the following: not seeing things in double vision?*

---

Hoe gaat het volgende bij u: goed op middelgrote afstanden kunnen zien?

*How would you assess the following: good vision at medium distances?*

---

Hoe gaat het volgende bij u: helder en kleurrijk zien van dingen?

*How would you assess the following: seeing the colours clearly?*

---

Hoe gaat het volgende bij u: goed erg dichtbij kunnen zien?

*How would you assess the following: seeing well from very close by?*

---

Hoe gaat het volgende bij u: geen dingen wazig zien?

*How would you assess the following: not seeing things blurred?*

---

**Options for answering 2013**


---

Veel slechter dan verwacht	Slechter dan verwacht	Zoals verwacht	Beter dan verwacht	Veel beter dan verwacht
<i>Much worse than expected</i>	<i>Worse than expected</i>	<i>As expected</i>	<i>Better than expected</i>	<i>Much better than expected</i>

---

**Options for answering 2014**


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Nu veel slechter dan voor de operatie	Geen verschil	Nu beter dan voor de operatie	Nu veel beter dan voor de operatie
<i>Now much worse than expected</i>	<i>No difference</i>	<i>Now better than expected</i>	<i>Now much better than expected</i>

---





# Chapter

# 9.

**How the logics of the market, bureaucracy, professionalism and care are reconciled in practice: an empirical ethics approach**

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## Abstract

**Background:** In the Netherlands, the for-profit sector has gained a substantial share of nursing home care within just a few years. The ethical question that arises from the growth of for-profit care is whether the market logic can be reconciled with the provision of healthcare. This question relates to the debate on the Moral Limits of Markets (MLM) and commodification of care.

**Methods:** The contribution of this study is twofold. Firstly, we construct a theoretical framework from existing literature; this theoretical framework differentiates four logics: the market, bureaucracy, professionalism, and care. Secondly, we follow an empirical ethics approach; we used three for-profit nursing homes as case studies and conducted qualitative interviews with various stakeholders.

**Results:** Four main insights emerge from our empirical study. Firstly, there are many aspects of the care relationship (e.g. care environment, personal relationships, management) and every aspect of the relationship should be considered because the four logics are reconciled differently for each aspect. The environment and conditions of for-profit nursing homes are especially commodified. Secondly, for-profit nursing homes pursue a different professional logic from the regular, non-profit sector – one which is inspired by the logic of care and which contrasts with bureaucratic logic. However, insofar as professionals in for-profit homes are primarily responsive to residents' wishes, the market logic also prevails. Thirdly, a multi-level approach is necessary to study the MLM in the care sector since the degree of commodification differs by level. Lastly, it is difficult for the market to engineer social cohesion among the residents of nursing homes.

**Conclusions:** The for-profit nursing home sector does embrace the logic of the market but reconciles it with other logics (i.e. logic of care and logic of professionalism). Importantly, for-profit nursing homes have created an environment in which care professionals can provide person-oriented care, thereby reconciling the logic of the market with the logic of care.

**Keywords:** Moral limits of markets, long-term care, commodification, empirical ethics



## 9.1. Introduction

The for-profit nursing home sector in the Netherlands grew substantially in a short period of time: 50% of for-profit homes opened within the last three years (2019).<sup>84</sup> This is not an isolated Dutch phenomenon; for-profit providers' share of long-term care (LTC) provision grew substantially in other Western countries as well, including in the United Kingdom, the United States and the Nordic countries.<sup>56,58,372,385,386</sup> The increasing prevalence of business-oriented providers in various healthcare systems has sparked the interest of many moral philosophers.<sup>16-18</sup> They question whether the influence of market rationalities within the healthcare sector is desirable since commercial interests can potentially conflict with other rationalities (e.g. fairness). This reflects the wider Moral Limits of Markets (MLM) debate, which asks whether market mechanisms are an appropriate means of distributing every type of good or service. The concern is that the market for some goods may lead to an unjust distribution of goods or that the market erodes the value of the good.<sup>17,18,532</sup>

This study adds to the MLM debate in two ways. Firstly, the MLM debate often discusses the contested sphere (e.g. the healthcare sector) as a whole but does not so much assess and differentiate the dynamics within that sphere. Hence, it tends to neglect the complexity and variety inherent in healthcare systems. Secondly, the MLM debate is primarily held on a theoretical level. Less is known about how values manifest themselves – and how the various healthcare stakeholders respond to market forces – in practice. This study empirically assesses these issues within the context of the MLM debate using the for-profit nursing home sector as our case study.

This study is limited to for-profit nursing homes. The nursing home sector is an especially instructive case for the MLM debate because this sector exaggerates concerns about vulnerability, solidarity, dependency and mortality. In addition, the Dutch context is of particular interest because the LTC reform in 2015 introduced market forces and boosted the creation of a for-profit market for individuals to choose and organise their own care. We look specifically at the for-profit sector because we postulate that for-profit nursing homes are particularly influenced by the market logic compared to the public and non-profit homes. Hence, we argue that this sector offers a valuable case for studying how the four logics are balanced, prioritised and reconciled in practice. Given the recent growth of for-profit provision nursing home care in the Netherlands, it is of particular policy interest to put these for-profit homes under the moral microscope. In a similar vein, the increasing commercialisation of the LTC sector in the Netherlands could offer new insights for the MLM debate.

Some important features of the Dutch for-profit nursing homes are worth pointing out in advance. The nursing home sector has historically been dominated by non-profit nursing homes. The Dutch LTC sector does not have public nursing home providers. For-profit nursing homes are relatively small: the average number of clients in the traditional non-profit sector is 64, while there are 19 clients on average in for-profit nursing homes.<sup>84</sup> There is a lack of quantitative information

about case-mix differences between for-profit and non-profit nursing homes, but there are indications that for-profit nursing homes have a lighter case-mix compared to non-profit nursing homes.<sup>83</sup> Furthermore, for-profit nursing homes tend to serve a more affluent clientele.<sup>83,84</sup> Appendix 9.A. provides a detailed description of the institutional background of the LTC sector and how the number of for-profit nursing homes in the Netherlands has grown.

In order to have a theoretical tool to analyse our empirical findings, we constructed a theoretical framework by compiling and synthesising previous theoretical contributions on this topic. The theoretical framework defines different “logics” and their respective values to refine and sharpen the MLM debate. Logics are defined as laws of thought or rationales behind practices. (The term “logics” was also used by Annemarie Mol (2006;2008)<sup>21,533</sup>). These logics are important for the MLM debate because it enables discussion about the limits of the market sphere.<sup>532</sup> In our study we define four logics: the market, bureaucracy, professional and care logics.

The central questions of this study are: 1) how are the four different logics reconciled in practice?; and, 2) which logic is dominant for each of the stakeholders (i.e. experts on the for-profit nursing home market, nursing home managers, care workers, family members of residents and residents)? Special focus will be placed on how the logic of the market influences practices within the for-profit nursing home sector and how this is combined with the three other logics (bureaucracy, professionalism and care).

## 9.2. Theoretical framework

### *Four different logics*

The theoretical framework consists of four logics. Three of the four logics are based on the contribution of Freidson.<sup>534</sup> He contrasted the logics of the market, bureaucracy and professionalism.<sup>534</sup> We consider the logic of care, defined by Mol<sup>533</sup>, to be a necessary addition to the framework to capture the relational process of caring.

Although Freidson’s analysis is sociological and Mol’s analysis is ethical, we argue that they can be brought together in one theoretical framework. Freidson’s logics – the market, bureaucracy and professionalism – are not morally free, they carry moral codes, values and motives. (Sociology and ethics are closely tied for good reason.<sup>535</sup>) Moreover, we follow an empirical ethics approach (more on this later) which means that by integrating empirical social analysis with ethical analysis, we can draw normative conclusions.<sup>536</sup> Hence, the two disciplines are already integrated by means of this approach.

In order to carefully unite the different contributions, we distil four dimensions of each of these four logics which help us uncover and categorise the ethical foundations of the care relationship. The first dimension, “values”, considers which values are central to each logic. The second dimension, “care as”, relates to how each logic views the activity of care provision. The third dimension, the “care relationship”, concerns

the relationship between care provider and care recipient. And the fourth dimension, “motive”, addresses the motivation of the care provider according to each logic. These theoretical classifications are simplified and outlined in an overview in Table 9.1.

#### *Framework of the four logics*

Table 9.1. serves as a framework with which to understand the different logics in practice. This table unites and builds upon insights from existing theoretical literature.

The process of assembling the different perspectives on the MLM was done by means of an extensive literature study and by having regular group discussions to select the concepts and dimensions for our framework. The benefit of this theoretical framework is twofold. Firstly, it provides a clear and comprehensive overview of the different positions that have been juxtaposed in the MLM debate. Secondly, it serves as the analytical lens through which to view our empirical findings; and, to be more specific, it helps us to consider the ways in which these different logics are balanced with one another.

The remainder of this section provides a description and overview of each logic; and with each logic, it provides a description of the different dimensions.

**Table 9.1.** The four logics

Logic	Market	Bureaucracy	Professional	Care
<b>Value</b>	(Negative) freedom, autonomy, rationality, choice	Accessibility, rationality, control, thoroughness	Trust, collective knowledge, quality	Relationship forming and stabilising values (e.g. generosity, forgiveness)
<b>Relationship</b>	Commercial: impersonal, equal, fungible, demand driven	Impersonal, hierarchical, rational	Hierarchical	Interdependent, personal, equal (in their moral rights)
<b>Care as..</b>	Commodity	Procedure	Higher professional goal/Discipline	Process
<b>Motive healthcare provider</b>	Profit maximising	Equal treatment	Intrinsic	Emotional/Social

Based upon the following sources: <sup>15,16,21,534,537-542</sup>

### 9.2.1. Logic of the market

Adam Smith, a philosopher by training, lay the foundations of classical economics by describing the benefits of the division of labour and the free market.<sup>540</sup> Smith theorised that “the invisible hand”, the pursuit of self-interest of people within a competitive market, is beneficial to the public interest. Around the 1980s, this ideology spread to the healthcare sector in parts of Europe and Asia with the objective of enhancing efficiency and improving quality of care.<sup>132,134</sup>

#### *Values*

The core values of the free market are rationality, efficiency, responsiveness to need, and innovation – all to increase profit. Moreover, the buyer and seller should fully enjoy their freedom to choose – only bounded by the limits of the law – because the idea is that only the person in question can know what they want or need. Within the market logic, this belief in the power of “choice” is paramount and requires (negative) freedom.<sup>533,537</sup> (Negative freedom refers to the absence of obstacles or interference from others to be left to do or be able to do what they desire to do.<sup>537</sup>) Moral deliberation prior to the act of choosing is a private concern.<sup>21</sup>

#### *Care as*

The market logic treats care as a product that can be traded on the market. In other words, the provision of care is commodified.<sup>15,16</sup> This implies that the value of care is fully expressed in monetary terms; it does not possess a social meaning. Consequently, the product is fungible. In addition, the logic of the market considers care-providing to be property.

#### *Relationship*

The logic of the market is based on the idea that buyers and sellers act as *homo economicus*: someone who makes rational decisions out of self-interest.<sup>543</sup> According to this reasoning, individuals are driven by the maximisation of their own utility; in other words, the logic of the market is associated with individualism and consumerism. (Foucault (1978) argued that the order of causality is reversed: the market shapes individuals to be self-interested and rational human beings; they become dependent on the logic of the market because the market logic has shaped them to think this way.<sup>538</sup>) The relationship between the buyer and the seller is a commercial one.<sup>15</sup> It is impersonal, fungible, instrumental, rational and relies on an equal relationship. The relationship is demand-driven, which means that it is responsive to the wishes and needs of consumers. The market logic is based upon the notion that all the stakeholders involved in the care transaction make economic and political choices that will serve their best interests. Hence, consumers are always right in making their own decisions and they do not need specialists to choose on their behalf.<sup>534</sup> The clients are selected by their ability to pay and through contractual agreements the relationship is sealed.

*Motive*

The driver behind the logic of the market is that organisations strive continuously towards profit maximisation to satisfy their shareholders. In order to maximise profits, organisations have to raise revenue and optimise efficiency. To achieve the former, the main objective of the organisation is to satisfy their clients in order to keep existing clients and possibly attract potential clients. To optimise efficiency, the organisation will try to minimise the marginal costs and optimise the use of fixed-cost resources. The organisation constantly seeks to achieve the equilibrium between optimising efficiency and maintaining the quality of their product (as any loss of quality might deter clients from purchasing their product).

**9.2.2. Logic of bureaucracy**

The logic of bureaucracy originates from the intellectual legacy of Max Weber.<sup>539</sup> The bureaucratic rationale was developed after the industrial revolution when large-scale and complex organisations emerged. Organisations in the industrial period had to be run by different principles than traditional decision-making tools, which was driven by traditional authority – i.e. making decisions based upon kinship, relationship and particularism. However, new large-scale organisations demanded rationalisation, formality, specialisation and hierarchy.<sup>544</sup>

*Values*

The core objective of bureaucratic logic is to treat clients equally. In addition, organisational control is central to bureaucratic logic as the means to minimisation of risk and maximisation of accountability. Hence, bureaucratic organisations endorse values such as rationality, carefulness, thoroughness, lawfulness and predictability.

*Care as*

The bureaucratic logic considers care to be the highly organised and systematised provision of care to citizens in a non-discriminatory fashion, with all receiving the same care and all treated equally – and with little or no room for customised care.<sup>534</sup> Furthermore, the logic of bureaucracy understands care as a linear system of multiple care processes such as washing and feeding. In other words, care is not a single act but a system involving many procedures. The central objective of the logic of bureaucracy is to organise the process of care; outcomes are secondary.

*Relationship*

The logic of bureaucracy defines the care relationship in terms of rationality, predefined procedures and laws because the bureaucratic organisation has to be impersonal to protect itself from particularism.<sup>544</sup> Hence, the relationship is impersonal and hierarchical. The care seeker counts on universal access, availability and quality of healthcare services. However, the care seeker is only entitled to

services as prescribed and cannot influence his own care or be an active co-producer of care.

### *Motive*

The motivation that drives bureaucratic organisations is that they want to maintain or improve their rational functioning. Any loopholes or flaws in the functioning of the bureaucratic organisation will be addressed by modifying existing procedures and laws or by implementing additional formal rules.

### **9.2.3. Logic of professionalism**

Freidson (2001) defined the logic of professionalism as follows, “In the most elementary sense, professionalism is a set of institutions which permit the members of an occupation to make a living while controlling their own work”.<sup>534</sup> Professionalism rests on two beliefs: (1) the belief that with only the required training and experience, professionals can perform their specialised work; (2) the work of professionals cannot be standardised, rationalised or commodified.<sup>534</sup> Only the professional can have the specific, tacit, almost esoteric knowledge to do their work. For care provision to be effective and optimal, the professional needs a professional space that establishes favourable economic and social conditions, allowing the professionals to control their own work.<sup>534</sup>

### *Values*

The professional relies on trust from all stakeholders involved (i.e. managers, inspectors, recipients of the service of the professional) because only with trust can professionals execute their work. In addition, one of the central values of the professional logic concerns the acquisition of knowledge and sharing of knowledge among peers.<sup>545</sup>

### *Care as*

The professionalisation of care is creating a discipline: “care-as-discipline”.<sup>546</sup> This means that care is systemised through the need and control of formulating theory and the fabrication of knowledge concerning “care”.<sup>547</sup> The professional care logic expresses “good” care provision by complying to norms and standards defined within their professional field.<sup>548</sup> Therefore, in theory, the provision of care is at its best when the professional is given its full autonomy.

### *Relationship*

The relationship between professional and client depends on who has permission and legitimacy to exercise control.<sup>548</sup> The theory is that the care recipient is dependent on the professional; they are the beneficiary of professional knowledge and of the skills of the care provider. Therefore, the relationship becomes hierarchical.<sup>546</sup> Professionals are less bound by rules and enjoy more freedom to make decisions

based on their professional title compared to working in a bureaucratic organisation. In other words, the relationship is built on trust – trust that the professional has the best motives and intentions to provide the optimal care.

### *Motive*

The professional is the main driver of the organisation. Importantly, the professional is intrinsically motivated to provide the best care. The purpose of their profession is to serve the patient's needs (not simply what the patient wants or what they can pay for, in contrast with the market logic).<sup>545</sup> Furthermore, in theory, the professional's work is about more than making a salary: work becomes their life and their identity. According to the logic of professional assumes that satisfaction is largely gained from perfecting their performance. "[S]atisfaction is intrinsic to the performance of work that is interesting and challenging because it is complex and requires the exercise of discretion".<sup>534, p.108</sup>

### **9.2.4. Logic of care**

Although various classical philosophers analysed the concept of care (e.g. Aristotle, Descartes, Kant),<sup>549</sup> Carol Gilligan was the first, in 1982, to coin the term "ethics of care".<sup>541</sup> Gilligan rejected the Enlightenment notion of humans and human relationships as purely rational, as embodied by Kantian universalist ethics, and argued instead for a "care perspective" which acknowledges the role of emotions. The ethics of care instead emphasises the importance of situation-specificity, interdependence and emotional sensitivity. Relatedly, Annemarie Mol introduced the term "logic of care" as a critique of the values imposed on the care relationship by the market.<sup>21,533</sup>

### *Values*

The logic of care treats caring itself as a virtue.<sup>550</sup> Because relationships are central to the logic of care, values such as sharing, mutual respect, responsibility for one another, and genuineness are particularly important. However, different values are important in different contexts so no single, rigid set of values can be formulated for all situations.

### *Care as*

The logic of care is distinguished in several ways from the other three logics. (i) The logic of care rejects the notion that we can rely exclusively on rationality to solve moral problems. Care ethics is instead informed by emotional wisdom – intuition, inclinations and feelings. (ii) The logic of care is built on the notion that people are fundamentally dependent on other human beings. Interpersonal situations necessarily involve dependency relationships. (iii) The logic of care acknowledges that care is a process involving the care recipient and the caregiver; it is not a compartmentalised procedure (as in the bureaucratic logic) or linear transaction



(as in the market logic). In the logic of care, care is not a means to an end, nor is it instrumental (as in the market logic). Instead, caring is an end in itself.<sup>21</sup> (iv) The logic of care is situation-dependent and therefore the appropriate care is determined on a case-by-case basis and not by bureaucratic or (moral) universalist rules.

### *Relationship*

For other logics, “care as” and “relationship” are distinct dimensions. By contrast, the logic of care is centred entirely on the “care relationship”. Whereas in other logics individuals are treated as independent and rational beings, in the logic of care, individuals are treated as interdependent and shaped by their relations with others. Different from the logic of bureaucracy and professionalism, the logic of care distances itself from a hierarchical relationship between the professional and the care recipient and advances a more equal relationship.

### *Motive*

The motivation that underpins the care relationship can be defined as a “gift good”.<sup>16</sup> Gift goods cannot be expressed in purely monetary terms. Instead, the value of the gift goods derives from factors other than market value, such as friendship and respect.<sup>16</sup> The “rewards” of caring are described as transformative because in the care relationship both caregiver and care receiver are cultivated.<sup>551</sup>

## **9.2.5. Bridging the gap between theory and practice**

The four logics are ideal types, used for instrumental purposes to analytically assess the phenomenon in practice. (See Table 9.1. for a brief overview of the four logics.) In order to bridge the gap between theory and practice, we first need to acknowledge that different logics co-exist in practice – similar to the idea of “complex pluralism”.<sup>552</sup> However, the interplay between the different logics is of interest; one logic can dominate over the others. This can depend on, among other things, the conditions wherein stakeholders are incentivised to pursue a certain logic. For instance, a nursing home manager can uphold primarily professional values but in financial distress the market logic might overrule.

Many scholars have written about whether market forces undermine and suppress other valuable logics in healthcare.<sup>15,17,18</sup> Two main objections against market forces in healthcare are that markets perpetuate inequalities and markets degrade the value of a certain good – or in other words, it can corrupt the good.<sup>17,18,553</sup>

In that vein, the desirability and impact of commodification of care has received much attention in the MLM debate. Pellegrino (1999) outlines why the market ethos might not be suitable for healthcare services, and should not be commodified, by comparing the characteristics of care to the definition of market goods. Pellegrino argues: (i) healthcare provision is not fungible; (ii) providing healthcare services is not a possession; (iii) the provision of healthcare is a personal relationship; (iv)



the nature of illness and the healing process are not products which patients can consume and which the doctor produces out of materials.<sup>15</sup>

Kaveny and Radin contribute to the commodification debate.<sup>554,555</sup> Kaveny argues healthcare has three different purposes (i.e. public health purpose, measurable health improvements and the non-measurable individual health improvements) and, hence, is a polyvalent good.<sup>554</sup> The extent to which, and how, commodification affects each purpose differs.<sup>554</sup> Similarly, Radin argues that a “spectrum of commodification” offers a solution for the management of market forces in healthcare.<sup>555</sup> According to Radin, market and care provision could overlap and co-exist without seriously eroding each other.<sup>555</sup> This theory of “incomplete commodification” could lead to different solutions to reconcile the market and the provision of care. For instance, to shield the healthcare sector from being entirely commodified, the healthcare system should not merely rest on the market-based philosophy of incentives, and should avoid the exclusive use of market-based terminology.<sup>554</sup>

The impact of the logic of the market on the logic of professionalism has been a matter of interest too. Freidson argued that professionals can uphold their values in spite of market pressures if they are able to maintain the dominance of their profession in the provision of their services (e.g. ensuring professional certification as a condition of employment) and can force social closure (i.e. build exclusive communities in order to monopolise scarce resources for their own professional group).<sup>534</sup> However, others have pointed to ways in which both market and bureaucratic forces influence and change professional practices.<sup>19</sup> Authors like Light<sup>556</sup> and Reinhardt<sup>557</sup>, are more sceptical about the altruistic or civic values of healthcare professionals and focus instead on healthcare professionals’ attraction to markets and corporations that advance their interests.<sup>556</sup> “They [physicians] are as decent as other human beings, and just as frail under severe economic pressure”.<sup>557, p.22</sup>

The logics of the market and bureaucracy seem to be more intertwined and less contested than the interaction between the other logics. The logic of the market and the logic of bureaucracy co-exist in almost all markets in practice. Bureaucratic mechanisms have long been used to tame market failures. Yet, the degree of bureaucratic penetration strongly varies. The risks of market failures are higher for public goods or social services of general interest and, hence, the market needs more fine-tuning through regulation.<sup>558</sup> Nobel prize winner Kenneth Arrow argued that the healthcare market will never be able to function according to pure market logic.<sup>14</sup> Likewise, Adam Smith was aware of the possible market failures and argued for strong supportive social institutions.<sup>540,559</sup> The market of healthcare has several characteristics that distort the mechanisms of the market. Firstly, for example, the nature of demand is irregular, unpredictable and “with an assault on personal integrity”.<sup>14, p.949</sup> Secondly, there is uncertainty about the quality of the product that patients purchase on the healthcare market. Because of these inherent market imperfections in the healthcare system, the Netherlands has adopted a regulated healthcare market,<sup>125</sup> which is to say the Netherlands implemented a hybrid form

combining market principles and bureaucracy. Nonetheless, there is still friction between the logic of the market and the logic of bureaucracy because bureaucracy is rigid and depends on regulation whereas flexibility and deregulation are two of the vital conditions for market mechanisms to function efficiently.

However, all the aforementioned theoretical nuances still take the healthcare sector as a whole; they do not differentiate between the different healthcare system levels. This study, therefore, takes a multi-level approach, in order to add some depth to the theoretical framework that underlies the MLM debate.

## 9.3. Method

### 9.3.1. Approach

This research takes an empirical ethics approach to the topic,<sup>560,561</sup> following the critical applied ethics method.<sup>562</sup> The methodology is phenomenological, involving both deductive and inductive work. Phenomenological ethics is about studying “moral perception and reflective subjectivity of real, situated persons”,<sup>563, p.443</sup> and this study seeks to do exactly this. Our primary source of information is qualitative data derived from interviews; our observations made during the course of fieldwork were used only to connect the dots between the qualitative findings.

This study takes a multi-level approach, distinguishing between the levels of: (i) the individual care relationship (micro), (ii) the care organisation (meso), (iii) and the healthcare system (macro). The micro-level relates to the values that shape the relationship between the care recipient and the care provider. The meso-level concerns organisational and institutional values at the level of the healthcare organisation. The macro-level refers to societal values and includes characteristics of the healthcare system in general. It is important to take a multi-level approach because values exist at different levels (i.e. micro, meso and macro-level) and the values are often interconnected across levels.<sup>564</sup> Failing to study these values on different levels might lead to potential problems of misspecification, aggregation bias and contextual fallacies.<sup>564</sup>

### 9.3.2. Data collection

#### *Interviews*

We conducted semi-structured interviews guided by the following questions: (i) How would the respondent define “good care”? (ii) Does their respective nursing home achieve their notion of “good care”; and, if they do achieve this, how does the nursing home do so; or, if they do not achieve this, why don’t they? (iii) Which activities are associated with achieving “good care”? We asked all participants explicitly to provide examples to illustrate their answers. The topic list also included stakeholder-specific questions (i.e. residents and family members of residents, employees, managers, experts). (The topic lists, including stakeholder specific questions, are outlined in

Appendix 9.B.) The interview guide for the experts concentrated on the role of for-profit nursing homes in LTC provision.

#### *Sampling of cases*

This study selected three for-profit nursing homes located in different provinces and regions (rural and urban) as case studies. We would like to stress that it is beyond the scope of this study to draw a comparison between the for-profit sector and the non-profit sector. However, we do report on how the for-profit sector perceives the non-profit sector. This narrative is important for understanding how for-profit homes define their role as LTC providers.

The participating nursing homes were selected by means of purposeful sampling, based on their organisational characteristics, in order to cover a wide spectrum of the for-profit market. One home is financed through personal budgets; one through total home-care packages; and one was formerly a personal budget financed home but became financed by means of total home-care packages. (For more information about the financial reimbursement schemes, please refer to Appendix 9.A.) Another difference is that two are part of franchises and one nursing home is a stand-alone home. We hypothesise that the balancing act of the different logics could differ between the different types of nursing homes because personal budget homes rely entirely on private transactions whereas nursing homes financed with total home-care packages only partly rely on private contracts.

#### *Sampling of respondents*

We purposively selected respondents from the different system levels. Individuals from three groups were selected in each caring home: 1) residents and/or family members, 2) employees and 3) nursing home managers (see Table 9.2.). For every nursing home we included at least two residents and/or family members, two employees, and at least one manager. The nursing home managers could also be the owner of the nursing home. (We do not distinguish between nursing home owners and nursing home managers in this article; both are referred to as nursing home managers.) In addition, we selected a wide range of experts (e.g. branch representatives, consultants, other home managers, government officials) in order to collect multiple perspectives on the macro-level.

After approval and support from the manager of the nursing homes, the researchers recruited respondents when the researchers were on site. (On a few occasions the employees or managers assisted us to the residents with only a mild or no cognitive impairment to ask them whether they wanted to partake in our study because it is difficult to assess as an external researcher who is cognitively capable to be interviewed.) We only interviewed respondents who were capable of informed consent. On a few occasions, we assessed that the respondents were not able to do so after a brief informal conversation. In two of the three homes, a newsletter was

sent out to the residents and their family members to inform them about our visit. This letter invited family members to share their views with us.

We did not distinguish between the different types of employees. We included a variety of employees, ranging from senior nurses to activity organisers. We define all these employees as professionals in their own right. Hence, the term “professionals” includes a full range of professions working in for-profit nursing homes.

All respondents gave their informed consent. We conducted 35 interviews and the duration of the interviews ranged from approximately twenty minutes to over an hour with an average of 33 minutes. As confirmed by the medical ethical committee, (file number [identifiable information]) this study does not fall under the scope of the Dutch Medical Research Involving Human Subjects Act (WMO), as our study did not involve subjecting participants to procedures or rules of behaviour that may infringe the physical and/or psychological integrity of the study subjects. This study instead follows the Netherlands Code of Conduct for Research Integrity which is similar to the European Code of Conduct for Research Integrity.<sup>565</sup>

**Table 9.2.** List of respondents

	<b>N</b>	<b>Level</b>
<b>Total</b>	35	
<b>Experts (including other nursing home managers)</b>	15	Macro
Director/staff for-profit nursing home (chain-affiliated)	3	
Director/staff for-profit nursing home (stand-alone)	3	
General sector expert	5	
Institutional actor	3	
Director/staff non-profit facility	1	
<b>Location managers of one of the three for-profit nursing homes included in the case study</b>	4	Macro/Meso
Owners	3	
Manager	1	
<b>Employees</b>	7	Meso/Micro
Nurse	5	
Other employee type	2	
<b>Residents or family members on behalf of the residents</b>	9	Meso/Micro
Residents	6	
Family of residents	3	

### 9.3.3. Data analysis

The interviews were recorded, transcribed verbatim and afterwards analysed using qualitative analysis software program ATLAS.ti. The a priori codes, deducted from the theoretical framework, were used to categorise the data; the newly-identified codes emerged from the data itself. Two researchers independently coded the interviews. All codes were checked by the other researcher. Inter-coder reliability was improved by numerous discussions throughout the coding process between the two researchers. Often the respondents were explicit in their use of terminology and fitted one of the four logics accordingly. Disputable records were discussed among the researchers. In order to select the key themes from our evidence, we used as a guide the number of times the themes were mentioned and how many respondents mentioned those themes. The key themes were determined based upon consultations between the various researchers, and by using tools such as creating a visual representation of the codes and their respective connections.

### 9.3.4. Reporting

When reporting the findings, to improve the readability of this article, we only mention specific stakeholders when there is no general consensus among the different types of stakeholders on the subjects we discuss in our findings. Furthermore, the results section refers to narratives instead of logics because the results section outlines the narratives of the interviewees. The discussion then reflects on the relationship between those narratives and the theoretical framework (i.e. the four logics).

## 9.4. Results

### 9.4.1. Categorisation

We inductively categorised our findings into four main themes: (1) the for-profit nursing home environment; (2) the professional in the for-profit nursing home; (3) the residents; and (4) system levels.

### 9.4.2. For-profit nursing home environment

People described for-profit nursing homes in two ways: some respondents described the for-profit nursing homes as a place that feels like “home” (mainly mentioned by employees and the managers), other respondents (solely experts) described for-profit homes as “hotels”. Residents generally refrained from depicting the entire nursing home in a certain way. A few residents restricted their description to their room, which they described as their own personal space.

Most respondents described the traditional (non-profit) nursing home as the antithesis of the for-profit nursing home: the traditional nursing home was depicted as “the bureaucratic medical institute”. Often, respondents drew comparisons with

the non-profit sector to describe their own position although none of the questions (except the questions for the experts) were designed to elicit such comparison.

The respondents described that, for them, for-profit nursing homes provide a different (and better) environment to the non-profit sector. The for-profit nursing homes are small-scale homes, with a maximum of twenty-five people, compared to large-scale traditional (non-profit) nursing homes. Often, the for-profit nursing homes are located in nice (historical) buildings. We found that the environment matters in five different ways.

Firstly, one of the most important conditions that the small scale of for-profit nursing homes provides is *time*: time to provide care. This condition was mentioned very often and emphasised during the interviews. Sufficient time for healthcare professionals to provide their care was perceived as one of the key factors for good quality of care.

*Well, they can just say how they want it. And I believe it's very important to listen to this. You also have those larger houses where they usually wash all people in the same way. But we really try to listen to the person to see what exactly they want, you know? [...] They can just indicate it. You just have the time for it. I very much appreciate that.*

**Employee**

Secondly, because these nursing homes are small-scale entities and there is “time” for the care relationship, there is room for person-oriented care. This entails being responsive to the different wishes of the residents and taking time to listen to the stories of the residents. Person-oriented care gives residents the feeling they are acknowledged and “seen”.

[Response to the question “what is good care?”. Later the respondent confirmed that this nursing home adheres to his/her vision]

*That you have a good sense of what people mean. [...] Sometimes you have to encourage them. Sometimes it comes naturally that they talk. [...] In addition, you have to understand the condition that someone is in. What is his[her] physical condition, his[her] health, what is his[her] religion and what does he[she] not believe in. These kind of things. Good care. That you are not indifferent to him[her]. That you sense what he[she] means. And that you are eager to know what that is. It is very important that you would like to know.*

**Resident**

Thirdly, for-profit nursing homes seek to create an environment in which residents can be “themselves” and sustain their usual way of living with as few modifications as possible. All the different stakeholders of the for-profit nursing home emphasised that they find it important that the different daily rhythms of the residents are accommodated. For instance, if a resident wants to wake up at seven

in the morning, the manager will try to ensure that an employee is there to help this person out of bed, just as much as if someone wants to wake up at ten. In addition, when possible, the employees will keep doing the ordinary daily activities with the residents (e.g. going out for grocery shopping).

*It's just small scale: cooking together, eating together, being able to go outside whenever you want. It all sounds very normal, but it really isn't.*

### **Employee**

Fourthly, non-profit nursing homes were used as an antithesis, and was characterised as an institution which is too much focused on process – i.e. rules and checklists – and not on outcome. The respondents “accused” the non-profit homes of using rules as means-end. Too little time was spent on providing the actual care. The respondents characterised the for-profit nursing homes as the opposite of this: more outcome oriented. The main objective of for-profit nursing homes is that the resident is happy and satisfied. (The latter was solely mentioned by managers and experts.)

Lastly, respondents (primarily experts) depict traditional (non-profit) nursing homes as being too fixated on minimising risks. The experts describe that this pursuit to control the situation is realised by bureaucratising their nursing homes. However, according to the respondents, this comes at a cost of aspects of human dignity, such as freedom of mobility and the joys of life (e.g. drinking alcoholic beverages). For-profit nursing homes embrace the idea that risks are inherent to human life and, according to the respondents, only through the acceptance of risks can a dignified way of living be achieved.

*When people come here for a tour I say this: “we have a staircase, we have an open door, those are certain risks that we take”. But you can't live without risk. If you want to live without risks, then you have to start building prisons. Life without risks is really not more pleasant, that's a lot more unpleasant in fact. In the four years that we have now been open, we have had once that someone got out and we did not know until someone called, “Hi, this gentleman is walking here, I think he lives with you”. That happened once. And otherwise, people want to go out very often, then you walk with them for a moment, and when they [the residents] are at the end of the path they [the residents] say it is far enough. “Shall we now go back?” Then all the restlessness is over.*

### **Nursing home manager**

#### **9.4.3. For-profit nursing home professionals**

Similar to the nursing home environment, professionals in for-profit nursing homes are contrasted with professionals in non-profit nursing homes. Our qualitative data indicate six factors that define the for-profit nursing home professional.



Firstly, the respondents define the for-profit nursing home professional as less medically-oriented and process-driven, and more focused on wellbeing (primarily mentioned by the managers and experts), compared to the non-profit sector. One of the managers referred to the wellbeing approach as the “happiness approach”.

Our respondents (mainly the experts and nursing home managers) argued that nursing training directs its efforts at the wrong things. Nurses learn to work hard to complete all the tasks are demanded of them, ticking all the boxes, and to obtain useful (medical) knowledge, but they do not acquire the “tacit” art of ensuring the wellbeing of the residents. For-profit nursing homes actively recruit professionals who are more inclined to embrace the wellbeing approach. The essential characteristics for the professionals working in for-profit nursing homes are patience, eagerness to learn (these two were mostly mentioned by managers), commitment and passion for the job. Several nursing home managers mentioned especially that the nurses with more experience (i.e. often older nurses) and people coming from other service-oriented businesses are often more suitable to fulfil their ideal of a professional in the for-profit setting.

*Well, what we also find important is that the caregiver doesn't just want to do caregiving tasks, you know? [...] Wellbeing is very important. But in their education, a little more attention is paid to that recently, but for a long time it has been neglected. [...] What you notice then is that wellbeing, to offer that to residents is quite work-intensive. There are a number of employees who find it difficult [to adopt the wellbeing approach] and who try to avoid it. Especially in the beginning, we sometimes said: “Guys, that kitchen counter has been cleaned six times now, just sit down with the residents.” But then they [employees] feel that they are not working hard. You notice that the qualified employees are trained to work very hard and when we say: “Yes, but you know? Playing a board game with seven people with dementia is much harder work than getting three people dressed,” they find that very difficult to accept because they really feel that they are not working then.*

**Nursing home manager**

Secondly, the respondents observe that large scale (non-profit) nursing homes promote the idea that everyone is equal and that everyone should get the same treatment, whereas for-profit organisations like to profile themselves as homes that follow a person-oriented, customised approach. The professionals in for-profit nursing homes are able to provide person-oriented care because they enjoy professional discretion to make their own judgements and act accordingly.

*Yes, we also offer specific care to people. Not all the same, but really all exactly the care that is needed for them.*

**Employee**



Thirdly, according to the respondents, the professional can only provide person-oriented care when the professionals are less subject to bureaucracy and hierarchy. Managers and experts distance themselves from the idea of strict division of labour; their personnel should respond to the wishes of the residents, irrespective of what their professional title dictates. (This was solely mentioned by managers and experts.)

*Within [our private nursing home] I deploy all employees around the care for the resident. So also the cook is an integral part [of the nursing homes] or the handyman [...] What I see in the larger nursing homes, larger institutions, is that they very much think in layers. Facility services only cleans, nursing only do their nurses tasks, the cook arranges food. And I think that everyone who works in healthcare or elderly care also works for the resident. So for me it does not really matter that the cook walks to the elevator with one of the residents when the resident no longer knows [where his/her apartment is]. [...] What I find important, of course, is that the washing and dressing, medication [part], is done by someone who is trained. Let that be clear. But over the course of the day, I don't think that [an employee's job description] is very important anymore.*

**Nursing home manager**

Fourthly, the for-profit nursing home professional is seen as a professional who is passionate about their work. Various examples were given by residents or family members of residents in which the professional would assist the residents outside their normal working hours. In their spare time they might, for example, do additional work to improve the quality of life of the residents.

*An initiative from [this nursing home] has been to bring [our resident family member] back to her birthplace in Friesland. That was an initiative of two employees. They got the car from [the nursing home] and in their own free time they went to Friesland with her.*

**Family member of a resident**

Fifthly, some employees mentioned that they strive towards a more equal care relationship. They share their own life stories with the respondents. They want to acknowledge that they are allowed to come into the private sphere of the residents, and by sharing their own story they want to express a certain reciprocity. However, according to the stories of the residents and the employees, the residents did not necessarily express similar interest in the lives of the caregivers.

Lastly, from the perspective of the professional and nursing home manager, the vision of the for-profit nursing home professional is that the residents have to be mentally stimulated by the professional. They argue that otherwise the cognitive functions of the residents will deteriorate.

*What can someone still do themselves? I also think it is good care that you encourage someone to do those things [...] Yes, I believe if you know that someone can still do certain things, for instance, brushing your own teeth. Then you give someone the toothbrush and then I say “you start” and then often with that action, that realisation comes again from “oh yes”. And when you do that calmly, it often works.*

**Employee**

#### **9.4.4. The residents**

Most managers and experts suggested that the current residents of nursing homes belong to a new generation with different demands and attitudes compared to earlier generations. It seems that the current generation of residents embrace the narrative of the market more strongly. Values such as individualism, private responsibility, freedom of choice, and autonomy were mentioned as important values by all types of respondents. The idea that residents value and make use of the narrative of choice is supported in two ways. Firstly, they made a conscious choice in their selection of a nursing home. In fact, some respondents said that they deliberately moved from a non-profit home to a for-profit home. Secondly, the residents explained that they value the freedom to determine their own daily rhythms, activities and living arrangements (e.g. they are free to decorate their own space). For example, residents highlighted the importance that they should be free to choose whether they want to join dinner with the other residents or to stay in their rooms.

We find that the for-profit market is less successful than it would like to be in creating a community within their nursing homes. The residents expressed conflicting ideas and emotions about living in a group. Some of them highlighted the tension between individual freedom and living in a community setting.

*It is nice here, but [as an example] there will be music tonight and I would like to sit in my own place. Because then I am close to the music, I like that so much, you know. At one point, [inevitably] you have to leave your seat, and in the meantime other people take your place. There is nothing you can do about it. And then you have to look for another place to sit, you know. I think about these things, you know, that's one of the reasons why I sleep poorly.*

**Resident**

Residents often mentioned the lack of belonging and the lack of meaningful relationships with other residents. One of the reasons suggested by the residents themselves, and also observed by the researchers, is the wide variety of care needs among the residents. The residents expressed in the interviews that they missed a social connection with the other residents suffering from severe memory loss (often dementia), possibly because the residents participating in this study had only mild, or no, cognitive impairment.

*Respondent: It was a bit disappointing to me, the different types of residents here [the nursing home]. The number of people with dementia is high here. And I find it difficult to make contact with [them]. That was very disappointing to me.*

*Interviewer: And did you know this beforehand?*

*Respondent: No not really. I have the feeling that it was presented a bit nicer to me than how it really is. But it depends how you look at it, no?*

### **Resident**

Some residents highlighted the importance of social belonging within nursing homes (e.g. religious background). Hence, the disconnection between people within nursing homes was also attributed to the fact they came from different social groups. This feeling contrasts with the desire expressed by the managers to build a “home”.

#### **9.4.5. System levels**

Our findings indicate that the balancing of the four narratives differs among the different stakeholders.

We found that experts (i.e. macro-level) primarily adopted a market narrative. Private responsibility and freedom of choice was valued highly. In addition, according to the experts, contractual agreements are the important binder between the nursing home manager and residents. The experts explained that this should empower residents to hold the nursing homes accountable when care and other services are not delivered to the agreed standards. The experts explained the rise of for-profit nursing homes and the demand for their services as due to the for-profit sector’s responsiveness to the wishes of the clients, which illustrates the demand and supply rationale of the market narrative. Furthermore, residents were typified as “customers” with individualistic demands.

The nursing home managers (i.e. meso-level) expressed mixed values. They also spoke according to the narrative of the market – “they have to run a business” – but, in addition, some expressed an interest (i) in trying to build a “home”, and (ii) in embracing person-oriented care. The managers of all three for-profit nursing homes demonstrated personal knowledge of their residents and their specific character traits.

The employees and the family members of the residents (i.e. micro-level) embrace values that fall under the narratives of care. However, the residents and the family members of the residents expressed various market values: they valued autonomy and freedom of choice highly and showed little interest in the reciprocity of personal relationships with their caregivers.

## 9.5. Discussion

The aim of this study was to answer two main research questions: 1) how are the four different logics (i.e. the logics of the market, bureaucracy, professionalism and care) reconciled in practice?; and, 2) which logic is dominant in the narratives of each of the different stakeholders (i.e. experts on the for-profit nursing home market, nursing home managers, care workers, family members of residents, and residents)?

### 9.5.1. The for-profit nursing home environment

Our findings suggest that it is not so much the care relationship that is commodified but that the nursing home environment and the conditions provided by the nursing home are the main commodities to be purchased on the market. According to the respondents, for-profit nursing homes create an environment that enables the professional to execute their profession – a place where there is more time to provide care and where the logic of bureaucracy is less influential. Time is a factor which has already been highlighted as an important condition by other ethicists.<sup>566,567</sup> Our contribution to the theoretical literature in this regard is that the care relationship consists of various aspects and that the four logics can be reconciled differently for each aspect of the care relationship. For each activity such as washing, feeding, leisure activities or medical services, the four logics may be balanced differently. Hence, the MLM debate benefits from dissecting the care relationship.

Our findings and previous empirical work show that for-profit nursing homes adopt a different care model from the non-profit sector.<sup>84</sup> For example, for-profit and non-profit nursing homes differ in their size (i.e. average number of clients) and the clients they target (i.e. socio-economic status). The different care model is a response to market incentives (also illustrated in the empirical work of Bos et al.<sup>84</sup>). In other words, for-profit nursing homes have adopted their distinct care model (e.g. providing small-scale nursing home sites) because the market logic dominates in the for-profit sector.

Another interesting finding is that stakeholders use different typologies to describe the for-profit nursing home sector: (i) a nursing home as a “home”; and (ii) nursing home as a “hotel”. These two different types imply different ethical considerations. Previous studies that detected the distinction between the nursing home as “hotel” or “family home” in their studies can help us to distil these ethical consideration from their conceptual frameworks.<sup>568,569</sup> The hotel type represents a distant resident care relationship, based upon individual choice and the care recipient as empowered consumer; whereas the “family home” relates to close care relationships.<sup>568,569</sup> Within this typology, the nursing home as “hotel” embodies more the market logic and the care home as “family home” leans towards the logic of care. This variation highlights that the for-profit nursing home sector is diverse. This variation is a factor we could not explore in any depth in this study, mainly because the empirical part of this study was limited to just three for-profit nursing

homes. Different financing schemes (i.e. complete reliance on private transactions versus partial private transaction) and affiliations (i.e. chain-affiliated homes versus sole proprietorship homes) could potentially affect the logics embraced by different homes. This might be an interesting subject for future research.

### 9.5.2. The professional in the for-profit nursing home

The qualitative data illustrate that the professional in the for-profit nursing home is contrasted with the professional subject to the logic of bureaucracy. The professional in the for-profit home resists the reading of “care-as-discipline”.

For-profit homes are redefining the logic of professionalism. The professional in a for-profit home is, in fact, influenced by both the logic of care and the logic of the market. They may embrace of the logic of care within the context of the market for one or both of two reasons. The first reason is that the professionals adopt the logic of care in response to the demands of the care recipient. The second reason is that the conditions created by the market provide space for the professionals to build and foster those relationships with care recipients. The for-profit nursing home environment offers advantageous conditions (i.e. sufficient time per client, resources, and liberation from bureaucratic rules), allowing – at least in theory – for the adoption of the logic of care. Since this virtuous environment is created by the market, the logic of care is either way couched inside the logic of the market.

However, the extent to which the logic of care actually prevails among professionals is debatable. It can be argued that the “personalised care” to which for-profit homes aspire is wrongly labelled by stakeholders. This argument holds that the care recipient is not an individual who takes part in an interdependent and equal relationship, but is instead an empowered consumer. It is difficult, from our findings, to assess whether the professional really embraces the idea of “the logic of care”. We can only flag this question for further research and debate.

In addition, the extent to which the professional can be autonomous when they are mainly responding to the wishes of their clients is questionable. This tension is obvious when the professional acts like the “activating professional” (i.e. is trying to mentally stimulate the care recipient). The notion of the “activating professional” seems to align with the idea of the professional logic of Freidson but it conflicts with the ideology of consumerism – that the wishes of the care recipient dominate.<sup>534</sup> This raises questions about whether the care relationship can be a mutual exchange in every circumstance, as the logic of care seem to suggest. This is an unrealistic depiction of reality and in some circumstances an undesirable relationship between the care giver and recipient. As Foucault argues, there is an inherent power divide within the relationship between physicians and patients.<sup>570</sup>

### 9.5.3. The residents

Our findings regarding the residents of for-profit homes yield two main conclusions. Firstly, the narratives of the residents mostly express the logic of the market: they

value autonomy, customised care, the logic of choice and (negative) freedom. These values are market-related values. For-profit nursing homes seem to capitalise on these market-related desires of (prospective) care recipients. Furthermore, we found that for-profit nursing home stakeholders value the logic of choice. However, one of the ethical concerns of relying on the logic of choice – one of particular interest in this sector – is that the (prospective) care recipient needs strong social support to exercise the logic of choice effectively. In other words, you need someone who assists the (prospective) care recipient to participate in the market in order to make an informed choice. This poses serious equity concerns because this could lead to unequal access to LTC services. In addition, as Arrow points out, the healthcare market does not behave as a pure market; substantial informational asymmetry between healthcare provider and healthcare recipient exists,<sup>14</sup> making it a difficult for healthcare recipients to be fully informed and rational purchasers on the healthcare market.

Secondly, residents express a lack of social community within their nursing homes. Even if there is a demand for social community (and even though the for-profit nursing homes are demand-driven), it seems difficult to satisfy this demand. One of the reasons put forward by the respondents is that different social groups are placed together; the distribution mechanism of the market is based on the ability to pay and this allocation system seems to overlook the importance of social groups, religion or geography. Some entrepreneurial for-profit nursing homes in the Netherlands have recognised this limitation and tailor their nursing homes to designated social groups. For example, they have designed nursing homes specifically for specific immigrant groups (e.g. Suriname or Indonesia) or for a particular religion (e.g. Catholic or Muslim).<sup>571</sup> Another limitation on the ability of for-profit homes to foster a social community is that, in a small-scale home, the chances of meeting a like-minded companion are statistically smaller than in a larger home.

#### **9.5.4. Systems thinking**

With regards to the second research question, concerning which logic is dominant for each group of stakeholders, we found that when defining care, different stakeholder narratives embraced different logics. On the whole, the macro-level respondents adopted the market narrative: they commodified the care relationship to a much greater extent than respondents closer to the actual practice of care.

In discussing the desirability of market forces, the MLM debate focuses on comparisons between different sectors or different spheres of activity. When they discuss the healthcare sphere, they tend to overlook its complexity – and in particular the complexity of the care relationship. Other authors alluded to this complexity by referring to care as a polyvalent good,<sup>554</sup> and by referring to incomplete commodification in the healthcare sector.<sup>555</sup> Our contribution to the MLM theoretical framework is that we emphasise instead that healthcare systems should be understood as complex systems that are shaped and formed by intermingling

logics. The care relationship has various aspects and is multi-layered with the individual care relationship at the micro-level, the care organisation at the meso-level, and the healthcare system as a whole at the macro-level; at each level, different logics are prioritised. For instance, professionals can maintain their professional autonomy when the market logic is mainly manifested at the higher system level (e.g. commodification of the healthcare setting). The multi-layered system could have a filtering trickledown effect: market forces are most influential on the outer layer (the macro-level) while on the “lower” levels the influence of the market becomes more diluted. A system thinking approach could enrich future research when studying the MLM. The strength of this study is that it specifies and distinguishes three different levels in the healthcare system, however, future research could refined it (e.g. distinguishing between nursing home managers and owners).

### 9.5.5. Limitations

We used the four logics as our theoretical tools. We could, however, have opted for other frameworks. Our theoretical framework could be criticised by omitting the logic of the state. Although the state can be classified as a bureaucratic institution,<sup>572</sup> and therefore we could claim that we did not omit the state in our framework, we would argue that the state is not necessarily equivalent to a bureaucratic organisation. In practice it often opts for this organisational logic but, theoretically, it does not have to follow the bureaucratic logic. Instead we argue that, in theory, the logic of the state corresponds to what Anderson classifies as the logic of “shared goods”:<sup>16</sup> it is not about individual needs, wants or goods, but about providing goods on a community level. These goods are nonexclusive and, even if you cannot pay for them, they should be available. The notion of “shared goods” does highlight the moral weakness of the logic of the market as distribution mechanism for LTC care since the market logic upholds the idea that people receive the good according to what they are able and willing to pay for it, which conflicts with the ideology of “shared goods”. A moral question which follows from this clash of logics (but which is beyond the scope of this study) is whether the market is the right tool for allocating access to social services, and, specifically related to this study, for allocating access to nursing homes with favourable conditions, which is at the moment mainly accessible for people with higher socio-economic status. (For an ethical conceptual scheme of the market as allocation method refer to Wempe and Froman.<sup>532</sup>) A second possible limitation of our theoretical framework is the exclusion of the logic of the family. The logic of the family allocates care based on social relationships (i.e. kinship), and there is a collective responsibility to provide the good through a reciprocal family/community<sup>572</sup> – often informal care.<sup>573</sup> Many scholars have deliberated about the ethical considerations regarding informal and institutional care.<sup>573</sup> However, this study focused on a particular aspect of institutional care – for-profit nursing homes – and therefore the issue of informal care and its relation to institutional care were



beyond the scope of this article; hence, the logic of the family was omitted for this study.

There are several empirical limitations that might affect our findings. Firstly, we only collected qualitative data which reflects the perspective of for-profit nursing home stakeholders. Because this study was limited to the for-profit sector, we did not collect information on the perspective of the non-profit sector on their own role in the healthcare system or on the role of for-profit homes in the healthcare system. Future research should further explore this comparison. Secondly, the findings in this study could suffer from social desirability bias and choice-supportive bias. However, although we expected socially desirable answers, the respondents seem to be less affected by this factor than we expected; some respondents were surprisingly critical. Thirdly, our findings are context-dependent on the Dutch LTC sector. The for-profit sector has a distinctive role in the Netherlands and that might be an intermediating factor for our findings. The role of the for-profit nursing home sector in the Netherlands currently represents a small and parallel market to the traditional market – an opt-out option for people with more money – in contrast to the for-profit nursing homes in the United Kingdom. In the United Kingdom, for-profit nursing homes are the main LTC providers and are hugely underfunded.<sup>57</sup> Hence, we assume that the role of for-profit providers in LTC systems is an important factor for how for-profit nursing homes balance the different logics. The fourth and final limitation is the use of interviews (language) as our primary data for this study. Radin argues that rhetoric is an important factor in how we think about morality: “Fact- and value-commitments are present in the language we use to reason and describe, and they shape our reasoning and description, and the shape (for us) of reality itself”.<sup>574, p.1882</sup> However, we found that activities and material things also matter when defining “good” care. In order to take into account how materialities contribute in shaping realities, future studies could follow the material semiotic approach, as has been proposed by Pols and Driessen.<sup>575,576</sup> Both scholars refer to this as the radicalisation of relationality, meaning “that things, activities and words are added to the study of relations between people”.<sup>575, p.176</sup>

## 9.6. Conclusion

The for-profit nursing home sector embrace the logic of the market but the for-profit nursing home sector reconcile the market logic with the logic of care and the logic of professionalism. The market logic is present in the for-profit nursing home sector because these nursing homes revolve around the demands of the residents. On the other hand, the for-profit sector does create an environment for professionals to provide person-oriented care.

We identify four lessons learned from this empirical ethical research project for the MLM debate. Firstly, the provision of care should not be treated as one unit in the MLM debate, as it has often been. Each and every aspect of care should be



considered. For each aspect, the market logic is reconciled with competing logics in different ways: whereas the nursing home setting is commodified, the care relationship is much less so. Secondly, a multi-level approach is necessary for assessing the influence of the market in healthcare systems. The market logic is mostly expressed by respondents at the macro-level, whereas people closer to the care relationship seem to prioritise and embrace other logics. Thirdly, respondents describe the for-profit nursing home professionals as the antithesis of the bureaucratic professional, and, in practice, the for-profit sector seeks to create a new professional logic that resembles the logic of care. It seeks to do this by creating an environment with favourable conditions (i.e. enough time to provide care and resources) which should enable caregivers to maintain their professional integrity. Nevertheless, the professional logic is also ultimately driven by the market logic: they must first and foremost respond to residents' wishes. Hence, it is difficult to characterise clearly the professionals as embracing the logic of care rather than the logic of the market. Lastly, the residents express several market-related values, such as autonomy, customised care and (negative) freedom.

## 9.7 Appendix

### Appendix 9.A.

In 2015, the Netherlands introduced a LTC system reform, driven by the concern about the financial sustainability of the sector. An important goal of this reform was to support and stimulate people to stay at home longer and organise care in the home-setting.<sup>125</sup> Among other things, the LTC reform boosted also the creation of a private market for individuals to choose and organise their own care. This was a result of retrenchment strategies and possibilities to combine public benefits with the private money of well-to-do people that seek care.

There exists no public ownership in the Dutch LTC sector, and since for-profit ownership is prohibited for intramural care services that exceeds 6 beds,<sup>394</sup> the private non-profit sector has been overwhelmingly dominant. Nevertheless, the for-profit sector recently found a way to position itself and currently 12% of nursing homes are for-profit, although they mostly operate with comparatively smaller scales.<sup>84</sup> As a result, the share of the total for-profit nursing home client population is relatively small: approximately 4% lives in for-profit nursing homes.<sup>84</sup>

For-profit nursing homes are able to “avoid” the ban by separating the fees for housing, care and extra amenities. They provide clustered living arrangements that can be financed in two ways. First, for-profit nursing homes can be financed through in-kind extramural packages called the total home-care package. These are publicly funded benefits, although income related co-payments do apply. The care recipients then have to privately pay rents to the for-profit nursing home for their residencies and might consume other services as well. Second, the for-profit nursing home can be financed through publicly funded personal budgets. When the nursing home is financed through personal budgets, both the care and living arrangements become a private transaction between the nursing home and the care recipient. Both the uptake for total home-care package and personal budgets increased, 66% and 51% respectively from 2015 to 2018, while the uptake for in-kind intramural packages fell recently with -1% from 2015 to 2018.<sup>398</sup>

Residents of higher socio-economic status have to pay high obligatory co-payments for living in in-kind intramural (non-profit) LTC homes. These depend on their income and also means testing does apply. This has helped to create a market for for-profit nursing homes to attract clients from a higher socio-economic background who, either way, have to pay a significant amount in the traditional non-profit sector.

The for-profit nursing homes are often small-scale houses with a maximum of 25 clients. Traditional non-profit nursing homes are generally much larger.<sup>83</sup>

## Appendix 9.B.

Resident or family member of the resident	
Wat vindt u goede zorg? [Wat is belangrijk voor u bij de dagelijkse zorg?]	How would you define good care? [Supporting question: what is according to you important in providing care]
Krijgt u de zorg die u belangrijk vindt ? Waarom wel of niet? [Terug refereren naar de vorige vraag en hun antwoord + vragen om te illustreren met een voorbeeld]	Do you receive the care that is important to you? Why do or don't you receive this care? [Supporting question: Refer back to their answers to the previous question and ask for concrete examples]
Wat voor activiteiten [naast slapen, eten, wassen] onderneemt u nog meer op een dag? [En hoe is dit gelinkt aan het concept 'goede zorg']	Besides sleeping, eating and washing, what kind of activities do you do during the course of the day? [Supporting question: How does this relate to their definition of good quality of care?]
Waarom heeft u voor dit huis gekozen ? Wat is inderdaad zo en wat is er anders dan u verwacht had?	Why did you choose this nursing home? How does it fit your expectations?
Kunt u het contact tussen u en de verzorgende, medebewoners, medewerkers en bestuurder(s) omschrijven?	How would you describe the contact between you and the care professionals, the other residents, the other employees working here and the nursing home manager?
Wat voor soort mensen wonen er in dit huis? Wat voor soort mensen werken er in dit huis?  [Hoe zou u ze typeren?]	How would you describe the kind of people living in this nursing home? And could you describe what kind of people work in this home? [Supporting questions: How would you typify the people living in this nursing home? ]
Waar draait het volgens u om in dit huis?	What is according to you the objective of this nursing home?
Wat is de zorgvisie van dit huis? [Wat is volgens u het doel dat dit huis nastreeft? Is er 1 doel of zijn er meerdere doelen?]	How would you describe the vision of this home? [Support questions: What is, according to you, the goal that this house pursues? Are there one or multiple goals? ]
Zijn er nog andere dingen waar u het over wilt hebben?	Are there other aspects that you would like to discuss with us in the light of this study?

<b>Healthcare professional</b>	
<p>Wat vindt u goede zorg? [Wat vindt u belangrijk in het verlenen van zorg?]</p>	<p>How would you define good care? [Supporting question: what is, according to you, important in providing care]</p>
<p>Lukt het om deze zorg te leveren? Waarom wel of niet? [Terug refereren naar de vorige vraag en hun antwoord + vragen om te illustreren met een voorbeeld]</p>	<p>Are you able to provide this quality of care? Why are or aren't you able to do so? [Supporting question: Refer back to their answers to the previous question and ask for concrete examples]</p>
<p>Wat voor activiteiten [naast slapen, eten, wassen] onderneemt u nog meer op een dag?  [En hoe is dit gelinkt aan het concept 'goede zorg']</p>	<p>Besides the daily activities such as sleeping, eating and washing, what else do you do during the course of the day? [Supporting question: how does this relate to their definition of good quality of care?]</p>
<p>Waarom heeft u voor dit beroep gekozen?</p>	<p>Why did you choose this profession?</p>
<p>Waarvoor voelt u zich verantwoordelijk en waarvoor niet?</p>	<p>In how far do you feel responsible for care in this home? Where does your feeling of responsibility ends?</p>
<p>Kunt u het contact tussen u en de bewoners omschrijven?  [naar naasten vragen, doorvragen zodat echt verhouding duidelijk wordt]</p>	<p>How would you describe the contact between you and the residents? [Supporting question, in case it wasn't mentioned: How is your relationship with the residents' family or their social support?]</p>
<p>Wat voor soort mensen wonen er in dit huis? Wat voor soort mensen werken er in dit huis?  [Hoe zou u ze typeren? En hoe komen de bewoners hier terecht?]</p>	<p>How would you describe the kind of people living in this nursing home? And could you describe what kind of people work in this nursing home? [Supporting question: How would you typify the people living in this nursing home? How do most residents gain access to this nursing homes?]</p>
<p>Waarom werkt u specifiek voor deze zorgorganisatie?</p>	<p>Why do you specifically work for this healthcare organisation?</p>
<p>Wat is de zorgvisie van dit huis?  [Wat is volgens u het doel dat dit huis nastreeft? Is er 1 doel of zijn er meerdere doelen?]</p>	<p>How would you describe the vision of this home?  [Support questions: What is, according to you, the goal that this nursing home pursues? Are there one or multiple goals? ]</p>
<p>Zijn er nog andere dingen waar u het over wilt hebben?</p>	<p>Are there other aspects that you would like to discuss with us in the light of this study?</p>

<b>Nursing home manager</b>	
Wat vindt u goede zorg? [Wat vindt u belangrijk in het verlenen van zorg?]	How would you define good care? [Supporting question: what is, according to you, important in providing care]
Lukt het om deze zorg te leveren? Waarom wel of niet? [Terug refereren naar de vorige vraag en hun antwoord + vragen om te illustreren met een voorbeeld]	Are you able to provide this quality of care? Why are or aren't you able to do so? [Supporting question: Refer back to their answers to the previous question and ask for concrete examples]
Wat voor activiteiten [naast slapen, eten, wassen] onderneemt u nog meer op een dag? [En hoe is dit gelinkt aan het concept 'goede zorg']	Besides the daily activities such as sleeping, eating and washing, what else do you do during the course of the day? [Supporting question: how does this relate to their definition of good quality of care?]
Wat is uw motivatie om leiding te geven aan dit huis? Waarom bent u dit huis gestart of waarom bent u hier gaan werken?	What motivates you to manage this nursing home? Why did you establish this nursing home or why did you decide to work here?
Kunt u het contact tussen u en de bewoners omschrijven? [Naar naasten vragen, doorvragen zodat echt verhouding duidelijk wordt]	How would you describe the contact between you and the residents? [Supporting question, in case it wasn't mentioned: How is your relationship with the residents' family or their social support?]
Wat voor soort mensen wonen er in dit huis? Wat voor soort mensen werken er in dit huis? [Hoe zou u ze typeren? En hoe komen de bewoners hier terecht?]	How would you describe the kind of people living in this nursing home? And could you describe what kind of people work in this nursing home? [Supporting question: How would you typify the people living in this nursing home? How do most residents gain access to this nursing homes?]
Wat is de zorgvisie van dit huis? [Wat is volgens u het doel dat dit huis nastreeft? Is er 1 doel of zijn er meerdere doelen?]	How would you describe the vision of this home? [Support questions: What is according to you the goal that this house pursues? Are there one or multiple goals?]
Wat vindt u belangrijk als u denkt aan de zorg voor ouderen in Nederland? En waarom?	What is, according to you, important for elderly care in the Netherlands? And why?
Zijn er nog andere dingen waar u het over wilt hebben?	Are there other aspects that you would like to discuss with us in the light of this study?

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Expert	
Hoe duidt u de groei van particuliere verpleeghuizen over de afgelopen jaren?	How do you interpret the growth of for-profit nursing homes in the recent years?
Welke kansen ziet u voor deze sector?	What are, according to you, the opportunities for this sector?
Welke belemmeringen ziet u voor deze sector?	What are, according to you, the challenges for this sector?
Waarin verschillen particuliere verpleeghuizen in uw optiek van reguliere verpleeghuizen?	In your view, how do for-profit nursing homes differ from regular nursing homes
Denkt u dat particuliere verpleeghuizen meer onderdeel van de verpleeghuiszorg ( <i>mainstream</i> ) gaan worden in de toekomst? Zo ja waarom wel en waarom niet?	Do you think that for-profit nursing homes will become mainstream in the future? If so, why so and why not?







# Chapter

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Discussion

# 10.



## 10.1. Aim of this discussion

This thesis has sought to answer, at least in part, the question, *do commercially-oriented healthcare providers (especially those operating in niche markets) contribute to a qualitatively better and financially sustainable healthcare system?* Each of the previous chapters examines different pieces of the puzzle, and this discussion puts them together to reveal a partial answer to the question.

Answering this question is important. Understanding (i) the conditions that affect the growth and performance of commercially-oriented providers, including ownership and market conditions, (ii) their performance in comparison with the traditional (non-commercially-oriented) sector, including on costs, quality and accessibility, and (iii) the ethical issues that arise from the provision of healthcare services by commercially-oriented organisations is critical to better policymaking on the role of these providers in healthcare systems. In the Netherlands, there is particular interest in the answer because commercially-oriented providers, despite the ban on profit distribution, have been able to carve out for themselves a niche market position in which they can pursue their commercial interests.

This chapter is organised as follows. It first discusses the main findings and embeds them in the empirical body of literature. Thereafter it outlines the strengths and limitations of this dissertation. Finally, it provides future research and policy recommendations. (Most of the main findings will be mentioned in 10.2., but for a clear overview of the findings, we refer to the “Summary” in the dissertation.)

## 10.2. Discussion of main findings

This section embeds our findings in the existing body of scientific literature. In order to do so, the following questions are answered: (i) (how) are the findings underpinned by literature; (ii) (how) does the existing literature deviate from our findings and why so?; and (iii) what do our findings add to the existing body of knowledge? This section is structured along the lines of the three sub-questions that have been central to this dissertation.

### 10.2.1. Market analysis and market trends

Chapters 2 and 5 support the theory that for-profit providers can gain a competitive advantage from their capital structure. Capital structure was a topic of considerable interest to scholars during the 1980s in the US,<sup>90,151,577,578</sup> but interest in the subject has waned in recent years. Those early US studies determined that the non-profit entities enjoyed lower costs of financing, thanks especially to their tax-exempted status.<sup>90,577</sup> However, non-profits do not enjoy tax-exempt status in every country. In some countries, non-profit providers instead gained a privileged position in the healthcare sector in a different way. In Germany and the Netherlands, for example, the non-profit sector has historically been the main provider because healthcare

providers were originally established and run by charity organisations or the church.<sup>33</sup> In Germany, non-profits worked in close collaboration with the public sector.<sup>579</sup> However, both Chapter 2 and Chapter 5 argue that this advantage of non-profits has ended. We have found that a possible explanation for this turning of the tables is that, due to increasing market-oriented healthcare reforms, non-profit healthcare providers bear more financial risks and, therefore, banks have become more reluctant to issue loans. This shift was also observed in one recent study from Germany.<sup>93</sup> The German article points out that the healthcare sector, and the medical sector in particular, has developed into a capital-intensive sector (e.g. because of demographic and technological developments), and therefore the appetite for investments has increased over the years. However, public and non-profit providers have been increasingly cash-strapped as public and philanthropic funding dried up. This increased the need for capital, which private investors were willing to provide.

Both Chapters 2 and 5 contribute to the (thus far) limited understanding of how commercial providers have grown over recent years and how they have managed to carve out a niche market for themselves. We find that they use the wider healthcare system and existing healthcare establishments to their own advantage. For example, in the case of Dutch for-profit nursing homes, many for-profit homes piggyback on the strong Dutch primary care system for physician services or use geriatricians seconded from non-profit providers. In this way, they avoid hiring their own (expensive) geriatric physicians. Furthermore, the commercial sector is particularly skilled at “exploiting” regulatory (and occasionally illegal) loopholes and this has also contributed to the growth of for-profit providers.<sup>182,184,185</sup> (More on this subject in section 10.2.3.)

Chapters 5 and 6 find that the commercially-oriented sector is more responsive to demand than the non-profit or public sector. Arguably, it is this responsiveness to patient demands that has created a niche for these for-profit nursing homes. Other, international studies have generated similar findings.<sup>92,94,95,118</sup> Hansmann (2003) argues, after studying the hospital sector, that non-profit organisations may be hindered by costly excess capacities and are not incentivised to reduce these capacities, resulting in so-called “trapped capital”.<sup>92</sup> In the US, for-profit hospitals were found to be more sensitive to demand shifts and service profitability than non-profits.<sup>94,118</sup> A German study discovered that for-profits are more responsive to changes in demand, but also expanded in markets with decreasing demand through privatisation.<sup>95</sup>

Market concentration has increased over time in many healthcare systems. There has been, for example, an increase in the number of providers that are chain-affiliated.<sup>292,580,581</sup> In the for-profit sector, large nursing and hospital chains have come to the fore.<sup>409,582</sup> Commercial healthcare providers that serve a niche market follow a similar trend – in this case, the Dutch Independent Treatment Centres (ITCs) and for-profit nursing homes. This finding contradicts the theory that niche markets are

less prone to market failures because entry barriers are low (there are, for example, relatively low up-front investment costs and few restrictions).<sup>304,583</sup>

A possible explanation for the high degree of market concentration in niche markets is that there are several advantages to joining a healthcare chain. Healthcare chains offer economic benefits (including improved access to capital and economies of scale); personnel and management benefits.<sup>315</sup> However, our empirical studies of the ITC sector (Chapters 4 and 7), suggest that chain affiliation does not bring substantial quality gains.

Furthermore, empirical studies found that strong market power drives up prices.<sup>296,311-313,362</sup> Our findings suggest that the relationship between price and market concentration is weak in the ITC sector: we only find a positive relationship for ophthalmological treatments (Chapter 3). The ITC sector is most prominent in providing ophthalmological treatments, 18.4% of the total market in 2016,<sup>81</sup> which may give the ITC sector more bargaining power against the health insurers than with, for example, orthopaedic services whereby the market share is substantially smaller (11% in 2018).<sup>584</sup>

The organisational model of ITCs is inspired by the focus factory theory. This theory predicts that uniting volume and specialisation increases the healthcare organisation's level of expertise and thereby improves its efficiency as well. However, we know very little about how this works in practice and, more specifically, whether ITCs are able to reap the benefits of this organisational model. The majority of studies that analyse the volume-quality relationship focus on low-volume and high-risk procedures. Chapter 4 contributes to the limited existing research on whether a volume-quality relationship also exists for low-risk outpatient care. Similar to the literature on complex procedures,<sup>324-326</sup> we find better quality of care in high-volume ITCs than in low-volume ITCs. The scarce literature that does address this topic supports this finding.<sup>310,333</sup> However, we find that the relationship is weak and the effect decreases as volume increases. A possible explanation for this is that there is an optimum volume for the quality of care, and because ITC treatments are highly standardised and provide low-risk procedures, the optimum might not be much higher than the current mean. An additional explanation is that at one point the organisation reaches a critical size beyond which it requires additional organisational and management layers that may lead to quality losses.

In terms of specialisation, international studies suggest that specialisation can be advantageous for ITCs.<sup>75,310</sup> Moreover, several distinguished international examples have shown that specialised focus clinics can be value-adding entities. Aravind Eye Hospitals in India, for example, adopted a strong Taylorist approach<sup>585</sup> to organising their healthcare provision: they perform high-volume cataract surgery for good quality care and low prices.<sup>586</sup> Other examples of value-adding focus clinics are Shouldice hernia centre located in Canada,<sup>587</sup> and the Martini Klinik located in Hamburg.<sup>588</sup> Some focus clinics may disrupt and redefine the cost and quality frontier and push the traditional providers to move as well.<sup>383</sup> We did not find such

a clear evidence in the Dutch ITC sector. On the face of it, one explanation could be that most Dutch ITCs are unable to match the highly specialised volumes that focus clinics elsewhere (the aforementioned poster child examples) have been able to achieve.<sup>ix</sup>

### 10.2.2. Performance (costs, quality, access, efficiency)

Economic theory predicts that, in competitive healthcare markets where outcomes are measurable, for-profit providers should outperform public and non-profit providers on efficiency and possibly quality of care.<sup>106</sup> However, our systematic review and other systematic reviews do not empirically support this theory.<sup>61,98,101,103,117,589</sup> Various explanations can be given for this result. One explanation is that exogenous economic incentives might override the differences in mission between for-profit and non-profit organisations and cause them to act similarly.<sup>145,146</sup> In addition, large variations in performance within each ownership type make it difficult to draw conclusions on the basis of ownership-type differences.<sup>61</sup>

The focus factory theory predicts that ITCs should outperform hospitals on costs and quality, and our empirical evidence on the ITC sector partly supports this theory. Our study on cataract care (Chapter 8) indicates that ITCs do indeed achieve higher efficiency and charge lower prices compared to general hospitals. The latter findings were also reported by other international studies (i.e. US and the UK).<sup>318,319,488,590</sup> We, however, found similar list prices between ITCs and general hospitals in another study (Chapter 7). One possible explanation is that list prices do not necessarily reflect the negotiated prices in healthcare, and may not, therefore, be a good proxy for efficiency. One other possible explanation for this finding is that ITCs can charge prices similar to hospitals' prices for those patients who actively seek care from ITCs – irrespective of whether the ITC is contracted by their healthcare insurer – because ITCs have, for instance, shorter waiting times and better amenities. With regard to quality of care, we found no convincing evidence that the focus factory approach provides better quality of care. This is also supported by the majority of the international empirical evidence.<sup>318-320,488,591</sup>

However, ITCs do seem to perform better than the traditional sector on certain observable indicators, most notably patient satisfaction (Chapter 8). This supports the theoretical argument that commercially-oriented providers focus on quantifiable measures. Other, international studies have found similar results.<sup>490,491</sup>

### 10.2.3. Ethical considerations

The literature identifies several ethical tensions that arise from treating healthcare as a commodity.<sup>e.g.,15,16</sup> Firstly, for-profit providers may be more susceptible to undesirable

ix We find that ITCs vary strongly in how many treatments they do annually: it ranges from very small ITCs (e.g. 100 invasive treatments annually) to bigger ITCs (e.g. 8,000 invasive treatments annually) (Chapter 4).

behaviour when this is financially favourable. In economic terms, such behaviour can manifest itself in three forms: (i) upcoding, (ii) supplier-induced demand; and (iii) cherry picking. Secondly, it has been claimed that commercial interests may harm the process of care-giving. Our studies picked-up several warning signs that support some, but not all of these propositions.

Our systematic review discusses two Italian studies which found that private, and especially for-profit hospitals, are more often involved in upcoding practices.<sup>427,440</sup> These findings are supported by studies from the US.<sup>182,592</sup> In our study of Dutch ITCs, we found an irregular combination of a higher number of claims, but a lower number of activities within each claim. This could be because of greater efficiency, but could also be explained by upcoding practices. It is difficult to distinguish between the two.

Evidence from the US warns us that commercially-oriented niche providers, especially ITCs, may increase overall levels of healthcare utilisation by patients.<sup>531,593-596</sup> Chapter 8 found higher (surgical) volumes per patient care pathway for ITCs than for hospitals, which raises the question of whether ITCs in the Netherlands induce demand. Another Dutch study supports this concern and finds that ITCs often have high practice variation scores.<sup>597</sup> ITC care can therefore impose additional costs because of the risk that they induce demand. Some studies find that physician-owned providers are particularly likely to do this.<sup>593,594,598</sup>

Commercially-oriented niche healthcare providers are often accused of “vertical” cream skimming (selection of patients) and “horizontal” cream skimming (selection of treatments).<sup>599</sup> Several studies, including our own systematic review, have examined this claim and have indeed found that commercially-oriented providers are more likely than their counterparts to pursue the most lucrative patients.<sup>119,120,511</sup> Chapter 5 supports claims of vertical cream-skimming in for-profit nursing homes; and Chapter 8 corroborates other studies on ITCs in finding that they too vertically cream-skim.<sup>114</sup> However, our findings on ITC provision of cataract care add some nuance: we find only limited selection of low-severity patients for cataract care by ITCs. One other international study found similar results and argues that case-mix differences (one measure of vertical cream skimming) depend on the type of treatment.<sup>496</sup> The financial benefits of patient selection may be more limited for (very) low-risk procedures such as cataract care, and more profitable for more complex procedures, such as total hip replacements.

From an ethical point of view, various scholars have argued that the process of caring cannot be reconciled with commercial interests.<sup>15-18,21,115</sup> However, Chapter 9 argues that healthcare providers operate in complex systems, and therefore that the ethical implications are more nuanced. Although it is safe to say that most healthcare systems have become more commercialised,<sup>600</sup> that does not mean that all actors within it (e.g. managers, healthcare professionals and patients) are equally affected by commercial imperatives, and therefore the impact of commercialisation can differ from actor to actor. In addition, Chapter 1 and Chapter 9 argue that there might be a variation in the degree of commercialisation in the healthcare sector.

These observations correspond with the idea of “complex pluralism”<sup>552</sup> and suggest that there is something like a spectrum of commodification.<sup>555</sup> This has three implications for how we understand commercial niche providers. Firstly, a multi-layered system could have a filtering trickledown effect. As a result, the different layers of the system can accommodate the professional and care logics (see Chapter 9 for an explanation of the different logics). Secondly, our studies underscore the diversity of the commercially-oriented sector. The degree of commercialisation differs between providers, and they therefore have different risk-profiles. In theory, highly commercialised providers, such as private equity-owned providers which are increasingly prevalent in the Dutch healthcare system,<sup>69,601</sup> would be more inclined to prioritise the logic of the market over the logics of care or professionalism than less commercialised providers, and we did find some evidence of this. Chapter 5 tentatively suggests that private-equity owned nursing homes skimp on quality of care, and the majority of the international evidence are more conclusive and find a negative relationship between private-equity owned providers and quality of care.<sup>407,410</sup> Thirdly, the drivers of the growth of the commercially-oriented niche providers and the role of these providers have an important bearing on whether there is tension between commercialisation and the logic of care. For example, Dutch for-profit nursing homes grew, in part, out of a dissatisfaction with the old, traditional, bureaucratic model. By contrasting themselves with this old model, and “selling” a new care logic, commercially-oriented care providers can be seen as actually creating a better environment for the care relationship and may therefore be closer to embracing the logic of care than traditional non-profit nursing home providers. However, for-profit nursing homes do give rise to ethical concerns about equity, because for-profit nursing homes are mainly accessible to clients with deep pockets. This two-tiered, or two class, system of care infringes on a fundamental aspect of social justice based on equal access to healthcare, providing similar treatment for similar cases.<sup>602</sup>

#### **10.2.4. The commercially-oriented niche sector in the wider healthcare system**

Our studies find that the role that commercially-oriented providers play differs by sector and country. The kind of role may influence how commercially-oriented providers perform in the healthcare system. These roles come with different opportunities and risks, which has implications for policymaking. Dutch ITCs (Chapter 3, 7 & 8), for-profit nursing homes (Chapter 5), differentiated the service that they provide from the service offered by the traditional sector, thereby creating a niche market. By contrast, for-profit hospitals in Germany and the US (Chapter 2) are in direct competition with non-profit and public hospital and have obtained a much larger market share.<sup>34,277</sup> Whereas the performance of those German and US hospitals do not clearly stand out (Chapter 6),<sup>99,101</sup> Dutch ITCs and for-profit nursing homes do perform differently from the traditional market. We find that for-profit



homes and ITCs focus most of their efforts on patient satisfaction and amenities (Chapter 5, 8 & 9).<sup>392,490,491,590,603</sup>

The possible spill-over effects on the “traditional” sector may differ depending on the market composition of the healthcare sector. Small-scale grass-root organisations can bring innovative ideas to the table and which may redefine the quality or cost frontier, keeping the “traditional” sector vigilant. These grass-root organisations may even have the potential to disrupt the healthcare system.<sup>383</sup> However, on the flip side, small-scale niche providers can hide in the shadows of the traditional providers, giving them the opportunity to operate under the radar and leading to concerns about safety and quality of care. Larger commercial providers that operate at the margin come with other risks. The increasing market consolidation in the ITC and for-profit nursing home market could damage the functioning of both markets,<sup>604</sup> niche and “traditional” market, and may weaken the positive spill-over effects on the “traditional” market.<sup>304</sup> In addition, accountability is an issue when complex webs of affiliated companies make it difficult to pin-down who is responsible for what.<sup>605</sup>

### 10.3. Strengths and Limitations

This thesis offers new perspectives on the long-running debate about whether commercial healthcare providers contribute to a sustainable healthcare system. There is very little knowledge about how commercially-oriented healthcare providers in the Netherlands operate as niche providers. Even though the Dutch ITC sector has grown significantly, it has received very little attention from the academic community. Chapter 4 adds to our limited knowledge if volume relates to quality of care in the ITC sector. Furthermore, studies outlined in Chapter 7 and 8 are the first that empirically compare the performance of the Dutch ITC sector with general hospitals. Our study on the Dutch for-profit nursing homes also adds to our scant knowledge about the factors behind the rise of the Dutch commercially-oriented niche sector.

Like any study, this dissertation has its limitations. Firstly, the selection of cases is restricted to hospitals, nursing homes and ITCs. Other possible candidates have been excluded from the analysis. However, the scope was narrowed down to study specifically those commercially-oriented providers affected by the profit distribution ban.

Secondly, Chapter 6 does not clearly distinguish between commercially-oriented and non-commercially-oriented providers: it compares the entire private sector (non-profit and for-profit) with the public sector. Most healthcare systems host a mixture of public and private partners, whereby the role of the private providers differ by country (i.e. supplementary or complementary<sup>87</sup>). The degree of commercialisation of both non-profit and for-profit providers is therefore also context-dependent. As a result, this study upholds a wider definition of commercially-oriented providers.

Thirdly, the data on ITCs and for-profit nursing homes is limited in terms of both (public) availability and quality. There is, for example, a lack of patient-level data. For



the for-profit nursing home sector, we compiled our own data and remedied some of the data limitations by triangulating quantitative research, qualitative research and research based on secondary sources. Nevertheless, data limitations remain. To study the quality differences between traditional and for-profit nursing homes is currently, a bridge too far.<sup>x</sup> Moreover, case-mix differences are hard to observe in the available data and are underreported in both the ITC sector as well as the for-profit nursing home sector. This could distort our findings.

Fourthly, we did not analyse the spill-over effects of commercially-oriented niche providers on traditional providers. For example, hospitals may have improved their outpatient services and lowered their outpatient service prices in order to compete with the ITC market.

Finally, all the findings in this thesis are context-dependent and, therefore, difficult to extrapolate or are generalisable to others institutional environments. For example, the underlying factors that have led to the growth of ITCs and for-profit nursing homes are very specific to the Dutch context.

## 10.4. Policy implications

Our findings motivate several policy recommendations. This section will outline those recommendations. Firstly, we set out a few general policy observations. Secondly, we highlight the interaction between internal and external structures. And finally, this section questions briefly whether the healthcare sector would be better off without commercially-oriented healthcare providers that operate in a niche market.

### 10.4.1. Outline public policy implications

Firstly, policymakers should be aware of the critical importance of seemingly technical details of how public reimbursements schemes treat for-profit healthcare providers, particularly regulations related to accessing public capital funding and reimbursement for private capital expenditures. This has a great impact in shaping the for-profit sector (Chapter 2). The importance of capital payments policies are especially important when providers require large investments (e.g. long-term care sector<sup>606</sup>). In addition, politicians need to be careful when compromising on ownership restrictions in order to implement policies that enhance access to care services (e.g. universal healthcare). Moreover, the commercially-oriented sector has proven to be quite sticky; once it has grown, as a sector it tends not to shrink.

x Even if quality is generally hard to measure in nursing homes, there are several quality measures which are commonly used that establish a certain standard of care (e.g., incidence of pressure ulcers, staffing). (104. Bos A, Boselie P, Trappenburg M. Financial performance, employee well-being, and client well-being in for-profit and not-for-profit nursing homes: A systematic review. *Health care management review*. 2017; 42(4): 352-368. doi:<https://doi.org/10.1097/HMR.000000000000121>, 113. Comondore VR, Devereaux P, Zhou Q, et al. Quality of care in for-profit and not-for-profit nursing homes: systematic review and meta-analysis. *Bmj-British Medical Journal*. 2009; 339: b2732. doi:<https://doi.org/10.1136/bmj.b2732>)

Nationalising healthcare providers to reverse this growth is likely to be costly and politically contentious.

Secondly, policymakers need a targeted approach to harness the benefits and mitigate the risks of commercially-oriented healthcare provision. On the one hand, policymakers should target risk mitigation efforts at the most commercially-oriented providers to monitor, for example, whether they are skimping on quality of care. On the other hand, policymakers should nurture small-scale grass-roots organisations that have innovative ideas which could improve quality of care, and should help these organisations to become better established. At the same time, they should keep a watchful eye on the small-scale providers and ensure they do not fly under the regulator's radar.

Thirdly, the commercially-oriented niche provider can transition towards a more mainstream position. If they do so, public regulators and healthcare purchasers may need to be on their guard since certain risks may increase. The Dutch ITC sector is an example of this. ITCs serve a niche market, but are gradually becoming rivals to general hospitals. (For example, the ITC sector currently holds 18.4% the ophthalmological market in 2016.<sup>81</sup>) If general hospitals are unwilling to give up some of their share of elective procedures,<sup>xi</sup> ITCs may pursue undesirable behaviours to cover their fixed costs, such as inducing demand. If healthcare purchasers wish to purchase more care from ITCs, an active role from the healthcare purchasers is required to reallocate care from general hospitals to ITCs. If not, healthcare purchasers should actively try to keep ITCs in their niche position.

Fourthly, the involvement of commercially-oriented providers in healthcare has several systemic implications for the healthcare system. On the positive side, commercially-oriented providers can relieve pressure on traditional providers (e.g. waiting times)<sup>608,609</sup> and incentivise them to organise their care more efficiently or adopt some of the better practices of innovative commercial providers. Therefore, policymakers should protect the functioning of the commercial sector, even if it only operates at the margins. However, policymakers need to ensure greater transparency in (unwarranted) practice variation between commercially-oriented and traditional providers. And where commercially-oriented providers introduce as risk of "vertical" or "horizontal" cream skimming,<sup>33,610,611</sup> policymakers should ensure reimbursement schemes are fully risk-adjusted.<sup>xii</sup> Finally, policymakers must be alive to the risk that commercially-oriented providers, such as for-profit care homes, allow care seekers with deep pockets to skip the queue, which raises questions of fairness. Price controls (such as production costs and reimbursements) may help to mitigate this concern.

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xi These are often lucrative treatments and often needed to cross-subsidise to fund highly-complex acute care (607. De Boer W. Regievoerder gezocht voor het Nederlandse ziekenhuislandschap. *Beleid en Maatschappij*. 2019; 46(4): 481-489. doi:<https://doi.org/10.5553/BenM/138900692019046004009>)

xii A fully risk-adjusted tool may, however, be quite difficult to construct since most of the variation is unobserved.

### 10.4.2. External and internal incentives are mutually reinforcing

Differences caused by organisational differences (e.g. ownership status) only tell one side of the story; both internal and external incentives shape the behaviour of commercially-oriented healthcare providers. The fact that our study subjects (in this case, ITCs and for-profit nursing homes) have carved out a niche market to pursue their commercial interest, in some cases by circumventing the for-profit ban, as a response to a more market-based healthcare system, in a way, exemplify that the external structure plays an important role in shaping the behaviour of organisations. This is to say that the internal organisational incentives (e.g. maximising profits) and the external incentive structure interact and may be mutually reinforcing. As section 10.2.3. shows, external incentive structures can worsen the behaviour of commercially-oriented providers. Relatedly, Chapter 9 demonstrates that the market logic should not supersede the logic of care or the logic of professionalism. It is therefore worth looking at how external incentive structures can be used to create an environment that avoids creating or accentuating internal incentives for undesirable behaviour.<sup>553</sup> For example, in physician-owned providers have a direct financial interest to increase volume when volume is financially rewarded, and are therefore more susceptible to supplier-induced demand and cream-skimming patients via self-referrals. In the US, policymakers took an aggressive approach and placed new restrictions on existing physician-owned specialty hospitals, and reinstated a moratorium on payments to new ones.<sup>196</sup>

### 10.4.3. Is it worth the trouble?

The aforementioned sections demonstrate the puzzling and tricky task of regulating commercially-oriented providers. The ITC sector is a good example of a sector that, at least in theory, has favourable conditions for businesses to flourish and where market failures are less likely to occur. The market entry barriers are relatively low in the ITC sector compared to the hospital sector, and risks arising from information asymmetry between patient and provider are limited because treatments are relatively “simple”.<sup>612</sup> Despite all these favourable conditions, the ITC sector still suffers from (serious) market failures (see section 10.2.3.) and requires strong supervision and coordination by public authorities (e.g. the healthcare inspectorate and healthcare insurers).

We might therefore ask whether commercially-oriented niche providers are worth the trouble. Do the benefits of allowing commercially-oriented providers in the healthcare system justify the design of sophisticated mechanisms to prevent adverse and rent-seeking behaviour? Should policymakers try instead to eradicate the niche market? Or is (more) public provision the answer to achieve a sustainable healthcare system? Public providers benefit from a lower cost of capital (generally speaking, governments can borrow more cheaply than private companies) and lower transaction and regulation costs.<sup>613</sup>

However, non-market providers also have their deficiencies, which motivated the creation of the New Public Management movement (see Chapter 1).<sup>564</sup> Before introducing the regulated competition reform, the Dutch healthcare system suffered from serious inefficiencies, including long waiting times and unresponsiveness to demand.<sup>25</sup> Without competition on efficiency and quality from commercially-oriented providers that adopt new care and organisational model, government failures may worsen.<sup>xiii</sup> All things considered, even though the commercial niche sector requires close supervision, it serves to keep traditional healthcare providers on their toes.

## 10.5. Recommendations for future research

New insights also lead to new questions. Our studies reveal several important research topics that would further enhance our understanding of commercially-oriented healthcare providers.

We have presented a rich picture of how commercially-oriented niche providers and traditional providers relate to each other. However, important questions remain. For example, does ownership (i.e. public, non-profit and for-profit) matter in the ITC sector in relation to costs, quality and accessibility? Future studies may want to take up the baton on this topic.

This thesis invites further research on the market dynamics of the niche market. Quantitative studies could help to develop a more complete picture of the volume-quality relationship in the ITC sector. Studies that also take the learning curve of individual surgeons into account could also be very valuable.

The risk that commercially-oriented providers could create a two-tier healthcare market with wealthier patients able to access faster or better care raises several ethical questions. One is the question of fairness and equity. People with sufficient financial means are able to skip the queue, but by doing so relieve pressure on the traditional sector. This calls for further ethical reflection on the accessibility of commercially-oriented niche providers, for which critical-applied ethics approach may be best suited.<sup>562</sup> In addition, further investigation is required on whether ITCs have more irregular claims or disproportionately increase utilisation in the Netherlands.

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xiii Even though Chapter 6 concludes that public hospitals are just as efficient or even more efficient than private hospitals, it is, however, questionable whether public healthcare providers maintain their efficiency levels if they do not operate in mixed markets. (118. Horwitz JR. Making profits and providing care: Comparing nonprofit, for-profit, and government hospitals. *Health Affairs*. 2005; 24(3): 790-801. doi:<https://doi.org/10.1377/hlthaff.24.3.790>, 145. Kessler DP, McClellan MB. The effects of hospital ownership on medical productivity. *RAND Journal of Economics*. 2002; 33: 488-506. , 609. Carey K, Burgess JF, Young GJ. Hospital competition and financial performance: the effects of ambulatory surgery centers. *Health Economics*. 2011; 20(5): 571-581. doi:<https://doi.org/10.1002/hec.1617>, 615. Duggan M. Hospital market structure and the behavior of not-for-profit hospitals. *RAND Journal of Economics*. 2002; 33: 433-466. , 616. Santerre RE, Vernon JA. The consumer welfare implications of the hospital ownership mix in the US: an exploratory study. *Health Economics*. 2006; 15(11): 1187-1199. doi:<https://doi.org/10.1002/hec.1127>)

## 10.6. Conclusion: healthcare provision open for business?

There are three main conclusions to this discussion. Firstly, the opportunities of the commercial healthcare sector are access to (large) capital funds and better responsiveness to demand, leading to better client satisfaction. On the flip side, commercially-oriented niche healthcare providers open the healthcare system to the risks of cherry-picking, upcoding, exploitation of legal loopholes, free-riding and increased over-utilisation. Furthermore, contrary to what economic theory predicts, the existing body of research suggests that commercial providers do not outperform traditional providers on efficiency and quality of care.<sup>98,101,102,113,137</sup>

Secondly, if policymakers want to better regulate the commercially-oriented niche healthcare sector, specific monitoring and rules could target adverse and rent-seeking behaviour. This demands greater transparency of financial flows and improved quality measures.<sup>xiv</sup> Furthermore, commercially-oriented providers need an external incentive structure that avoids incentivising bad behaviour.

Thirdly, even though the commercially-oriented niche sector may have positive spill-over effects on traditional providers, regulating and monitoring the commercially-oriented niche healthcare providers is costly and gains are limited. But rather than simply dichotomously stating whether commercial providers should or should not be allowed, we should ask *to what degree* we want commercial providers in the healthcare sector and *how* they should be allowed to operate. Policymakers should keep an especially watchful eye on the degree of commercialisation in the sector: heavily commercialised providers come with higher risks which may outweigh the benefits.

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xiv Quality over quantity regarding what we measure – the focus should be on outcome measures instead of process and structure measures.

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# Chapter

# 11.

## **For-profit hospitals out of business? Financial sustainability during the COVID-19 epidemic emergency response**

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## Abstract

This perspective argues that for-profit hospitals will be heavily affected by epidemic crises, including the current coronavirus disease 2019 (COVID-19) outbreak. Policymakers should be aware that for-profit hospitals in particular are likely to face financial distress. The suspension of all non-urgent elective surgery and the relegation of market-based mechanisms that determines the allocation and compensation of care puts the financial state of these hospitals at serious risk. We identify three organisational factors that determine which hospitals might be most affected (i.e., care-portfolio, size and whether it is private equity [PE]-owned). In addition, we analyse contextual factors that could explain the impact of financial distress among for-profit hospitals on the wider healthcare system.

**Keywords:** For-profit hospitals, COVID-19, epidemics, financial resilience



## 11.1. Background

For-profit hospitals pursue returns on equity. They do so with a business model that, firstly, relies on high and stable cashflow (for which healthcare is well-known) and, secondly, targets more lucrative sectors such as elective surgeries for less complex patients.<sup>33</sup> The coronavirus disease 2019 (COVID-19) pandemic suddenly makes this business model much more risky. In this perspective we argue that the for-profit hospital sector will see considerable changes. We identify three organisational factors that determine the financial resilience of for-profit hospitals, and we discuss that certain healthcare systems are more vulnerable than others to financial distress in the for-profit hospital sector.

The COVID-19 outbreak has caused a surge of patients seeking medical care in numerous hospitals, especially in facilities with many acute care beds. Other hospitals might be confronted with the opposite fate: they are practically empty. In several countries, it is notable that particularly private, for-profit hospitals are under severe pressure.<sup>617</sup> For-profit hospitals tend to focus on non-acute elective care, more so than other hospital ownership types.<sup>33,45</sup> They have therefore experienced a drop in demand. First, non-acute care had to be put on hold to free up human resources, facilities, beds and equipment materials. Second, suspending non-acute care minimises the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Third, the supply of personal protective equipment is limited so it has to be used where it is most needed, and non-acute care therefore had to make way for acute care. Fourth, in various healthcare systems, the public emergency response to COVID-19 has side-lined market-based mechanisms (e.g., patient choice and fee-for-service contracts) and for-profit hospitals relied on these mechanisms. The collapse in stock market prices for for-profit hospital chains reflects the financial hardship the sector is experiencing. For example, the share prices of Spire Healthcare Group, Community Health Systems and Tenet Healthcare Corporation fell by approximately 60% from 20/2/2020 and 20/3/2020.<sup>618</sup> HCA Healthcare and Universal Health Services saw their share prices almost halved.<sup>618</sup> The price decrease of publicly-quoted (PQ) healthcare chains were steeper than the decline of the S&P 500, which was -28.6% between 20/2/2020 and 20/3/2020. And although the stock market has recovered somewhat, HCA, the bellwether of the industry, skipped share repurchases and dividend payments.<sup>619</sup>

### 11.1.1. Definition

We focus specifically on for-profit hospitals. For-profit hospitals are different from public and non-profit entities insofar as that they can distribute their net earnings to their shareholders and hold all residual claimant rights. Non-profits have to comply with a non-distribution constraint and are expected to serve the interests of “beneficiary stakeholders”.<sup>62</sup>

## 11.2. Financial resilience for-profit hospital sector

We define three organisational factors that determine the financial resilience of for-profit hospitals in the specific context of pandemics such as the outbreak of COVID-19: care portfolio, size, and ownership.

### 11.2.1. Care portfolio

The impact of the epidemic on for-profit hospitals depends strongly on their specific care portfolios. These range from more mixed portfolios to the almost exclusive provision of outpatient treatments (i.e., outpatient hospitals and independent treatment centres, known as “ambulatory surgical centers”, ASCs, in the United States, US). Hospitals that only provide non-acute care experience a larger drop in demand. Even those for-profit hospitals that provide acute care beds tend, financially, to rely heavily on elective treatments.<sup>33</sup> For-profit hospitals will lose a great chunk of their revenue during the COVID-19 response, eroding their profit margins. Even if for-profit hospitals can compensate for the financial setback by increasing their capacity of acute care beds, this may not be a lucrative business and serve only to cover costs. In some countries, acute care beds are often the most expensive service to provide.<sup>607,620</sup>

### 11.2.2. Size

For-profit hospitals come in all shapes and sizes. The large, often chain-affiliated, hospitals are more resilient than small, often sole-proprietorship, hospitals because they often have more reserves and are able to cross-transfer money from different businesses. Small-scale hospitals do not have that luxury and tend to be less profitable,<sup>138</sup> which makes them more vulnerable to financial default because they might have not been able to build up reserves.

### 11.2.3. Private equity owned versus publicly-quoted and owner-managed hospitals

We argue that the private equity (PE)-owned hospitals are especially at risk of default on their payments compared to PQ and owner-managed (OM) entities because PE firms tend to take higher financial risks.<sup>69</sup> The PE-owned hospitals are often the most debt-inflated providers.<sup>293,621</sup> Because of their high debt-to-equity ratios, they depend on a constant cashflow. Moreover, PE firms usually have short time horizons: they seek to sell companies with a decent profit after a limited period. This risk-embracing short-term strategy may turn against PE-owned hospitals in an epidemic crisis.

OM hospitals tend, at least in theory, to be more risk-averse and to have longer time horizons for running their businesses because the investors are involved in the daily management of the company and are more “emotionally” committed. For example, physicians who own their hospitals want to earn a decent financial return but are also incentivised to maintain a financially sustainable business over a long period.

PQ hospitals have to comply with stricter financial transparency and accounting regulations, which may make these hospitals' finances more robust than others'. However, the financial status of PQ hospitals still varies (see Table 11.1). For example, HCA has a solvency rate of -13% in 2018 and Tenet Healthcare has a rate of -1%, whereas Universal Health Services has a rate of 48%.<sup>618</sup> (This may however be explained by the previous involvement of PE in HCA and Tenet Healthcare.<sup>293</sup>) Due to the pandemic, it will be more difficult for PQ hospitals to raise funds on the stock market. PQ hospitals with high debts and plummeting share prices are therefore confronted with a double burden. Table 11.1. also shows that PQ hospitals are especially active in the US.

**Table 11.1.** Financial status pre-COVID-19 of the main publicly-quoted hospital chains.

	<b>Operating revenue (turnover) the last available year (USD billion)</b>	<b>Average annual profit margin (2010-2018) (EBT over operating revenue)</b>	<b>Solvency rate (Debt/Asset) 2018</b>	<b>Global outreach</b>
<b>HCA Healthcare, Inc.</b>	46.7 (2018)	10.0%	-12.6%	US, UK
<b>Ramsay Health Care Limited</b>	8.0 (2019)	8.2%	26.3%	AU, DE, UK, ID, MY, HK, IT, FR, DA
<b>Tenet Healthcare Corporation</b>	18.3 (2018)	1.3%	-0.5%	US
<b>Community Health Systems, Inc.</b>	14.2 (2018)	-1.6%	-9.7%	US
<b>Universal Health Services, Inc.</b>	10.8 (2018)	10.9%	47.8%	US, UK
<b>Spire Healthcare Group PLC</b>	1.2 (2018)	12.3%	31.3%	UK
<b>Fresenius SE &amp; CO KGAA</b>	31.3 (2016)	10.8%	44.7% (2016)	DE, ES

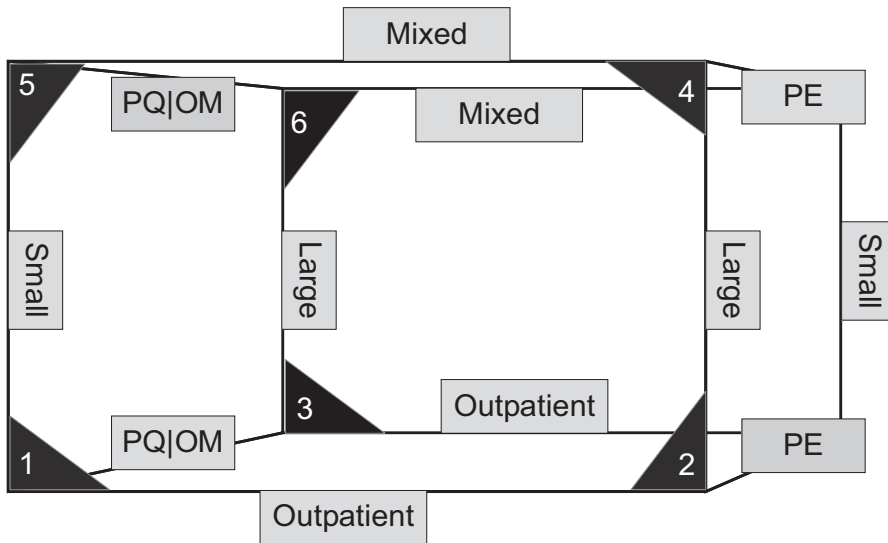
Source: Bureau van Dijk<sup>618</sup>

Abbreviations: US, United States | UK, United Kingdom | AU, Australia | DE, Germany | ID, Indonesia | MY, Malaysia | HK, Hong Kong | IT, Italy | FR, France | DA, Denmark | ES, Spain | COVID-19, coronavirus disease 2019 | EBT, earning before taxes.

### 11.3. Financial resilience to an epidemic shock

We argue that the care portfolio of for-profit hospitals is the most influential factor for their financial resilience, followed by size and ownership. Figure 11.1. presents a schematic outline of these factors. The corners indicate the combination of organisational factors of for-profit hospitals which determine their financial resilience in an epidemic crisis. (Because small-scale PE-owned hospitals are very rare, or non-existent, we left these corners out.) The corners include scores. One (1) indicates the most vulnerable organisational form and six (6) indicates the least vulnerable. Thus, small-scale OM hospitals that focus strongly on outpatient treatments are most at risk (corner 1 in Figure 11.1.). The for-profit hospitals that are on the safer side of the spectrum (corner 6) are providers that are (i) not owned by a PE firm, (ii) that provide a mixed care-portfolio and (iii) are relatively large.

**Figure 11.1.** Schematic outline financial resilience for-profit hospitals



Abbreviations: PE, private equity; OM, owner-managed; PQ, publicly-quoted.

### 11.4. Context matters

The impact on the healthcare system of for-profit hospitals getting into financial trouble is context-dependent. Table 11.2 outlines the factors that determine the vulnerability of different healthcare systems and we have selected a few countries to illustrate this.

The impact of COVID-19 on the for-profit sector differs by country. Firstly, the infection rate of COVID-19 varies by country. Australia has fared relatively well,

whereas Spain and the US have been more severely affected. Secondly, the role that for-profit hospitals have either been assigned or taken on voluntarily during the COVID-19 outbreak also varies by country. For instance, Spanish for-profit hospitals have been under governmental control since the epidemic broke out, and the impact of this measure on the private sector is difficult to predict. By contrast, the private sector in Poland has been side-lined; if they receive neither a cost-base recovery rate nor a loss-making rate during this period, it could deal a severe financial blow to the sector. Other countries, including the United Kingdom (UK) and Australia, do receive a cost-base recovery rate. The question then is whether the cost-base recovery rate will be sufficient to avoid financial difficulties in the long run. In the US, for-profit hospitals have a different problem: during the crisis, they will be treating more patients who are covered by low-margin Medicaid reimbursement rates. US hospitals also face an especially high burden of debt, likely due to the high level of PE ownership in the US for-profit sector.

The extent to which different healthcare systems depend on the for-profit sector for providing in-patient care differs. The for-profit sector's share of in-patient beds ranges from 30% in Germany to 5% in the UK. In addition, in most healthcare systems there is high degree of market consolidation in in-patient hospital care, which makes healthcare systems like Germany's relatively vulnerable when a for-profit chain with a large market share faces financial distress. Although the risk of default may be lower among large multi-hospital chains, if they fail, the impact on the wider healthcare system is much more serious. The much smaller for-profit hospital sector in the UK is at less risk and plays a limited role versus other healthcare systems, however the market consolidation in the UK for-profit sector is substantial: when one large chain defaults on its payments, it may significantly disrupt the entire for-profit sector. In other countries, such as Germany and Australia, debts associated with PE ownership are also a serious threat to for-profit in-patient hospitals.

Most countries in Table 11.2. lean heavily on the private sector to provide outpatient care. (In the UK its influence is much smaller, however.) This may make the ASC sector relatively vulnerable to financial distress in the for-profit sector. Although it is challenging to obtain data on the ownership status of the different ASCs in each country, we do know that in the US and Poland a number of ASC chains are PE-owned,<sup>293,622</sup> and this could make these sectors more vulnerable.

Table 11.2. Contextual and institutional factors related to the financial resilience of for-profit hospitals and the vulnerability of healthcare systems

	United States	United Kingdom	Spain	Germany	Australia	Poland
<b>1. Covid-19 prevalence on 29 April, 2020</b>	+++ 1 01 2583 cases 58 355 deaths <sup>623</sup>	++ 161 145 cases 21 678 deaths <sup>623</sup>	+++ 210 773 cases 23 822 deaths <sup>623</sup>	++ 157 641 cases 6 115 deaths <sup>623</sup>	- 6 738 cases 88 deaths <sup>623</sup>	+ 12 218 cases 59% deaths <sup>623</sup>
<b>2. Private sector involvement in COVID-19 outbreak</b>	++ For-profit hospitals are in the COVID-19 frontline. They are legally obliged to treat patients in need for emergency care, regardless of ability of pay. <sup>176</sup> The increase of publicly funded patients (uninsured, Medicaid, Medicare) will decrease profit margins because rates are substantially lower than private rates. <sup>194</sup>	++ The NHS has bought the capacity of the private sector. The private sector receives a cost-covering price. <sup>624</sup>	+++ The government has taken a more intrusive approach of placing private healthcare providers under their control, assuming charge of their buildings, human resources and material resources (e.g. respirators). <sup>625</sup>	++ For-profit hospitals has joined forces against COVID-19 alongside public and non-profit hospitals. <sup>626</sup> German hospitals receive a compensation of €560 per day for an empty bed. The government in addition made a federal budget available for ICU beds of €50 000 per bed. <sup>627</sup>	+ The private hospital sector helps during the epidemic crisis on a cost recovery basis after they warned the government that for-profit hospitals might need to close as a result of the suspension of most non-urgent elective surgeries. <sup>628-630</sup>	-- The involvement of for-profit hospitals has been limited or blocked by the government. <sup>631</sup>

Table 11.2. Continued.

	United States	United Kingdom	Spain	Germany	Australia	Poland
<b>3. Share of for-profit hospitals in in-patient care</b>	+	-	+	++	+	+
	17.0% share in beds (2016) <sup>632</sup>	3.3% share in acute beds (2014) <sup>162</sup>	19.1% share in beds (2017) <sup>632</sup>	30.4% share in beds (2017) <sup>632</sup>	18.9% share in beds (2016) <sup>632</sup>	12% share in beds (2016) <sup>633,i</sup>
<b>4. Share of for-profit hospitals in outpatient care services</b>	++	-	+	+++	++	+++
	The number of ASC (generally for-profit) has increased by an average annual rate of 1.0% between 2012 and 2016. <sup>197</sup> 5,603 ASCs were providing treatments to Medicare patients in 2017. <sup>197</sup>	In England, 6% of all NHS elective activity are done in ASCs (2017-2018). <sup>634</sup> However, they also provide care to private patients, hence, they play a larger role in the healthcare system than the 6%.	The private sector has 29% of surgical interventions in outpatient care in 2015. <sup>635</sup>	Most outpatient treatment centres are run by private practices. Yet, a small proportion of these treatments are provided by hospitals. <sup>275</sup>	The private sector provides most of the outpatient care: in 2015, 8,001 outpatient care specialists work in a private practice and 3,745 in public hospitals. <sup>636</sup>	Specialist outpatient care is predominately provided by the private sector. <sup>633</sup>

i These are all private sector beds – division between non-profit and for-profit is unclear.

Table 11.2. Continued.

	United States	United Kingdom	Spain	Germany	Australia	Poland
5. PE-owned hospitals	++ PE investments expanded significantly. In 2018, 855 deals worth \$100 billion were made. Leverage buyout increased from 5% in 2000 to 14% in 2018%. <sup>293</sup>	± Although the involvement of PE funds in the UK seems to be more active in the long-term care sector. They are also active in the hospital sector. E.g. Circle Health belongs to a PE firm. In 2019, they are merging with BMI healthcare. <sup>637</sup>	± The largest private hospital chain (Quironsalud) was bought from two different PE firms to the German hospital chain, Fresenius. <sup>638</sup>	+ Between 2013 and 2018, 22% of the PE acquisitions in the healthcare sector were in the hospital sector. These accounted for 27 hospitals. <sup>639</sup>	+ Although it is difficult to obtain information for Australia, Austria is together with China and India the country with the highest activity of private equity firms in the Asia-Pacific. <sup>640</sup> In 2019, the second largest private hospital chain was taken over by Brookfield Asset Management. <sup>641</sup>	++ The expansion of the private sector in Poland caught the attention of PE firms. <sup>622</sup> E.g., the largest private provider of outpatient healthcare was owned by a PE company (Mid Europa Partners).
6. Market consolidation in-patient care (if possible, private sector specific)	++ 90% of Metropolitan Statistical Areas had highly concentrated hospital markets in 2016. <sup>580</sup>	++ The four largest private hospital chains cover 60% of the total independent hospital sector. <sup>162</sup>	+++ The private hospital market has especially in Barcelona strongly consolidated over the years. <sup>642</sup>	++ 40% of hospitals operate in highly concentrated hospital markets. <sup>292</sup>	++ The four largest private hospital groups own ± 80% of the for-profit hospitals. <sup>643</sup>	± The total hospital market is fairly concentrated. <sup>644</sup>

Abbreviations: COVID-19, coronavirus disease 2019; NHS, National Health Service; PE, private equity; ASC, ambulatory surgical centre.

+++ very high ++ high + somewhat high ± neutral - somewhat low -- low --- very low



## 11.5. Conclusion

In various countries, the public sector has turned to the for-profit sector for help, but prices with a viable profit-margin are deemed publicly unacceptable in many countries during this crisis response. We argue and conclude that this virus will, mostly likely, weaken the position of the for-profit hospital sector, just as the Great Depression did in the 1930s.<sup>33</sup> (Although 90 years ago, social healthcare insurance was far more limited in most countries.) For most, their revenue decreases by the day and options to attract capital are limited – private investors are cautious and it can be challenging to acquire additional bank loans. The financial condition of the hospitals prior to the COVID-19 outbreak is an important determinant of how able they are to absorb the external financial shock. One of the lessons that for-profit hospitals and regulators can learn from this crisis is that for-profit hospitals should set aside some reserves for a rainy day because black swans also exist in hospital care. Likewise, we should be wary of hospital business models that have high debt-to-equity ratios.

The disruptive effect of COVID-19 will highlight which for-profit hospitals lack the financial resilience to outlive this crisis. In this perspective we state that (1) some for-profit hospital forms are more vulnerable than others (see Figure 11.1.), and (2) that some healthcare systems are more vulnerable to a fragile for-profit hospital sector (Table 11.2.). We therefore want to make policymakers aware that the pandemic may lead to significant changes both within the for-profit hospital sector and in relation to the broader healthcare system.

The financial fragility of the for-profit hospital sector can set three things in motion:

- (1) Some hospitals might have to close. This requires a governmental response, either by bailing them out, nationalising the hospitals, or coordinating their default.<sup>40</sup>
- (2) PE firms might seize this opportunity to buy out for-profit hospitals, but the desirability of these firms infiltrating the healthcare system is questionable.<sup>645</sup>
- (3) For-profit hospitals that are most likely to default on their payments may be acquired by other hospitals, leading to a more consolidated hospital market. A consolidated hospital market does not lead to lower pricing and may not enhance value.<sup>362</sup>

Policymakers may want to conduct an assessment, like that in Table 11.2., of the likely impact on the wider healthcare system of financial distress in the for-profit hospital sector.

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## Summary

The for-profit sector has grown over the years in numerous healthcare systems. This thesis examines how commercially-oriented healthcare providers – especially those that operate in niche markets – behave and perform compared to the “traditional” (public or in some cases the non-profit) sector. This dissertation uses the term “commercially-oriented” providers to encompass both commercial non-profit organisations and for-profit organisations (see table S.1).

**Table S.1.** Degree of internal commercialisation by type of provider

Degree of commercialisation	Type of organisation	Commercial orientation	Ownership type
Low commercialisation	Publicly-owned, legally dependent	Non-commercially-oriented	Public
	Publicly-owned, but legally independent		
	Private-law providers, but state holds shares		
	Donative private non-profit		Private
	Commercial private non-profit		
For-profit and services are publicly funded			
High commercialisation	For-profit and services are privately funded	Commercially-oriented	
	For-profit equity-owned providers		

The central research question in this dissertation is: *do commercially-oriented healthcare providers (especially those operating in niche markets) contribute to a qualitatively better and financially sustainable healthcare system?* Three sub research questions are used to answer this overarching question: (1) What are the market trends that explain the growth and/or performance of commercially-oriented providers? (2) How do commercially-oriented providers perform regarding costs, quality and accessibility compared to the “traditional” sector? (3) What ethical issues arise from the provision of healthcare services by commercial organisations?

This thesis selected the following care providers: for-profit hospitals, for-profit nursing homes, and commercial non-profit and for-profit independent treatment centres (ITCs). The intramural care providers<sup>ii</sup> in the Dutch healthcare system are an interesting case study because these healthcare providers are incentivised to act as commercial entities, but are simultaneously restricted by a for-profit ban on

ii Intramural care settings are defined as settings where care is provided on site (e.g. nursing home, hospital or independent treatment centre); hence, home-care is referred to as extramural care.



the distribution of dividends. The thesis focuses on the Dutch context but includes international comparisons.

Chapters 2 to 5 are devoted to the first research question: what are the market trends that explain the growth and/or performance of commercially-oriented providers? The results of Chapter 2 show that the costs of capital and access to public service reimbursements are especially important for the growth of the for-profit hospital sector. We found this by means of a country comparison between the US, UK, Germany and the Netherlands, analysing the different countries through a historical lens. By contrast, the financial benefits to physicians of establishing or working for for-profit hospitals have lessened over time and play a smaller role in the sector's growth. Lastly, we found that the growth of the for-profit sector has been largely immune to political shifts.

In Chapter 3, we found that the number of ITCs has grown and that the ITC market has consolidated over time. The ITC market is highly concentrated, more so than the hospital market. In both the ITC sector and the hospital sector, market concentration does not seem to influence the prices negotiated with healthcare insurers.

In Chapter 4, we studied the volume-quality relationship within the ITC sector. Our study shows that the quality in low-volume ITCs is lower than in high-volume ITCs. We measured this based on structure, process and outcome measures. The effect of volume on the outcome (i.e. postoperative infections) is small and the effect decreases when volumes increase. There seems to be significant variety in the quality of care among low-volume providers but less so among high-volume providers.

Chapter 5 gives an insight into the factors that explain the rise of for-profit nursing homes in the Netherlands. We found that the number of nursing homes grew significantly over time. The change in the regulatory framework enabled for-profit nursing homes to grow because they could circumvent the for-profit ban. The slow responsiveness of the non-profit sector to increasing and changing demand left a void for for-profit nursing homes to fill. Furthermore, the for-profit nursing home market is cream-skimming, primarily serving an affluent clientele. Another factor is the ability of for-profit nursing homes to access other forms of capital, and their access to financial capital from private investors such as private equity firms.

Chapters 6, 7 and 8 address the second sub-research question on how commercially-oriented providers perform regarding costs, quality and accessibility in relation to the "traditional" sector? We find in the systematic literature review (Chapter 6) that private (non-profit and for-profit) hospitals do not outperform public hospitals on efficiency or quality of care as the theoretical literature suggests. Most of the evidence in our systematic review suggests that for-profit and non-profit hospitals are equally efficient or less efficient than public hospitals. We find mixed results in the differences in quality of care, but it does seem that for-profit hospitals perform better on observable quality outcome measures. We also find (stark) differences in accessibility. Many, but not all, for-profit hospitals target a more affluent clientele

in Italy, UK, Greece and Spain, who enjoy benefits including shorter waiting times and better amenities. Lastly, it is worth pointing out that our findings suggest that for-profit hospitals are more responsive to financial incentives.

Chapter 7 examines how ITCs perform compared to general hospitals with respect to quality of care and list prices, analysing five elective surgeries (i.e. total hip and knee replacement, anterior cruciate ligament, cataract and carpal tunnel surgeries). The study shows that there is no difference between ITCs and general hospitals with respect to quality or price. Nevertheless, we did find variation in quality of care among both types of providers. Contrary to expectations, we find that healthcare purchasers do not selectively contract ITCs.

Chapter 8 provides a more in-depth analysis of the relative performance of ITCs and general hospitals using cataract care as our case study. The study does not find a clear difference in case-mix. In addition, it concludes that ITCs are more efficient in that they perform a lower number of healthcare activities per surgical claim and charge lower total costs per cataract patient. We did not find significant quality differences in patient outcomes between the two types of providers. However, ITCs do outperform general hospitals on patient satisfaction.

Chapter 9 addresses the third sub-research question on what ethical issues arise from the provision of healthcare services by commercial organisations. This chapter uses an empirical ethics approach to examine whether the market logic can be reconciled with other logics such as professionalism, bureaucracy and the logic of care. (Logics are defined as laws of thought or rationales behind practices.) We find that for-profit nursing homes embrace the logic of the market but reconcile it with the logic of care and the logic of professionalism. The market logic is present because the nursing home revolves around the demands of the resident. On the other hand, the for-profit sector does create an environment (e.g. time) for professionals that enables them to uphold the logic of professionalism. Furthermore, we find that the care relationship should not be treated as one unit. Values differ depending on the layer of the organisation. The way employees of for-profit nursing homes reconcile the different logics differs according to their closeness to the actual care-relationship.

Chapter 10 includes the discussion of this dissertation. This chapter first reviews the main findings and embeds them in the body of empirical literature; it then outlines the strengths and limitations of the dissertation; and, finally, it provides recommendations for future research and policy. The discussion arrives at several conclusions in answer to the overall research question of whether commercially-oriented healthcare providers (especially those operating in niche markets) contribute to a qualitatively better and financially sustainable healthcare system. The opportunities of the commercial healthcare sector are its access to (large) capital funds and its better responsiveness to demand, leading to better client satisfaction. On the flip side, commercially-oriented niche healthcare providers open the healthcare system to different risks (including cherry-picking and increased over-utilisation). In order to mitigate these risks, policymakers may want to regulate the commercially-

oriented healthcare sector by monitoring them or imposing rules that target adverse and rent-seeking behaviour. Commercially-oriented niche sector may have positive spill-over effects on traditional providers, however regulating and monitoring the commercially-oriented niche healthcare providers is costly and in some instances the gains are limited, perhaps especially for highly commercialised providers.

The epilogue in Chapter 11 is a perspective article which evaluates the impact of the coronavirus disease 2019 (COVID-19) on the for-profit hospital sector. It argues that for-profit hospitals are particularly vulnerable to financial distress as a result of the COVID-19 pandemic because the pandemic led to the suspension of non-urgent elective surgery and to changes in the allocation and compensation of care. The epilogue argues further that for-profit hospitals will be affected differently because their financial fragility differs depending on several contextual and organisational factors (including care portfolio, size, and whether they are private equity-owned). Policymakers should be aware that COVID-19 could therefore have a disruptive effect on the composition of the hospital market. The financial fragility of the for-profit hospital sector could cause: (i) some hospitals to close, which in some cases requires a government response; (ii) private-equity firms to seize the opportunity to buy out for-profit hospitals, which may be an undesirable development from a public policy perspective; (iii) a more consolidated hospital market because some for-profit hospitals are more likely to default on their payments and could, therefore, be acquired by other hospital chains.

## Samenvatting

Het aantal commerciële zorgaanbieders is in de laatste decennia in veel zorgsystemen sterk gestegen. Dit proefschrift analyseert hoe de markt van commerciële zorgaanbieders zich heeft ontwikkeld en hoe commerciële zorgaanbieders presteren ten opzichte van “traditionele” (publieke en in sommige gevallen non-profit) aanbieders. Onder “commerciële zorgaanbieders” wordt hier verstaan zowel aanbieders die winst mogen uitkeren naar derden als commerciële non-profit aanbieders (zie tabel S.1).

**Table S.1.** Mate van commercialisatie uitgesplitst naar type aanbieder

Mate van commercialisatie	Type zorgaanbieder	Commerciële oriëntatie	Eigendom structuur
Lage mate van commercialisatie	Publiek eigendom en juridisch niet-zelfstandig	Niet commercieel	Publiek
	Publiek eigendom en juridisch zelfstandig		
	Organisatie valt onder privaat recht, maar overheid bezit de aandelen.	Commercieel	Privaat
	Non-profit organisaties gefinancierd o.b.v. donaties		
	Non-profitorganisaties gefinancierd o.b.v. aantal diensten		
	For-profit organisatie gefinancierd o.b.v. publieke middelen		
For-profit organisatie gefinancierd o.b.v. private middelen			
Hoge mate van commercialisatie	For-profit organisatie in eigendom van een equity partij		

De centrale onderzoeksvraag in dit proefschrift is of commerciële zorgaanbieders (in het bijzonder niche-aanbieders) bijdragen aan een kwalitatief beter en financieel houdbaar zorgsysteem. Om deze hoofdvraag te beantwoorden, stellen we drie deelvragen:

- (1) Welke markttrends en ontwikkelingen in de zorg verklaren de groei en de relatieve prestaties van commerciële zorgaanbieders t.o.v. “traditionele” aanbieders?
- (2) Hoe presteren commerciële zorgaanbieders in termen van kosten, kwaliteit en toegankelijkheid in vergelijking tot de “traditionele” sector?
- (3) Welke ethische afwegingen brengt commercieel zorgaanbod met zich mee?

De intramurale<sup>iii</sup> zorgaanbieders in Nederland lenen zich voor een interessante case studie aangezien gereguleerde competitie in de zorg commercieel gedrag bij de zorgaanbieders stimuleert, maar tegelijkertijd verbod op winstuitkering bij deze instellingen begrenst om zich als “volmaakte” commerciële entiteiten te gedragen. Dit proefschrift focust op de volgende zorgaanbieders: for-profit<sup>iv</sup> ziekenhuizen, particuliere verpleeghuizen en commerciële non-profit en for-profit zelfstandige behandelcentra (ZBC's). Dit proefschrift behandelt naast het Nederlandse zorgsysteem ook inzichten uit andere landen middels landenvergelijkingsstudies.

Hoofdstukken 2 tot 5 richten zich op de eerste onderzoeksvraag: *welke markttrends en ontwikkelingen in de zorg verklaren de groei en de relatieve prestaties van commerciële zorgaanbieders t.o.v. “traditionele” aanbieders?* Hoofdstuk 2 is een landenvergelijkingsstudie die is gefocust op de Verenigde Staten, het Verenigd Koninkrijk, Duitsland en Nederland. De resultaten uit dit hoofdstuk laten zien dat kapitaalskosten en toegang tot publieke vergoedingen van grote invloed zijn op de groei van de for-profit ziekenhuissector. De financiële voordelen voor artsen om een for-profit ziekenhuis op te zetten of om voor een for-profit ziekenhuis te werken, zijn over de jaren afgenomen. Dit lijkt dus niet de recentelijke groei van de sector in sommige zorgsystemen te kunnen verklaren. Opmerkelijk is dat de groei van de for-profit sector weinig tot niet beïnvloed is geweest door de wisselingen in de politiek, dus of er een rechts of links georiënteerde regering aan de macht was.

De resultaten in hoofdstuk 3 laten zien dat sinds 2017 het aantal ZBC's sterk is toegenomen. Bovendien is de ZBC-market sterk geconcentreerd. De ZBC-markt had tussen 2007 en 2015 een hogere marktconcentratie dan de ziekenhuissector. Na een korte periode van stagnatie, is ongeveer sinds 2012 zowel de ZBC- als ziekenhuismarkt langzaam geconsolideerd. Overigens is er geen tot een zwak verband tussen marktaandeel en prijs van een behandeling in de ZBC-sector gevonden.

Hoofdstuk 4 behandelt de relatie tussen volume en kwaliteit in de ZBC-sector. De resultaten van deze studie geven weer dat de kwaliteit in ZBC's met een laag volume – gemeten in het aantal behandelingen – lager is dan in ZBC's die meer behandelingen per locatie uitvoeren. We hebben kwaliteit gemeten aan de hand van structuur, proces en uitkomstindicatoren. Volume heeft overigens maar een beperkte invloed op de uitkomstenindicatoren (gemeten in percentage postoperatieve infecties) en het effect neemt af als het volume toeneemt.

Hoofdstuk 5 brengt de particuliere verpleeghuissector in Nederland in kaart en analyseert de groeifactoren. In de afgelopen jaren is het aantal particuliere

iii Intramuraal betekent dat zorg binnen de muren van een zorginstelling wordt geleverd (bijv. ziekenhuis of verpleeghuis). Extramuraal betekent dat de zorg buiten de muren van een zorginstelling wordt geleverd (bijv. thuiszorg).

iv Deze Nederlandse samenvatting maakt bewust gebruik van het bijvoeglijk naamwoord “for-profit” in plaats van “winst-georiënteerd” of “met winstoogmerk”, omdat dit verwarrend kan zijn aangezien non-profit (stichtingen) ook winst-georiënteerd kunnen zijn.

verpleeghuizen sterk toegenomen. De hervormingen van de langdurige zorg in 2015 was voor de particuliere verpleeghuissector een gunstige ontwikkeling doordat de opsplitsing van zorg en wonen in de businessmodel van particuliere verpleeghuizen past; zij financieren hun zorg namelijk middels extramurale zorgpakketten (Volledig Pakket Thuis, Modulair Pakket Thuis en Persoonsgebonden Budget) en rekenen de wooncomponent particulier af. Deze opzet stelt particuliere verpleeghuizen in staat om het verbod op winstuitkering te omzeilen. De particuliere verpleeghuissector draagt zelf als reden aan voor de sterke toename in het aantal particuliere verpleeghuizen dat de traditionele non-profit verpleeghuissector niet adequaat heeft gereageerd op de veranderende behoeftes en wensen van cliënten. De particuliere verpleeghuissector heeft hier wel op ingespeeld en daarbij geprobeerd een alternatief aan te bieden. De particuliere verpleeghuissector heeft zich daarnaast gericht op cliënten uit een hogere sociaaleconomische klasse. Een andere belangrijke factor is dat particuliere verpleeghuizen de mogelijkheid hebben om privaat kapitaal (bijv. private equity-fondsen) aan te trekken. Privaat kapitaal kan relatief flexibel geld vrijmaken voor grote investeringen. Dit in tegenstelling tot de traditionele non-profit verpleeghuizen voor wie het veel lastiger is om externe private investeerders aan te trekken.

Hoofdstukken 6, 7 en 8 adresseren de tweede deelvraag: *Hoe presteren commerciële zorgaanbieders in termen van kosten, kwaliteit en toegankelijkheid in vergelijking tot de "traditionele" sector?* De systematische literatuurstudie in hoofdstuk 6 concludeert ten eerste dat private (for-profit en non-profit) ziekenhuizen even efficiënt of minder efficiënt zijn dan publieke ziekenhuizen (efficiëntie kan zich doorvertalen naar kosten). Deze bevinding druist in tegen de theoretische gedachte dat private partijen efficiënter zijn dan publieke instellingen. Ten tweede geeft deze literatuurstudie gemengde resultaten voor kwaliteit van zorg weer. Met andere woorden, de studies die kwaliteitsverschillen tussen private en publieke ziekenhuizen analyseren vinden verschillende resultaten. For-profit ziekenhuizen lijken wel beter te presenteren op eenvoudig meetbare kwaliteitsindicatoren (bijv. patiëntervaringen). De literatuurstudie laat wel eenduidige verschillen zien met betrekking tot de toegankelijkheid. In Italië, het Verenigd Koninkrijk, Griekenland en Spanje richten de meeste for-profit ziekenhuizen zich op cliënten uit een hogere sociaaleconomische klasse met bijv. een private zorgverzekering. Deze cliënten profiteren in veel gevallen van kortere wachttijden en betere voorzieningen. Ten slotte laat deze literatuurstudie zien dat for-profit ziekenhuizen ten opzichte van non-profit en publieke ziekenhuizen responsiever lijken te zijn voor financiële prikkels.

Hoofdstuk 7 analyseert hoe ZBC's presteren ten opzichte van algemene ziekenhuizen op basis van kwaliteit van zorg en passantentarieven voor vijf electieve chirurgische ingrepen (heupprothese, knieprothese, operatieve ingreep ter behandeling van het carpaletunnelsyndroom, cataractoperatie en kruisbandreconstructies). Deze studie laat zien dat er geen kwaliteits- of prijsverschillen lijken te bestaan tussen ZBC's en algemene ziekenhuizen. We vinden daarnaast geen verband tussen selectieve

zorginkoop door zorgverzekeraars op basis van kwaliteitsindicatoren in de ZBC-sector.

Hoofdstuk 8 is een verdiepende studie over de relatieve prestatie van ZBC's ten opzichte van algemene ziekenhuizen op basis van declaratiedata waarbij cataractzorg als casestudie is genomen. Deze studie vindt maar een klein verschil in casemix (bijv. leeftijd of comorbiditeit) tussen beide type zorginstellingen. De resultaten uit deze studie laten daarnaast zien dat ZBC's efficiënter opereren en lagere kosten in rekening brengen dan algemene ziekenhuizen. Efficiëntie werd gemeten aan de hand van het aantal zorgactiviteiten dat per invasief zorgproduct is gedeclareerd. Het verschil in kwaliteit van zorg is echter marginaal tussen de ZBC's en algemene ziekenhuizen. Alleen patiënttevredenheid lijkt significant hoger te zijn bij ZBC's ten opzichte van algemene ziekenhuizen.

Hoofdstuk 9 probeert antwoord te geven op de derde deelvraag: *Welke ethische afwegingen brengt commercieel zorgaanbod met zich mee?* Deze studie analyseert hoe in de particuliere verpleeghuissector de invloed van de markt verenigd wordt met hun zorgtaak. Om dit middels een empirisch-ethisch aanpak te analyseren worden vier logica's gedefinieerd: de markt logica, de bureaucratische logica, de professionele logica en de logica van het zorgen. Deze studie merkt op dat de logica van de markt invloedrijk is in de particuliere verpleeghuissector, waarbij de sector dit lijkt te kunnen verenigen met de logica van het zorgen en de professionele logica. De markt logica is dominant omdat de particuliere verpleeghuissector de wensen van de cliënt voorop stelt. Aan de andere kant lijkt de particuliere sector ook een omgeving voor de professional te creëren om een professionele logica te ontwikkelen (bijv. door meer tijd te hebben voor de bewoners). Bovendien vinden we in dit onderzoek dat de waarden kunnen verschillen tussen de verschillende lagen van de organisatie: de zorgverleners op de werkvloer stellen de logica van het zorgen meer voorop ten opzichte van bijv. een verpleeghuismanager/directeur die meer de marktlogica aanhangt.

Hoofdstuk 10 bespreekt de bevindingen en gaat na welke discussiepunten dit oplevert. Ten eerste worden de bevindingen uit dit proefschrift tegen het licht gehouden door deze te vergelijken met wat bekend is uit de internationale literatuur. Ten tweede bediscussieert dit hoofdstuk de sterke en zwakke punten van het onderzoek in dit proefschrift. Ten derde stelt dit hoofdstuk beleidsaanbevelingen voor en doet het aanbevelingen voor toekomstig onderzoek. Dit hoofdstuk geeft ten slotte ook een antwoord op de onderzoeksvraag of commerciële zorgaanbieders (in het bijzonder de nicheaanbieders) bijdragen aan een kwalitatief beter en financieel houdbaar zorgsysteem. De conclusie is dat commerciële zorgaanbieders kansen bieden voor de houdbaarheid van ons zorgsysteem, in zoverre dat zij toegang hebben tot privaat kapitaal en responsiever zijn op de (veranderende) vraag van de zorgbehoevenden ten opzichte van traditionele aanbieders, wat weer kan leiden tot hogere cliënttevredenheid. Commerciële zorgaanbieders kunnen bovendien positieve spillover-effecten hebben op de traditionele sector door hen scherp en responsief te



houden voor externe ontwikkelingen. De keerzijde van commerciële zorgaanbieders is dat zij risico's met zich mee brengen. Deze risico's zijn o.a. dat commerciële aanbieders de krenten uit de pap kunnen halen en dat zij meer geneigd zijn om on gepaste zorg te leveren. Om deze risico's te minimaliseren zouden beleidsmakers deze sector specifiek moeten reguleren op gedrag inzake van ondoorgrondelijke financiële organisatiestructuren en op het minimaliseren van excessieve winsten met kortetermijnperspectief. Het reguleren en monitoren van de commerciële sector kan gepaard gaan met hoge kosten. In sommige gevallen zijn de voordelen beperkt, in het bijzonder voor zorgaanbieders die zeer commercieel zijn ingesteld (bijv. zorgaanbieders in eigendom van private-equitypartijen).

De epiloog in hoofdstuk 11 is een betoog over de mogelijke impact van het coronavirus 2019 (COVID-19) op de for-profit ziekenhuissector. Dit artikel beargumenteert dat for-profit ziekenhuizen in het bijzonder kwetsbaar zijn om in financiële problemen te komen door de COVID-19 pandemie. De pandemie heeft geleid tot uitstel van electieve zorg – zorg die een groot aantal for-profit ziekenhuizen financieel gezond houdt – en in aanpassingen in de verdeling en compensatie van zorg. De kwetsbaarheid van for-profit ziekenhuizen hangt volgens dit betoog af van de context (zorgsysteem en historisch verloop) en het type organisatie (o.a. de zorgportfolio, grootte en of de instelling in eigendom is van een private-equitypartij). Waakzaamheid wordt verwacht van beleidsmakers, aangezien COVID-19 een disruptief effect kan hebben op de samenstelling van de ziekenhuismarkt. De kwetsbaarheid van de for-profit ziekenhuissector in deze pandemie kan namelijk het tot gevolg hebben dat:

- sommige ziekenhuizen hun deuren moeten sluiten terwijl dit mogelijk niet gewenst is (bijv. snelle toegang tot spoedeisende hulp in een regio);
- private-equitypartijen deze kans kunnen aangrijpen om for-profit ziekenhuizen in financiële moeilijkheden op te kopen. Dit is van belang omdat het sterk de vraag is of private-equity in de ziekenhuissector een wenselijke ontwikkeling is voor de houdbaarheid van het zorgsysteem;
- een hogere marktconcentratie in de ziekenhuissector ontstaat doordat (grote) ziekenhuisketens for-profit ziekenhuizen makkelijker kunnen overnemen. Een hogere marktconcentratie kan negatieve gevolgen hebben voor bijv. de prijs en kwaliteit van zorg.



## Authors contributions per chapter

Abbreviations author and co-authors	
F.M. Kruse	FK
P.P.T. Jeurissen	PJ
R. Busse	RB
D. Himmelstein	DH
E. Mossialos	EM
S. Woolhandler	SW
E. Spiering	ES
E. Adang	EA
M.C. van Nieuw Amerongen	RA
I. Borghans	IB
A.S. Groenewoud	SG
A. Bos	AB
N.W. Stadhouders	NS
A.D.M. Tulp	AT
F. Atsma	FA
O.P. van der Galiën	OG
W.M.R. Ligtenberg	WL
A.J.M. Oerlemans	AO

### Chapter 1 and 10

FK was responsible for the design and writing of these chapters. The doctoral thesis supervisors and co-supervisors provided feedback.

### Chapter 2

PJ initiated the research project. FK and PJ developed the study design and were responsible for the writing. FK collected the quantitative data and carried out the analysis. RB, DH, EM and SW contributed to the drafting and revising of the manuscript, specifically looking at their own respective country descriptions.

### Chapter 3

FK initiated the research project. FK, PJ, EA and ES were responsible for the study design. ES cleaned the data. FK and ES analysed the data. FK and ES wrote the manuscript. EA and PJ supervised the study and contributed to revising the manuscript.

### Chapter 4

PJ and FK initiated the study. FK, RA, SG, IB, EA were responsible for the study design. FK was responsible for the data analysis and writing. RA provided the data

and assisted with the data interpretation. EA, SG and PJ supervised the study. RA, IB, SG, EA and PJ contributed to revising the manuscript.

### **Chapter 5**

FK and AB initiated the study and designed the study with help from PJ. FK and AB collected the quantitative and qualitative data. FK analysed the quantitative data and wrote about those findings. FK and AB analysed the qualitative data, and AB wrote about those findings. FK and AB jointly wrote the manuscript. PJ contributed to revising the manuscript.

### **Chapter 6**

Eurofound initiated the study. FK developed the study design together with Eurofound and, at a later stage, with PJ and NS. The selection of articles, the extraction of data, and the appraisal was a joint effort by FK and NS. FK and NS wrote the manuscript together. EA, SG and PJ supervised the study and contributed to revising the manuscript.

### **Chapter 7**

FK initiated the study. FK, AT, NS and PJ developed the research design. AT collected the data. FK and AT were responsible for data cleaning, data analysis and writing. PJ and NS supervised the study and contributed to revising the manuscript.

### **Chapter 8**

PJ and SG initiated this study. PJ, SG and FK designed the study. FK was responsible for the data cleaning and analysis. FA and OG provided technical data support and statistical supervision. FK wrote the manuscript. PJ, SG, FA, OG and EA supervised the study and contributed to revising the manuscript.

### **Chapter 9**

SG and PJ initiated this study. FK, SG and PJ designed the study. FK arranged the case studies and interviews. FK and WL visited the nursing homes and collected the qualitative data. FK and WL also analysed the data together and jointly designed the theoretical framework. FK was responsible for the writing. PJ, SG and AO supervised the study and contributed to revising the manuscript.

### **Epilogue**

FK initiated this perspective. FK was responsible for the writing with assistance from PJ. PJ contributed to the drafting of the manuscript.

## Data management

This study has followed the Netherlands Code of Conduct for Research Integrity which is similar to the European Code of Conduct for Research Integrity. The empirical studies within this dissertation have been exempted from the medical ethical committee, which means that it does not fall under the scope of the Dutch Medical Research Involving Human Subjects Acts (WMO).

The organisations that issued the quantitative data gave consent for us to publish the findings before publication of the article. The quantitative data used in this thesis are:

Type of data	Issuing organisation	Level	Anonymity <sup>a</sup>	Accessibility	Name dataset
Patient satisfaction data	Dutch Patients Association	Patient /client	Anonymous	Semi-public data (permission required from issuing organisation)	Zorgkaartnederland.nl
Insurer claims	Achmea	Patient level	Anonymous	Restricted data	
Financial reports	CIBG	Provider		Public data	DigiMV/Jaarverantwoording zorg
Contracted prices	CZ	Provider		Public data	CZ tarieventool
Risk indicators	Dutch Health and Youth Care Inspectorate	Provider		Public data	Risico/Kwaliteits-indicatoren particuliere klinieken
Quality measures	Dutch National Healthcare Institute	Provider		Public data	Transparantiekalender Medisch Specialistische Zorg
Quality measures	Vektis	Provider		Restricted data	Zorgprisma
Financial data and company information	Amadeus – Bureau van Dijk	Provider		Restricted data (paywall)	Orbis

Type of data	Issuing organisation	Level	Anonymity <sup>a</sup>	Accessibility	Name dataset
Socioeconomic indicators	The Netherlands Institute for Social Research	Regional – four-digit postal codes		Public data	Sociaal-Economische Status per postcodegebied (statusscores) SCP
Socioeconomic indicators	Statistics Netherlands	Regional – four-digit postal codes		Public data	Waarde onroerende zaken van woningen en niet-woningen

a. Anonymous means that the data could not be linked to specific individuals

With respect to the qualitative studies, we received informed consent from all respondents and ensured their privacy by making the transcripts anonymous. Any identifiable information has been removed from the transcripts. When informed consent is obtained and respondents have been well informed about the study, according to Dutch law, it is permissible to use the data and to publish the finding.

With regard to the FAIR principles (Findable, Accessible, Interoperable, Reusable), the data that was used for this dissertation was mainly public data (see table above and column 'Accessibility' and 'Name dataset'). The cleaned public datasets and codes used for the research reported in this dissertation are available from the corresponding author on request. Access to the restricted data that we used for our research requires permission from the institution that holds the data.

# Portfolio

<b>Name PhD candidate: F.M. Kruse</b>	<b>PhD period: 01-04-2016 – 01-08-2020</b>
<b>Department: IQ healthcare</b>	<b>Promotor(s): Prof. P.P.T Jeurissen, Prof. J. Skinner</b>
<b>Graduate School: Radboud Institute for Health Sciences</b>	<b>Co-promotor(s): Dr. A.S. Groenewoud &amp; Dr. A. Adang</b>

	Year(s)	ECTS
<b>TRAINING ACTIVITIES</b>		
<b>a) Courses &amp; Workshops</b>		
Introduction day RIHS	2016	0.25
Radboud Institute for Health Sciences Introduction course for PhD candidates	2016	1.5
Management voor Promovendi	2016	1.5
Summer School in Health Economics at Erasmus Summer School	2016	0.7
Scientific Integrity course	2017	0.5
Scientific Writing course	2018	3
Introductie Nijmeegse curricula	2018	0.2
Basiskwalificatie Onderwijs (BKO) traject	2018	2
<b>b) Seminars &amp; lectures</b>		
<b>Radboud Grant Grounds</b>	2016-2020	0.5
Peter Bennemeer (Benhoven Ziekenhuis)- Van Dromen naar doen		
Kim Putters (Sociaal Cultureel Planbureau)		
Maarten Klomp (directeur van zorggroep De Ondernemende Huisarts)		
Loek Winter (Het einde van het ziekenhuis)		
Sjaak Wijma (Pakketbeheer, juist in de spreekkamer)		
<b>Radboud Research Rounds</b>	2016 - 2017	0.2
Trisha Greenhalgh: 'Real evidence based medicine and how to achieve it'		
Dr. de Bruin & Prof. Nijhuis-van der Sanden 'Bringing behavioural scientists in'		
Seminar Prof. dr. Jon Skinner	2016	0.1
Winter Academie Beleid en Betaalbaarheid. Final lecture	2017	0.1
Colloquium IGJ – Monitor zorggerelateerde schade en ziekenhuisindicator heropname	2017	0.1
<b>c) Symposia &amp; congresses</b>		
3e Celsus-Talma invitational conference: 'Steeds meer zorg, een betaalbare oplossing?'	2016	0.25

KVS economencafe: 'Tien jaar zorgverzekeringwet: waar staan we en hoe verder?'	2016	0.1
'Our Future Health' - Conference Nijmegen	2016	0.25
5e conferentie IQ healthcare: 'Onderweg naar persoonsgerichte zorg. Beter voor de patiënt, goed voor de samenleving'	2016	0.25
PhD retreat (incl. poster/talk)	2016	0.75
Eurofound Workshop to discuss the report 'the role of the private sector in delivering health care services'	2016	0.1
Mini Invitational Conference 'Ethiek van de betaalbaarheid van zorg – Burgers betrekken bij vaststellen Verzekerde Pakket'	2016	0.1
Talma/Celsus – conferentie 'zorginkoop en –verkoop: het spel en de speler'	2017	0.25
EuHEA PhD conference in Lausanne (oral presentation)	2017	1.0
Conference 'Private Hospitals in Europe: Supporting Sustainable Health Systems – Brussels'	2017	0.1
Eurofound - Access and Quality of Public Services a debate on improving quality of life	2017	0.1
Afsluitend Celsuscongres en presentatie van de Celsus boekenreeks 'Vijf jaar Celsus, academie voor betaalbare zorg'	2018	0.1
Radboud New Frontiers - Day 1: Big data, better healthcare? Radboud Frontiers - Day 2: Beter zorg, netwerkzorg	2018	0.5
EuhEA 2018 - Maastricht (oral presentation)	2018	1.0
International Conference on Clinical Ethics Consultation (oral presentation)	2019	1.0
Congres Kleinschalig Zorgen (oral presentation)	2019	0.25
European health policy group (EHPG) autumn 2019 (Discussant paper)	2019	0.25
Independent Healthcare Provider Network (IHPN) Annual Summit 2019	2019	0.1
'Leading Person-Centred and Coordinated Care' A lecture by Andrea Sutcliffe, Chief Executive and Registrar, Nursing and Midwifery Council. University of Birmingham Centre for Health and Social Care	2019	0.1
'Opportunities and barriers for using care home data to inform the response to COVID-19' - LSE webinar	2020	0.1
EuHEA web-based conference session, panel session COVID-19	2020	0.1
Seminar LTCcovid Ownership Structures (virtual oral presentation)	2020	0.25
Innovation and Inclusive Growth: COVID-19 as a window of opportunity - LSE webinar	2020	0.1

European health policy group (EHPG) 2020 - COVID-19: impacts on health and health care systems in Europe (Discussant paper)	2020	0.25
COVID-19 and Nursing Homes: LSE Department of Health Policy seminar	2020	0.1
<b>d) Other</b>		
Coordinator of the Journal club 'Duurzaam organiseren' (meets 4 times a year)	2019-2020	0.5
Review scientific publications 3x	2019-2020	0.3
<b>TEACHING ACTIVITIES</b>		
<b>e) Lecturing</b>		
Coordinator of the BMS Policy making, health systems and public management in health care (BMS04) – 3x	2017-2020	1.5
Workshop lecturer - Evidence Based Practice – 2x	2017-2019	0.5
2 guest lectures 'Introduction & Healthcare systems' For the Minor 'Sustainable healthcare improvement: principles and practice' 3ejaars GNK/BMW and SMI master 'How health systems work'	2019-2020	0.2
<b>f) Supervision of internships / other</b>		
Supervision of internship (master thesis research project) 1x		1.75
Supervision of internship (research project) 2x		3.5
Supervision of internship (literature study) 2x		0.5
<b>TOTAL</b>		<b>26,85</b>

## Acknowledgments

I can finally put in writing my gratitude to all who supported and advised me during this PhD journey. I could have never done this on my own, and I am grateful for the support I have received throughout. I'm now paralysed by the fear that I either will forget to mention some of those that deserve an acknowledgment or that I will not find the right words to give some people the credit they deserve. I apologise in advance. Another fear I have is that I won't be able to express how difficult and challenging some moments were. If I read the acknowledgments of other dissertations, some people seize this opportunity to air their frustrations about all the hardship they had to endure. To be honest, I do not have this urge. Of course, it has not always been pleasant – the bureaucracy in particular does not suit me well – but generally I have enjoyed the ride. When you look at the size of this book, you may wonder, what happened? Just to assure you, I wonder that too.

First of all, I want to thank **Patrick Jeurissen** for giving me this great opportunity and for believing in me. It was, and still is, a great pleasure to work with him. I'm grateful that we met in Brussels for the Eurofound workshop, otherwise I would never have been here. So hereby I also thank Eurofound, and especially **Daniel Molinuevo**. I also want to thank my co-supervisors, **Stef Groenewoud** and **Eddy Adang**. They have helped me become a better researcher. I also want to thank **Prof. Jonathan Skinner**. I'm honoured to have received his advice.

I want to thank my colleagues at IQ healthcare for their support and for creating a warm and friendly working environment. I want to give a special thanks to **Pleuntje Versteegen** and **Femke Atsma**. Special thanks as well to the Ethics group for letting me infiltrate their meetings and for their comments on my ethics research. I especially want to thank **Anke Oerlemans** in this regard. I want to thank all my colleagues from Celsus Academie/Academie voor Betaalbaarheid van Zorg for their intellectual support but also for the fun and nonsense (i.e. **Wieteke van Dijk**, **Joost Wammes**, **Floris Vlaanderen**, **Yvonne de Man**, **Simone van Dulmen**, **Marit Tanke**, **Philip van der Wees**, **Daniëlle Kroon**, **Erik Wackers**, **Angelique Schlieff**, **Toine Remers**, **Karel-Peter Companje**, **Stefan Auener** and **Jacqueline Drost**.) Special thanks to my paranimfen, **Inger Abma** and **Niek Stadhouders**, who both helped me a great deal during this PhD process (e.g. checking my writing and co-authoring articles with me).

I would have never been able to deliver this thesis and some of the chapters without the enthusiasm and energy of the interns I have worked with. My special gratitude goes to **Else Spierings**, **Anouk Tulp** and **Wieke Ligtenberg**.

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To my family, I owe a big, big, thanks. I want to thank my cousin, **Anke Schaap**, for designing the cover. I'm grateful that this project has brought us together (again), and brought back memories of our grandma, **Antje Bosman**. Grandma has always been an inspiration to me, an incredible example of a strong, independent woman. She left us in 2018 but is still part of this creation. Thanks too to my paternal grandparents, **Frits and Martha Kruse**, for their support. I would also like to thank **Wendy and Alastair Crawford**, with whom I lived during lockdown while I finished writing my thesis, and who have been so kind and caring. I want to thank **Henk van Arkel** for being such an amazing "bonus dad", and for always helping me to think outside the box. I want to thank my dad, **Jan Kruse**, too for his great support and intellectual stimulation. I want to thank my wonderful sisters, **Carlot and Minke**, for putting up with me. (I know I'm a pain sometimes, especially when I'm busy and abroad.) Finally, enormous thanks to my mom, **Marjolijn Blankestijn**. It's only because of her persistence and unstoppable faith that I was able to start, let alone finish, my doctorate. This may have even outlived her wildest dreams. I owe so much to her.

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## Curriculum vitae

### Florien Margareth Kruse

E-mail: [florienkruse@gmail.com](mailto:florienkruse@gmail.com)  
Telephone number: +31(0)615261275

### Professional experience

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2016- present *Radboud University Medical Centre* (IQ healthcare), PhD candidate, Nijmegen, The Netherlands

- The aim of this PhD is to analyse the added value of commercially-oriented healthcare providers. We look at indicators such as quality of care, costs, efficiency and accessibility.

2019 *London School of Economics and Political Science*, Visiting Scholar, London, United Kingdom

2015- 2016 *European Foundation*, Research Trainee, Dublin, Ireland

- Main task was to contribute to the report on the role of the private sector in delivering hospital services in the European Union

2015 *Max Planck Institute for Demographic Research*, Research Intern, Rostock, Germany

- The end product of just a three month internship was an internal research paper and an empirical peer-reviewed research paper on the stagnation and/or transformation of attitudes towards father's involvement.

2015 *SEEK Development Consultancy*, Short-Term External Consultant, Berlin, Germany

- Collaborated on a larger research project that carried out a meta-analysis on the relationship between maternal education and child mortality

2014-2015 *Hertie School of Governance*, Research/Teaching Assistant- Sociology, Berlin, Germany

- Supporting Prof. Kreyenfeld with her responsibilities. I am co-author of a script that covers all the content of the Statistics II course.

- 2014      *PAHO/WHO*, Research Intern, Paramaribo, Suriname
- Finalised a report that provided a descriptive overview of the health needs of older persons, in a life course perspective in collaboration with the Planning Division section Homecare and Elderly care of the Ministry of Health on a National Policy on Health of Older Persons.
- 2012 -2013      *Oxfam Novib*, Internship at the headquarters of the marketing and fundraising department, The Hague, The Netherlands
- Advised in a new way of fundraising, crowd and social network fundraising. In addition, I coordinated the communication with donors.

## Education

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- 2013-2015      *Hertie School of Governance*, Master Public Policy, Berlin, Germany
- Concentration Policy Analysis/Evaluation. Master Thesis topic: Preferences for “Earner Models” in Germany and the Netherlands: Which role does institutional context have?
- 2009-2013      *Vrije Universiteit*, Bachelor of Science in Public Administration and Organization Science, Amsterdam, the Netherlands
- Bachelor Thesis: research on effective and efficient implementation of protocols and policies without jeopardising safety and customisation of patient service.
- 2012-2013      *University of Utrecht*, Extra Curriculum Minor: Law & Society, Utrecht, The Netherlands
- Subjects: Human Rights, Law & Society and Foundations of Dutch Law.
- 2011      *Witwatersrand University*, Exchange semester, Johannesburg, South Africa
- Subjects: Feminist Theory and Politics, Demography and Development, International Organisations

## Leadership

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- 2016-2019      *Board member Women in Leadership initiative (WLi)* facilitated by the Hertie Foundation
- Organising events and workshops on gender-related issues
  - Maintaining the network of 100 international members of the network

- 2013-2014 *Hertie School of Governance, Berlin, Germany*
- Elected Student Representative MPP class of 2015 (member of multiple recruitment committees). Founder Feminism and Gender Club (student initiative)
- 2012-2013 *Plan International, The Hague, Netherlands*
- Volunteer member 'Girls Rights Watch'

## Skills

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Language: Dutch (mother tongue), English (full professional proficiency), German (limited working proficiency), Spanish (elementary proficiency)

Computer: Microsoft Office (i.e. Outlook, Excel, Word, PowerPoint), Statistical software (i.e. SPSS, STATA, SAS & R)

## Publication list

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### Peer reviewed

Jeurissen, P.P.T., Kruse, F.M., Busse, R., Himmelstein, D.U., Mossialos, E. and S. Woolhandler (2021). For-Profit Hospitals Have Thrived Because of Generous Public Reimbursement Schemes, Not Greater Efficiency: A Multi-Country Case Study. *International Journal of Health Services*, 51(1), 67-89

Kruse F. M. and P.P.T. Jeurissen (2020). For-profit hospitals out of business? Financial sustainability during the COVID-19 epidemic emergency response. *International Journal of Health Policy and Management*, 9(10), 423-428

Kruse, F. M., Ligtenberg, W.M., Oerlemans, A.J., Groenewoud, S., and P.P.T. Jeurissen (2020). How the logics of the market, bureaucracy, professionalism and care are reconciled in practice: an empirical ethics approach. *BMC Health Services Research*, 20(1), 1-16.

Bos, A., Kruse, F.M and P.P.T. Jeurissen (2020). For-Profit Nursing Homes in the Netherlands: What Factors Explain Their Rise? *International Journal of Health Services*, 50(4), 431-443

Tulp, A.D.M., Kruse, F.M., Stadhouders, N.W. and P.P.T. Jeurissen (2020). Independent treatment centres are not a guarantee for high quality and low healthcare prices in the Netherlands—a study of 5 elective surgeries. *International Journal of Health Policy and Management*, 9(9), 380-389

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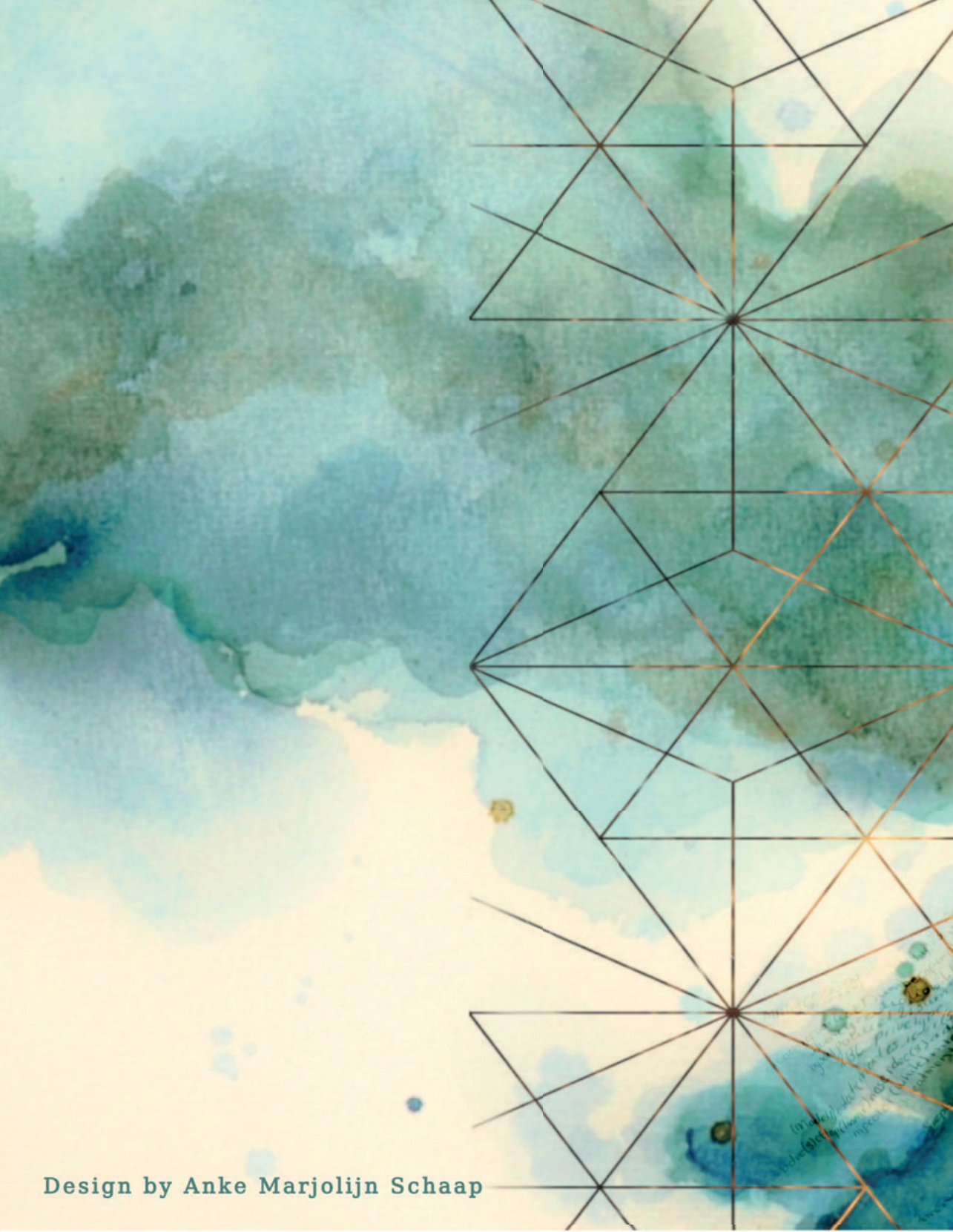
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