DESIREE ANKERSMIT
BUSINESS ADMINISTRATION
MASTER THESIS

WLZ TARIFF

DETERMINATION

DETERMINING A REASONABLE PRICE

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UNIVERSITY OF TWENTE
MENZIS

WLZ TARIFF DETERMINATION
Determining a substantiated price

Master thesis

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Preface

Before you lies the thesis “Wlz tariff determination: determining a reasonable price”. This thesis forms the finalization of the master Business Administration at the University of Twente. The project was executed from December 2020 till July 2021 in the analysis team of Menzis. In this research an initial cost price model is formulated, executed and assessed through formal interviews with industry experts. It aims to form the base for future iterations and model development.

This assignment started off with a deceptively clear question, as to what constitutes a reasonable Wlz tariff. Coming from a more technical background in production environments, the sheer complexity of that question was initially lost on me. I have come to understand during the project, that even after the completion of this thesis, there are still so many complex aspects and subjects to explore in the Wlz, that I have barely scratched the surface by exploring the subject of tariff determination. I am therefore grateful that I have been given the opportunity by Menzis, to continue to explore the Wlz as a data analyst and can continue with the development of the cost price model. I sincerely hope that with this report I have done the complexity of this subject justice and have managed to make the subject accessible to the reader.

I would like to take this opportunity to thank my educational supervisors Frederik Vos and Louise Knight of the University of Twente and Niels Uenk of the Public Procurement Research Centre for their guidance during this graduation project. Not only was their input valuable, the meetings were also very insightful in the cooperation between people whom operate in different paradigms.

Additionally I would like to thank my company supervisors, Maarten Smits and Annemieke Scholten for their support during the project, their input and opportunities to spar on the content and process and, together with Rob ten Brinck, for making sure the project was off to a good start and having the patience and willingness to deal with someone completely new to this field. Of course Jan Megens and John de Kruiff cannot be left out, whom commissioned this research and provided me with a mighty subject to sink my teeth in. Thank you.

Furthermore, I’d like to thank all the respondents of the formal interviews and the Menzis colleagues for their insights and feedback, they proved instrumental in both creating and assessing the initial model and the formulation of the recommendations.

Lastly I would like to thank my family for their unconditional support.

I hope you will find this thesis an interesting read.

Desiree Ankersmit, July 2021

Management summary

On the first of October 2020 a court ruling took place concerning the newly proposed purchasing policy for long term care of five Zorgkantoren (Rechtbank Den Haag, 2020). The tariffs and their argumentation was deemed insufficient, directly leading to the Zorgkantoren wondering what a proper method would be to determine a reasonable Wlz tariff and reason for the Menzis Zorgkantoor to commission this research.

After establishing that the Wlz is a complex healthcare law in several ways, the plethora of stakeholders, the allocation of financial means and the execution of the law in itself are examples of its complexity. And establishing that other countries also have yet to find a well-rounded sustainable solution for long-term care, it became apparent that the issue could be approached from different perspectives for different reasons. The choice was made by Menzis to approach the problem from a cost price perspective, mainly for the perceived legal feasibility.

Finding confirmation for the cost price approach in general business literature and finding practical examples in research done in the WMO and by the NZa of cost-price research, formed the basis for formulating the proposed initial model. The model allocates material costs to the Wlz through the use of financial statements, it allocates personnel costs through the data from the 'kwaliteitskader' and allocates those costs to the different acts of care ('prestatiecodes') by the means of declaration data, on the level of an individual care-provider. The outcome of the model is a cost price per act of care ('prestatiecode') per individual care-provider.

Formal interviews were held to gather input on the context of the Wlz, efficiency and specifically on the initial model. An expert in optimization of healthcare processes, a NZa employee and three ZN employees were consulted for their expert opinions. Based on these interviews, the informal interviews and experience points of improvement were identified and turned into recommendations and points of further discussion.

There are plenty of recommendations that flowed from all the gathered feedback, all important to increase the quality of the model. The following four recommendations consist in equal amounts of refinement and development recommendations, to give a broad impression of the recommendations:

- Evaluate the incorporation of NHC and NIC in the model
- Expand the model for the GGZ and GZ
- Reconsider the allocation of material costs and the influence of 'one off' purchases
- Create a comprehensive dashboard to visualize the results

While in need of refinement and further development, the execution in Excel provided proof of model's concept. In addition to this proof it also provided insight in the potential uses of the model besides pure tariff determination. It can become a potent tool for purchasers, by comparing both 'prestaties' and care-providers to one another and doing even further analyses on those results. With the use of an improvement cycle the following iterations of the model will eventually deliver the proper method the Zorgkantoor needs. Whether it is for creating acceptance of tariffs among care-providers or as a preparation to defend the tariffs in court.

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Dutch healthcare related entities and terms

AMvB	“Algemene maatregel van bestuur” additional legislation to an existing law
AWBZ	“Algemene Wet Bijzondere Ziektekosten” predecessor of the Wlz and partially the WMO
Basis pakket	Care covered by the most basic of health insurance
CIZ	“Centrum Indicatiestelling Zorg” Organisation responsible for judging the care need of patients
DNB	“De Nederlandsche Bank” supervision entity for, among others, health insurers
Extramurale zorg	Care that takes place outside institutions for the old, the mentally ill and the disabled
Herschikking	The determination of production agreements between care-providers and Zorgkantoren which happens in November of each year
Herverdelings-middelen	Funds that can be used by the Ministry of Health, Welfare and sports to counteract shortages in the Wlz
Integrale vergelijking	Project to compare similar care-providers to one another with the intent to learn from one another to improve and as a starting point for the dialogue of fitting tariffs
Intramurale zorg	Care that takes place inside institutions for the old, the mentally ill and the disabled
Jeugdzorg	Legislation concerning care for minors
KIK-V	“Keten Informatie Kwaliteit Verpleeghuiszorg”, initiative to improve the exchange of data by streamlining the process, better aligning the requested data and reusing already existing data.
Kwaliteitsbudget	Additional funds for the improvement of the quality of care in nursing homes.
Kwaliteitskader	Framework for quality standards, quality improvement, external supervision and the procurement of care
Macrokader	National Wlz budget
Nacalculatie	The assessment of financial over- and under-production based on the agreements made in the “herschikking” and redistribution on a national level
NHC	“Normatieve Huisvestings Component”, normative housing component
NIC	“Normatieve Invetaris Component”, normative inventory component

NZa	“Nederlandse Zorgauthoriteit” Dutch Healthcare Authority
PGB	“Persoonsgebonden Budget” Personal Budget
Prestatie(code)	A specified act of care with a specific code as identifier for administrative purposes
Regiokader	Regional Wlz budget
Verdeelmodel	Allocation model to determine regional budgets
VWS	“Minisiterie van Volksgezondheid, Welzijn en Sport” Ministry of Health, Welfare and Sport
Wlz	“Wet Langdurige Zorg” Long Term Care Act, legislation concerning long term care
WMO	“Wet Maatschappelijke Ondersteuning” Social Support Act, legislation concerning social support
ZiN	“Zorg in Natura”, care purchased on behalf of patients by the Zorgkantoren
ZN	“Zorgverzekeraars Nederland” branche organisation for health insurers and zorgkantoren
ZN richttarief	Tariff as determined by the research of ZN, this tariff serves as a starting point for Zorgkantoren to differentiate on when necessary
Zorgkantoor	Regional purchasing office, plural “Zorgkantoren”
Zorgplicht	Obligation to provide care
ZVW	“ZorgVerzekeringsWet” Health Insurance Act, legislation concerning care

1 Introduction

Due to the typically Dutch subject at hand, the occasional lack of proper English translations of Dutch healthcare entities and overall clarity for assumably predominantly Dutch readers, all entities will be described in this research by their Dutch abbreviation/name. Some terms will also not be translated due for similar reasoning, on page V an overview of Dutch entities and terms can be found.

Long-term care in the Netherlands is arranged through the 'Wet langdurige zorg' (longterm care act, Wlz)(Rijksoverheid, 2021c). Regional purchasing offices for this type of care, henceforth Zorgkantoren, are responsible for procuring long-term care or to facilitate a client in procuring their own care through a personal budget (NZa, 2020b). They do so with funds provided by the government (Zorginstituut Nederland, 2021a). The providers of the long-term care do not determine their own tariffs, that is done by the Zorgkantoren in the form of a base-tariff with a potential bonus based on the differentiation criteria of the Zorgkantoren. Currently there is no exact method on how these tariffs are determined, they are mostly based on past experiences, common sense and gut feelings.

On the first of October 2020 a court ruling took place concerning the newly proposed purchasing policy for long term care of five Zorgkantoren (Rechtbank Den Haag, 2020). The judgement was that multiple aspects of tariff determination were flawed. Firstly the base tariff, a percentage of the maximum tariff of the Dutch Healthcare Authority (NZa), was poorly reasoned as to why the specific percentage was chosen. Secondly the requirements for the bonus that could be earned by the care providers was not transparent.

The judge did acknowledge that the maximum tariff, as set by the Dutch Healthcare Authority (NZa), does not have to be the tariff that is paid. Zorgkantoren can offer a lower tariff if that tariff is reasonable/substantiated and is properly explained by giving arguments as to why it is 'reasonable'. The challenge for the Zorgkantoren is that they need to come up with more arguments of greater quality for the reasoning behind the tariff they offer to care providers. An appeal has been made against this court ruling, which has not altered the outcome or consequences for the Zorgkantoren.

This issue is of course not only being faced by the five Zorgkantoren involved in the court ruling, all others face the same issue. While not immediately troublesome for every Zorgkantoor, for example Menzis was not one of the defendants and has an ongoing five year contract with care-providers, it does have implications for the future. Once the current contracts have ended, all Zorgkantoren will need to be able to explain how the base tariff and the bonusses are determined and why they are 'reasonable'.

As the Zorgkantoren are non-competing this also means there is room for cooperation to tackle the 'reasonable' tariff issue, which is done within the long-term care (Wlz) workgroups of the health-insurers branch-organization ('Zorgverzekeraars Nederland', ZN)(ZN, 2021b). The subject of the tariffs becomes more complex when considering that the maximum tariff as set by the Dutch Healthcare Authority (NZa) does not line up with the national budget for long-term care. This budget, set by the ministry of health, is divided over all the Zorgkantoren in accordance of the allocation model (NZa, 2020a). Additionally, looking from the bottom up, the care-providers need to deal with the cost prices of the care. The connections between the different entities and the Zorgkantoren concerning the tariff determination are complex. Making it even more complex is the fact that care-providers can also have direct relationships with other Zorgkantoren, when they span across multiple regions. This makes the reasoning for a 'reasonable' tariff more difficult as Zorgkantoren can have differences in tariffs and reasoning which might both be valid, for example the ratio between 'care that takes place inside institutions' and 'care that takes place outside institutions' within regions can cause such a difference.

The issue of tariff determination touches upon the bigger challenge of sustainable long term care, described by F. Kruse et al. (2021, p. 9) as a "*wicked problem: een ongestructureerd en complex probleem waarvoor op dit moment geen eenvoudige oplossing bestaat*". An unstructured and complex problem with currently no simple solution due to it being a multidimensional challenge with social, economic and ethical aspects, that is intertwined in an intricate manner with other complex challenges which causes each solution to create new challenges, in addition to multiple stakeholders with different perspectives. (F. Kruse et al., 2021)

This challenge of sustainable long-term care is not only faced in the Netherlands, quite the contrary, when looking at other countries one can see that different systems for long-term care all face the same issues. Financial sustainability is one of the major factors in this and other countries are seen struggling with this form of sustainability as well (F. Kruse et al., 2021). A method to determine a tariff for long-term care which would both be effective as well as reasonable, could be beneficial in increasing financial sustainability, within and beyond the Dutch borders.

As the issue of tariff determination is both broad and complex the research will be limited to the determination of a base tariff for nursing care. This entails that the entirety of the bonus/differentiation structure is disregarded in the main research. Keeping the context, involved parties, scope and proposed deliverables in mind results in the following research question:

'*What is a proper method for a Zorgkantoor to determine a substantiated base-tariff at which Wlz care can be contracted?*'

In answering the research question, this research aims to provide and contribute the following:
Provide for practice

- An approach for the reasoning behind the Wlz tariff determination in the form of a practical cost price model
- A well-grounded basis and fuel for the discussion on what constitutes a reasonable tariff in Dutch long-term care within the branch-organization ZN

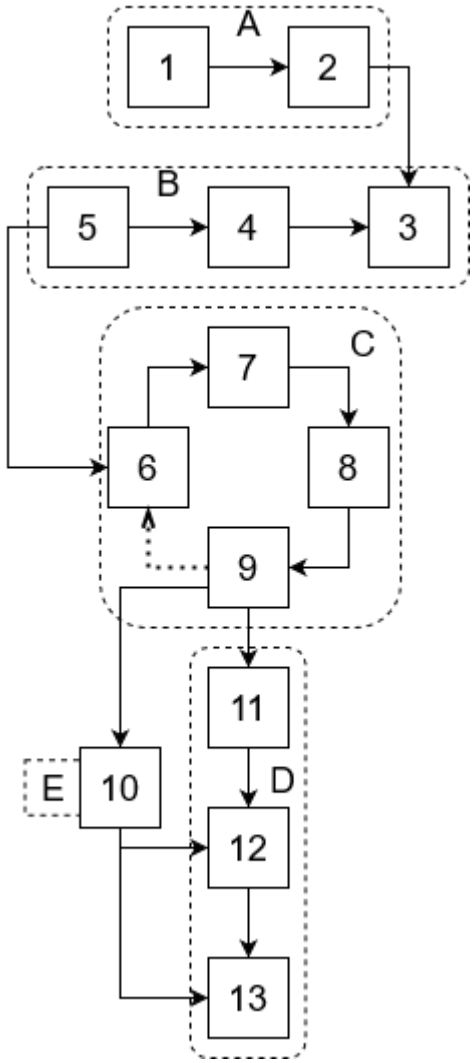
Contribute to theory

- A substantiated methodology to determine a long-term care base tariff for (Dutch) healthcare.

To tackle the research question at hand there are few subjects to be explored first. Starting with Dutch healthcare and the role of the Wlz within it. Then the approach/perspective to be chosen for this issue. And lastly the initial exploration of the determining a substantiated tariff/price. The general outline and methods used in this research will be discussed in greater length in the following chapter.

2 Methodology

The aim of this research is to deliver a method by which reasonable tariffs can be determined for Long-term care. This entails that the nature of the research is focussed towards design/creation rather than just accumulating knowledge. This can also be seen in the set-up of the research as it consists out of four phases, the introductory phase in which the problem and methodology are explained, the preparatory phase where the context, perspective and existing knowledge are explored, the executionary phase revolving around the requirements, design, testing and evaluation of the model and finally the resultative phase where the research is finalized through conclusions, recommendations and the discussion. There is one odd chapter, considered to be auxiliary, that will focus on findings which are not directly related to the model but which do influence the context in which the model resides. Shown in figure 1 are the different phases of the research with their corresponding chapters.



Legend – Research set-up / Readers guide	
A	Introductory chapters
B	Preparatory chapters
C	Executionary chapters
D	Resultative chapters
E	Auxiliary chapter
1-13	Chapters

Figure 1 Research set-up / Readers guide

In this methodology chapter the methodological approach for the different phases will be discussed in chronological order, starting with the preparatory phase and ending with the resultative phase. The preparatory and the executionary phases will form the brunt of this chapter as they contain the most methodological intensive chapters.

2.1 The methodological aspects of the preparatory phase

The preparatory phase consists out of three chapters, chapter three concerning the context of the problem, chapter four concerning the perspective from which the problem is approached and chapter five concerning the existing knowledge on the chosen approach. In this phase three data collection methods were used. Two types of literature reviews, one focussed on academic literature and the other on industry specific literature/documents (policies, research executed by institutions like for example the Dutch Healthcare Authority or the branch-organization of health-insurers ZN, documents on related initiatives, etc.) and informal interviews. These methods will be described below with the corresponding chapters mentioned in which they occur.

Literature review on industry specific literature/documents (chapters 3 & 5)

The Long-term care act (Wlz) is an inherently Dutch subject, which is still relatively new (introduced in 2014), the subject of tariff determination at Zorgkantoor level even more so (late 2020), with a lot of information which is only available in Dutch at certain institutions. Most of this information cannot be found in the usual databases like Scopus or Web of Science. Instead sources as the Dutch Healthcare Authority (NZa, 2021c) and The Netherlands Scientific Council for Government Policy (WRR, 2021) are crucial sources in reviewing long-term care.

In chapter three the focus lies on the context of Dutch Healthcare and more specifically the Long-term care act (Wlz). As it is a factual explanation of an existing system, the most direct sources were used that were available within the system itself, the Dutch Healthcare Authority, the Government, the healthcare laws and the Zorgkantoor itself amongst others.

In chapter five the focus lies on exploring the cost-price perspective. Specifically in sections 5.2 and 5.3 research reports from several municipalities concerning the social support act (WMO) and the Dutch Healthcare Authority were used to gather insight in cost price research which had already been done in a similar setting.

Informal interviews, exploratory discussions and gathering of opinions (chapter 4)

Informal interviews were held within the commissioning organization with its employees. These “interviews” took place in a collegial setting often as a casual meeting or conversation. No official protocols were prepared beforehand, these were open discussion where the interviewees expertise and experience were leading.

In chapter four the decision for a perspective to approach the problem is the central subject. Informal interviews were used in the exploration of the issue of substantiated long-term care tariffs, as a discussion came to be on how to approach the issue. Rather quickly two major perspectives were identified, budget and cost price, which could both be pursued. To make a decision between the perspectives experts from various backgrounds (purchasers, analysts, legal advisors, managers) from within the organization were consulted for their considerations and opinions. This was done over the course of several weeks and formed the basis, together with a basic description of each perspective to guide the discussion, for the final decision for an approach. This decision was taken by the project commissioners within the organization.

Formal literature review (chapter 5)

A literature review is the preferred method to initially assess the already present knowledge on a subject (Cooper & Schindler, 2014). A renowned database is used, in this case Scopus, with search criteria that get more detailed as the search continues to gather a selection of relevant papers which explains the theory behind a subject.

In chapter five, specifically section 5.1, a formal literature review was done for the exploration of a substantiated price based on pricing strategies in a business setting. Appendix B contains a sample of the queries used to find the literature on pricing strategies to illustrate the search process.

2.2 The methodological aspects of the executionary phase

The executionary phase consist out of four chapters, chapter six concerning the model requirements, chapter seven concerning the model design, chapter eight concerning the testing of the model and chapter nine concerning the evaluation of the model. Two data collection methods were used in this phase, both formal and informal interviews. An iterative design/improvement method is proposed for the development of the cost price model. These methods will be described below with the corresponding chapters mentioned in which they occur.

The iterative designing of a cost price model (chapters 6, 7, 8, & 9)

The chapters of this phase describe a single iteration of the iterative process to develop and improve the cost price model. The first step consists out of formulating the requirements for the model, the second step concerns itself with the designing of the model, the third with the execution and testing of the model and the fourth and final step is evaluating the model. As mentioned this research will only discuss the initial iteration, but for further development it is encouraged to continue the development of the model in an improvement cycle.

In chapter six, the focus lies on the formulation of requirements the model has to adhere to, these requirements may come from the preparatory phase, informal interviews and the commissioning organization itself. In chapter seven the design of the cost-price model is the central topic, the pricing strategies and cost price research of the Social support act[1] (WMO) and the Dutch Healthcare Authority (NZa) (KPMG, 2018), as discussed in chapter five, will serve as the fundament of the cost price model. In chapter eight the execution and testing of the model will be discussed. In chapter nine the model will be evaluated through experience, informal- and formal interviews. Shortcomings and considerations concerning the model will be discussed here.

For the development beyond this research continuous improvement is advised, this is a main principle of the lean methodology (in which case it can be referred to as kaizen)(Slack, Brandon-Jones, & Johnston, 2013, p. 470), though often applied in production environments this concept is used among different types of businesses (Hendriks, Kuipers, & van Laak, 2010) and will come in useful in the design and refinement of the cost price model. Continuous improvement usually takes shape in the form an improvement cycle. Figure 3 shows the PDCA (Plan, Do, Check, Act) cycle, one of the most commonly used improvement cycles next to DMAIC (Define, Measure, Analyse, Improve, Control). PDCA was chosen over DMAIC at this stage of the initial development due to DMAICs need to Measure and validate issues of an already existing process/model. Which would be preferable when dealing with a later iteration of the cost price model, but in the first few iterations the somewhat broader PDCA seems better suited.

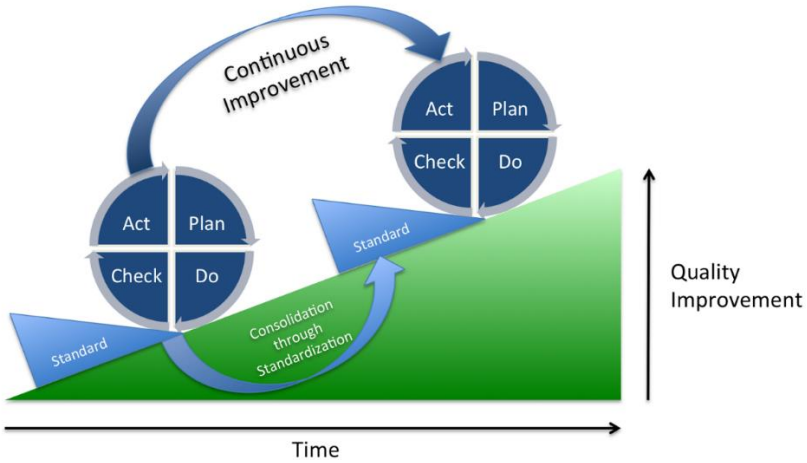


Figure 2 Depiction of the PDCA cycle (Vietze, 2013)

[1] van Weert and van Plaggenhoeven (2018), N. Uenk (2019), KPMG Plexus (2014), Equalis (2019), Bakker, Bruin, Homan, and Kroes (2018), Knieriem, Schenderling, and van Scherrenburg (2018)

Informal interviews, exploratory discussions and gathering of opinions (chapter 6, 7, 8 & 9)
Informal interviews were held within the commissioning organization with its employees. These "interviews" took place in a collegial setting often as a casual meeting or conversation. No official protocols were prepared beforehand, these were open discussion where the interviewees expertise and experience were leading.

In all chapters of this phase insights, opinions and in some cases decisions were gathered through informal communications with amongst others, purchasers, care-experts, analysts, mangers, etc. They were instrumental in the formulation of the requirements, influenced the design of the model and helped in both testing as well as evaluating the model.

Formal external interviews (chapter 9)
Feedback on the initial model has mainly been gathered during formal interviews outside of the commissioning organization. An employee of the Dutch Healthcare Authority (NZa), with a connection to their tariff determination and subsequently the cost price research of 2018, and three employees of the branch-organisation for health insurers (ZN), each with their own expertise concerning the long-term care act (Wlz), were asked during their interview to provide feedback on the initial model. The feedback request was one of two parts to the interview, the next section will discuss the other part and contain an overview of the interview protocols.

In chapter nine the focus lies on evaluating the initial model. This evaluation will be based mainly on the feedback on the initial model from the formal interviews. The extent to which the requirements are achieved is not part of this chapter, this will be discussed in chapter eleven were conclusions will be drawn.

The interviews are semi-structured and were held in a video conferencing application, due to the situation of the COVID-19 pandemic (Rijksoverheid, 2021a). The interviews, once permission was given by the participant, were audio recorded and transcribed. As the common perception is that transcribing is a time consuming (Scribbr, 2021) activity and considered by some to be less than exciting; "*it is undeniable that the high amount of time required contributes to its perception not only as a boring but also as a physically exhausting activity*" (Azevedo et al., 2017, p. 166) transcription services (University of Twente, 2021) were deployed to help the transcribing process along. Once the transcriptions of the formal interviews were written they were analysed by coding them. In this research interviews will be coded in a similar fashion to the Thematic Content Analysis method (Burnard, 1991) which is summarized and listed in appendix C. Interviewees were asked if they would like to check their own transcripts and/or the citations and relevant parts of their interview used in the report. Once coded the data was analysed, by grouping the coded text together, and incorporated in the research. The feedback on the initial model had its own code. Writing up the research is not a single step to be taken, writing is considered an "*all-encompassing activity that continues throughout the life of the project*" (Basit, 2003, p. 145). Once processed, the feedback and critique on the model were incorporated in chapter nine, the other part of the interviews will return in chapter ten.

2.3 The methodological aspects of the resultative phase and the auxiliary chapter

The resultative phase consists out of three chapters, chapter eleven were conclusions are drawn, chapter twelve in which recommendations are done and chapter thirteen containing discussion points and considerations to be taken into account when considering this research. Chapter ten is an auxiliary chapter containing the findings from the more general part of the formal interviews, giving insight in themes which touch upon the research and the context it resides in. It also includes, to a lesser extent, insights from informal interviews and experiences.

Formal external interviews (chapter 10)

The formal interviews also included a more general part, were related topics and themes were discussed. In addition to the interviewees from the Dutch Healthcare Authority (NZa) and the branch organisation for health-insurers (ZN) an expert in the optimization of healthcare processes was interviewed as well, specifically with a focus on efficiency.

In chapter ten these related, somewhat more general, themes and topics are focussed on. While this chapter does not directly contribute to or critique the initial model, and is therefore considered auxiliary, the findings of this chapter do influence the recommendations and the discussion in chapters twelve and thirteen.

The interviews have a semi-structured set-up, as described in the previous section, as there are a few topics and questions that need to be present in the interviews, but the participants are respectively experts in their subject and will need to be given room to elaborate and explain. This part of the interviews was coded according to the subjects that were discussed, not every subject appeared in every interview.

For each of the formal interviews a protocol is formulated. For the detailed protocols of the expert in the optimization of healthcare processes, the Dutch Healthcare Authority (NZa) and the two branch-organization of health-insurers (ZN) interviews please refer to appendix D, E, F and G respectively. Important to keep in mind is that each interviewee was chosen for a different reason and thus that the corresponding interviews have different focus areas. For example the interview with the Dutch Healthcare Authority (NZa) interviewee will have a heavier focus on the cost price model while the interview with the expert in the optimization of healthcare processes will be focussing on the topic of efficiency. In the table four an impression is given of the main topics, their sub-topics and a question to start the discussion of that sub-topic are described for each interview. The questions are not literally used in the interviews as they are translated from Dutch, but are mentioned to give an idea as to how a topic is approached. For all questions and topics please refer to the aforementioned appendices.

As the subject of Wlz tariff determination is relatively new, the interviews are somewhat explorative in nature. To accommodate this, the questions are formulated to be as open ended as possible to allow the interviewee to elaborate and to let the interview flow naturally. The interviews had a duration between 45 and 60 minutes, were conducted in Dutch and were recorded with their permission. The interviewees were sent an informed consent form prior to the interview and made aware that participation is completely voluntary and that withdrawal is always, at any point in time an option. There was no special incentive to participate in the interview. The final report will be send to the participants.

Expert in the optimization of healthcare processes		
Topic	**General sub-topics**	**Questions**
Efficiency	Interviewees relation/experience with the Wlz	What are your professional experiences with long-term care?
	The role of the Zorgkantoor in stimulating efficiency	What role should the Zorgkantoor have in stimulating efficiency?
	Integration of efficiency in tariff determination	How could efficiency be incorporated into tariff determination?
	Determination of norms	What is your view on the inventorying nature of cost price research in the Wlz?
NZa		
Topic(s)	**General sub-topics**	**Questions**
Wlz tariff determination by the NZa	Interviewees relation/experience with the NZa tariff determination process/cost price research	What are your experiences with tariff determination in long term care?
	NZa cost price research	How does the NZa feel in retrospect to the cost price research of 2018?
Wlz tariff determination by Zorgkantoren	ZN tariff determination/research	What does the NZa think of the cost price research done by ZN?
ZN		
Topic(s)	**General sub-topics**	**Questions**
ZN 'richttarief' (*ZN1*)	Interviewees involvement	What was your involvement in the research for the 'inkoopkader'?
	Design	How did the model used for the 'richttarief' come to be?
Role within ZN (*ZN2*)	Interviewees role	What have been recent activities and projects you have been working on?
National budget (*ZN2*)	Development	How will the macrokader develop, in light of the tariff discussion?
'integrale vergelijking' (*ZN2*)	The role of the 'integrale vergelijking'	How does the the 'integrale vegelijking' relate to the 'kwaliteitskader'?
NZa/ZN		
Topic	**General sub-topics**	**Questions**
Wlz tariff determination by Zorgkantoren	General tariff determination	What is your perspective on tariff determination by Zorgkantoren?
Cost price research design	Inventorying nature	What is your view on the inventorying nature of cost price research in the Wlz?
	Feedback on initial model	*Please refer to appendix E, F or G for all sub-questions*
All interviews		
Topic	**General sub-topics**	**Questions**
Data	Sources	Are there any (additional) sources of data that should be considered?
	Availability	How can those sources be accessed?
Information	Essential "literature"	What do you consider to be essential reading for this research topic?

Table 1 Interview protocol impression

The resultative chapters draw from the methodological aspects of the previous chapters

Chapters eleven, twelve and thirteen draw upon the information and insights gathered in previous chapters to finish this research with conclusions, recommendations and discussion points. Chapter eleven relies most on chapters six and nine, as these are instrumental in assessing whether the goals were met. Chapter twelve relies most on chapters nine and ten and to a lesser degree chapters four and five, as the interviews provided a lot of critique from which recommendations stem and the preparatory chapters included some concepts that could be further explored. Chapter thirteen draws from the research as a whole, but with a slight emphasis on chapter eight. In table two it is indicated per chapter which method was used to gather new information and insights and in case of the iterative design which chapters form the initial steps of that process. Chapters six and seven make use of the literature as discussed in chapter five, but do not introduce new literature themselves and are thus not marked in the literature section of the table.

Chapter	**Methodological aspects**					
	Formal literature review	Specific literature review	Formal interviews	Informal interviews	Iterative design /improvement cycle	Makes use of findings from previous chapters
1		X				
2						
3		X				
4				X		
5	X	X				
6				X	X	X
7				X	X	X
8				X	X	
9			X	X	X	
10			X	X		
11						X
12						X
13						X

Table 2 Overview per chapter which methods were used

In the next chapter the context in which the tariff determination issue resides, the Dutch Healthcare and specifically the long-term care act (Wlz), is explained. This is the chapter that starts the preparatory phase of this research, which will be followed by the chapter on which perspective is chosen to address the issue of tariff determination and is ended with the chapter on the exploration of existing knowledge on that approach.

3 Dutch healthcare

3.1 Overview of Dutch healthcare

The financing of Dutch Healthcare is organized in a complex structure. In essence there are four laws in which the financing is outlined, the 'Health Insurance Act' (ZVW), the 'Long-Term Care Act' (Wlz), the 'Social Support Act' (WMO) and the 'Youth Act' (Jeugdzorg) (Ministerie van Volksgezondheid Welzijn en Sport, 2017). The Ministry of Health, Welfare and Sports (VWS) is responsible for these laws. The execution of the laws is a responsibility of health insures for the ZVW (Rijksoverheid, 2021d, p. art.1 sub b.d.e.i.j & art.3 & art.4), the regional purchasing offices (henceforth 'zorgkantoren' plural or 'zorgkantoor' singular) for the Wlz (Zorginstituut Nederland, 2015) and municipalities for the WMO (Niels Uenk, 2019, p. 53) and Jeugdzorg (Rijksoverheid, 2021b).

In the Dutch healthcare as a whole approximately 95 billion euros is being spend. Roughly 54 billion for the ZVW, 32 billion for the Wlz and around 10 billion on the WMO, Jeugdzorg and miscellaneous (Ministerie van Financiën, 2020). The ZVW has a focus on 'cure', the type of healthcare that remedies/heals. For example hospital care, care provided by the general practitioner, midwifery and pharmacy (Rijksoverheid, 2021d, p. art.10). These types of care are included in the so-called 'basic package', as set by VWS. For care not included in the 'basic package' citizens can take on additional insurance at insurance companies, for example oral care, physiotherapy and alternative medicine. The insurance companies execute this task under a private law construction. They are supervised by 'De Nederlandsche Bank' (DNB) for their insurance activities (De Nederlandsche Bank, 2016) and by the 'Dutch Healthcare Authority' (NZa) for the care-related aspects (NZa, 2021d).

The execution of the Wlz, WMO and Jeugdzorg falls under public law. The WMO concerns itself with less intensive care than the Wlz, it is more often support than care. For example the WMO includes household assistance, personal assistance, respite care and several other forms of social care (Niels Uenk, 2019). Jeugdzorg concerns itself with helping minors in cases, for example, concerning family issues, mental health and behavioural issues in children (Rijksoverheid, 2021b). Both the WMO and the Jeugdzorg are direct responsibilities of municipalities.

3.2 Overview of the Wlz

This project concerns itself specifically with the Wlz, therefore this part of Dutch healthcare will be elaborated on in more detail than the previously explained ZWV and WMO/Jeugdzorg. The Wlz focuses on long-term care, where 24/7 care in the vicinity is necessary (Rijksoverheid, 2021c, p. art. 3.2.1 lid 1). Before a patient can make use of the Wlz care he or she needs an indication from the 'Centrum Indicatiestelling Zorg' (CIZ) (CIZ, 2021), an independent organization which judges if care is needed and to what extent. The kind of care and its intensity are expressed in the previously mentioned indication (CIZ, 2021), this is basically the entry ticket to care for the patient. The local Zorgkantoor receives the indication directly from CIZ (Rijksoverheid, 2021c, p. art. 9.1.2), which serves at the start of the care-mediation for the patient.

The Wlz concerns itself with three different sectors in healthcare, nursing care, disabled care and parts of mental healthcare (Rijksoverheid, 2021c, p. ch.3). The Zorgkantoren contract care-providers in these three sectors and can place patients at one of the care-providers in their portfolio. A patient is also free to source his or her own care, in that case he requests a personal budget (PGB) from the Zorgkantoor (Rijksoverheid, 2021c, p. art.3.3.1).

The Zorgkantoren are responsible for executing the Wlz (NZa, 2020b), to do so VWS provides funds for them to procure care or finance PGBs (Zorginstituut Nederland, 2021a). The Zorgkantoren have a 'zorgplicht' (NZa, 2020b), the duty/obligation to provide care, this entails that the Zorgkantoren need to provide the care that a patient has a right to according to his or her CIZ indication. Additionally they also have the obligation to not exceed the national available budget for the Wlz (NZa, 2020a).

There are 31 regions divided over 7 Zorgkantoren in the Netherlands (NZa, 2020b), see figure 2. Seven health insurance companies hold a concession from VWS which allows them to execute, within a separate legal entity within the organisation, the Wlz in one or more regions. Besides Menzis, which is responsible for three of those regions there are Zilveren Kruis (11 regions), VGZ (7 regions), CZ (6 regions), Zorg en Zekerheid (2 regions), DSW (1 region) and Eno (1 region) which all have a concession for a Zorgkantoor.

Figure 3 Zorgkantoor regions and corresponding Zorgkantoren (NZa, 2020b, p. 6)

These Zorgkantoren cooperate in a sub-section of the health insurers branch organisation Zorgverzekeraars Nederland (ZN) (ZN, 2021b). This cooperation can result in, for example, a national purchasing policy (ZN, 2020), common definitions of healthcare related terms and additionally ZN can act as the representative of the Zorgkantoren to defend the common interests of the Zorgkantoren.

The functioning of the Zorgkantoren is assessed by the Dutch Healthcare Authority (NZa) serving as a supervisor (NZa, 2021d). If a Zorgkantoor does not function properly the Dutch Healthcare Authority (NZa) can give a binding advise on improvement (NZa, 2018). The Dutch Healthcare Authority (NZa) also has a regulating function (NZa, 2021e), within the framework of the law they can draft additional policies (NZa, 2021e). These policies usually have a direct impact on the execution of the Wlz by the Zorgkantoren.

Complexities of the Wlz

The Wlz and its execution is riddled with complexities. Most prominent for this research are the (allocation) of financial means and the discrepancy between the national Wlz budget (macrokader) and the NZa maximum tariff.

The distribution of financial means happens as follows. VWS determines the national Wlz budget (Ministerie van Volksgezondheid Welzijn en Sport, 2020), which is allocated by the Dutch Healthcare Authority (NZa) to the different Zorgkantoor regions by the means of the allocation model (NZa, 2020a) based on the CIZ indication per region. A small part of the national Wlz budget is reserved by VWS as "Herverdelingsmiddelen"(Ministerie van Volksgezondheid Welzijn en Sport, 2020), funds that can be used to counteract shortages. VWS is allowed to put these funds to use throughout the year, but is usually specifically advised on the matter by the Dutch Healthcare Authority (NZa) in May and August each year. If a Zorgkantoor has a shortage it can also occur that a Zorgkantoor that has surplus transfers these extra funds (NZa, 2020a, p. 12), this only takes place before the "herschikking", the determination of production agreements between care-providers and Zorgkantoren. The national budget may not be exceeded (NZa, 2020a, p. 20). The "herschikking" takes place in November (Menzis Zorgkantoor, 2019, p. 31), production agreements are made for the remainder of the year. Then in the "nacalculatie", the financial over- and under-production based on the agreements made in the "herschikking" are assessed and on a national level redistributed (Menzis Zorgkantoor, 2019, p. 32). Then the whole cycle starts again with the determination of the national Wlz budget.

The NZa maximum tariffs do not match the national budget, if Zorgkantoren would use these tariffs there would be a certain shortage, which is why the court ruling explicitly states that Zorgkantoren do not have to pay the NZa maximum tariff (Rechtbank Den Haag, 2020). It does however play a role in the determination of tariffs by individual Zorgkantoren. The Zorgkantoren estimate the costs involved with the long term care and use this estimation in the price agreements with contracted care-providers. A price agreement is expressed as a percentage of the maximum tariff as set by the NZa (Menzis Zorgkantoor, 2019, p. 26). The Zorgkantoren have, in essence, two options to control the costs of long term care, the price and the manner in which care is given. The volume component cannot be influenced as the CIZ has given an indication determining the needed care and the Zorgkantoor has an obligation to arrange the needed care.

The manner in which care is given can be distinguished in the personal budget and 'care procured by the Zorgkantoor' ('Zorg in Natura', ZiN), the latter can be further distinguished into 'care that takes place inside institutions and care that takes place outside institutions (Rijksoverheid, 2021c, p. art. 3.3.1). Care inside institutions is the most expensive of the three. The price component concerns the percentage of the NZa maximum tariff at which the Zorgkantoor purchases the care. The lower the percentage the more care the Zorgkantoor can purchase, however the care provider has to be able to provide the care at that price point conforming to the set quality requirements. In which lies the core of the issue at hand, the reasonable price of Wlz care.

4 Perspectives

There are several approaches to facing the issue of defining a substantiated base-tariff. In figure four the four different approaches and their leads for further investigation are shown. First we have the opposite perspectives of cost price (bottom up) and budget (top down), both constraining the tariff from opposite ends. Another way to approach the issue is to evaluate the past and the fourth approach is to fall in line with the other Zorgkantoren and formulate a tariff determination method as a collective.

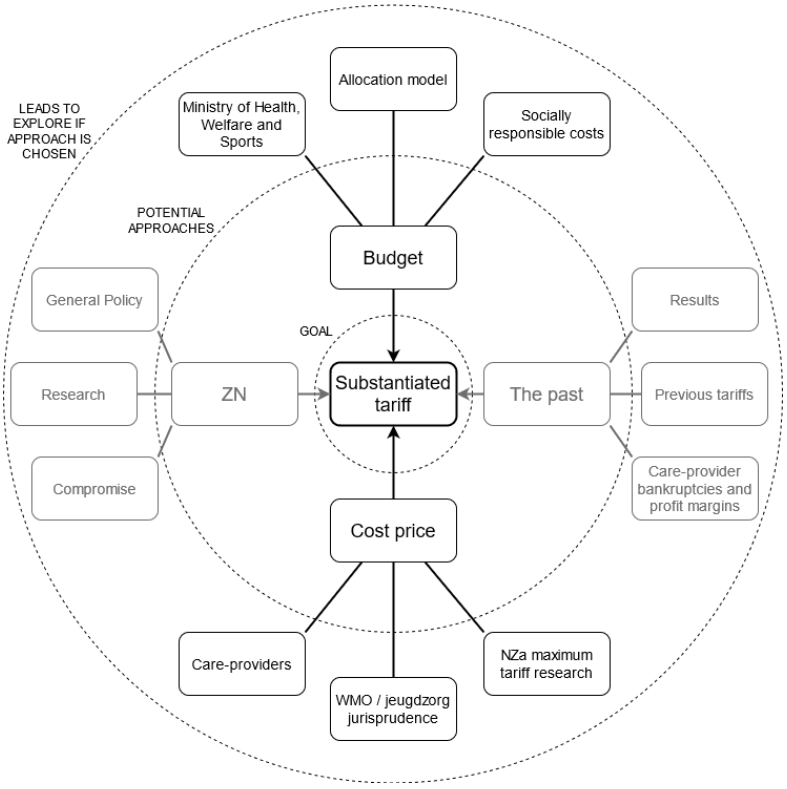


Figure 4 Approaches to a substantiated tariff

As the past can only be used to argue as to why the status quo should be kept and this report should be fuel for further discussions within ZN, the respective perspectives of 'ZN' and the 'past' are not considered. This leaves two other perspectives that could be pursued; the budget and the cost price. The considerations on which perspective is going to be pursued and the final decision will be included in this chapter. The contents of this chapter are mainly based on informal interviews, the formulas from the first two sections were made during these discussions to make the discussion itself more tangible.

4.1 Budget

The top down view on the issue of determining a substantiated Wlz tariff, with the main component in determining the tariff being the regional budget (regiokader). To make the rather abstract concept of determining the tariff from the given budget more tangible the equation found below can be made.

$$NZaMax * Tarief\% * Hoeveelheid = Regiokader$$

Equation 1 Basic equation for visualisation of budget approach

In this equation the 'NZaMax' and the 'Regiokader' are given, they are determined by the NZa/VWS and are assumed to not be influenceable by the Zorgkantoor. The 'Hoeveelheid' could be forecast from historic data and growth expectations on the amount of CIZ indications in the regions the Zorgkantoor is responsible for, this also ensures that regional characteristics are factored into the model. The model is however not yet considering the different indications the CIZ might give people, which is a determining factor for the costs associated with the NZaMax. To make the model more precise, by including the different CIZ indication, the equation would look as follows.

$$\sum_i (NZaMax_i * Hoeveelheid_i) * Tarief\% = Regiokader$$

Equation 2 Equation for visualisation of budget approach including CIZ indications

The CIZ indications are now taken into account by the summation over the components that are dependent on the type of indication (i). The prognosis for the amount of indications of each type based on historic data could be skewed due to past preferences by providers for certain indications. For example currently a 'VV5' indication is more coveted than a 'VV4'. If the magnitude of this preference significantly influences the prognosis, it will have to be taken into account in the model.

The model can be used to determine the eventual tariff, as a percentage of the NZa maximum, by rewriting the equation as found below. In this approach to determining a 'reasonable' budget-based tariff, the opportunity for differentiation in the form of a bonus system is not taken into account, consistent with the scope of the project.

$$Tarief\% = \frac{Regiokader}{\sum_i (NZaMax_i * Hoeveelheid_i)}$$

Equation 3 Equation for visualisation of budget approach with focus on the tariff

4.2 Cost price

The bottom up view on the issue of determining a 'substantiated' Wlz tariff, with the main component in determining the tariff being the cost price of the provided care. In the equations found in this section the 'kostprijs' element is assumed to include a certain margin to deal with risks, invest and remain financially healthy overall. The cost price determines the total cost; what the budget should be if cost price is the driving factor. The concept of determining the tariff from the perspective of cost price can also be made more tangible by expressing it as the equation found below.

$$\sum_i (NZaMax_i * Hoeveelheid_i) * Tarief\% = \sum_{ij} \left(Kostprijs_{ij} * Hoeveelheid_{ij}\right)$$

Equation 4 Basic equation for visualisation of cost price approach

In this equation the 'NZaMax' is given, it is determined by the NZa and assumed to be non-influenceable by the Zorgkantoor. The 'Hoeveelheid' could be forecast from historic data on the amount of CIZ indications (type **i**) for each provider (**j**) in the regions the Zorgkantoor is responsible for. The prognosis for the amount of indications of each type based on historic data could be skewed due to past preferences by providers for certain indications. For example currently a 'VV5' indication is more coveted than a 'VV4'. If the magnitude of this preference significantly influences the prognosis, it will have to be taken into account in the model. The cost price per type of indication (**i**) is different for each provider (**j**). This data is not readily available and would need to be collected for all providers.

The model can be used to determine the eventual tariff, as a percentage of the NZa maximum, by rewriting the equation as found below.

$$Tarief\% = \frac{\sum_{ij} \left(Kostprijs_{ij} * Hoeveelheid_{ij}\right)}{\sum_i (NZaMax_i * Hoeveelheid_i)}$$

Equation 5 Equation for visualisation of cost price approach with focus on the tariff

In this approach to determining a 'reasonable' cost price based tariff, there is an opportunity for differentiation between providers. In that case the 'Hoeveelheid' component is disregarded, as the equation now focuses on a single care-provider, as shown below.

$$Tarief\%_j = \frac{\sum_i (Kostprijs_i)}{\sum_i (NZaMax_i)}$$

Equation 6 Equation for visualisation of cost price approach with focus on the tariff for a single care-provider

4.3 Considerations

Both perspectives, while vastly different in approach, can be pursued in determining a tariff. The biggest question being what the driving factor of the tariff should be according to the Zorgkantoor, budget or cost price. The equations, however only give a clinical insight into the issue. There are of course different aspects to setting a tariff that come into play as well. The following considerations came forth from different conversations with Wlz purchasing professionals and other experts within Menzis.

First of all, the Zorgkantoor needs to be able to justify and explain the new tariff and the manner in which it's determined to the care providers. They also have to be able to reproduce this, should questions arise on the tariff determination at a later date.

Secondly, the method of tariff determination should hold up in court if a care-provider(s) chooses to challenge the tariffs.

Third, access to (accurate) data needs to be considered. The necessary data for the equations of the previous two sections might not always be readily available and there might be a need to assess it on accuracy.

Fourth, the possible implications for the Wlz clients. The chosen perspective might also present opportunities to alter the current method of contracting. For example, a voucher system was named in one of the discussions which might also impact the Wlz experience of the client.

Fifth, the importance of differentiation of the base-tariff for individual care-providers. While out of scope for this research, differentiation is seemingly a hot topic for both the Zorgkantoor as well as care-providers, as it can serve to reward certain qualities of specific care-providers. Which in turn can positively influence the qualitative and societal sustainability of long-term care. The magnitude of importance bestowed upon differentiation and the way it should take shape are aspects that will have to be considered by the Zorgkantoor and could perhaps form a follow-up research.

4.4 Cost price: The chosen perspective

Cost price will be the pursued perspective, based on the following considerations. Cost price research is already occurring in the healthcare sector, for example the municipalities make use of it for the WMO and also the NZa maximum tariffs are determined with help of cost price research. It is the conventional method and also consistent with the expectations of the judge (Rechtbank Den Haag, 2020). While the budget perspective might be more considerate towards financial sustainability and the need for efficiency due to the growing costs of healthcare, it will be hard to defend this argumentation method of reasonable tariffs in court, should care-providers object to the tariff they're given. After all, in previous years any shortage in the national Wlz budget (macrokader) has been compensated by the Ministry of Health, Welfare and Sports (VWS). While it might be clear that this is not sustainable in the future, the unsustainability cannot be used as to argue as to why the care-providers are getting a budget based tariff, when it has not, up until that point, occurred that the ministry (VWS) does not compensate for a shortage[2]. Additionally if the budget would become leading, it might occur that instead of incentivizing efficient use of funds by care-providers, it urges them to decrease the volume of care given. Which would be counterproductive to the care obligation the Zorgkantoren have.

While the considerations mentioned above were the deciding factor in the choice of perspective more pros and cons have been identified, with some being mentioned in earlier sections of this chapter. For a more birds-eye overview of these considerations please refer to the table below.

Budget	**Cost price**
Stimulus for efficiency increase	Consistent with expectations of the judge
'Reasonable' also applicable to the Zorgkantoor	'Reasonable' mainly applicable to care-providers
Macro/regiokader is the limiting factor	Cost price is the driving force
Controversial/unexplored	Conventional
Continuity of care-providers under pressure	Risk of discontinuity is limited
Potential risk of decreasing volume of care	No incentivization of decreasing care
Availability and integrity of data is ensured	Availability and integrity of data is questionable

Table 3 Considerations of the budget and cost price perspectives

In the discussion about the to be chosen perspective, efficiency and the concern that care-providers have an interest in a high cost price, when the cost price perspective is chosen, were major topics. The magnitude of the discussion on these topics warrants action. The cost price perspective does not have an obvious inherent encouragement for efficiency. Therefore, the topic of efficiency, and how it can be included while acting form a cost price perspective, is incorporated in the research as an auxiliary topic and will be further discussed in chapter ten.

The next and final chapter in the preparatory phase will further explore the chosen approach of cost-price. It will do so by generally looking from a business perspective at pricing strategies and by closer examining cost price research done by municipalities for the Social Support Act (WMO) and the cost price research done by the Dutch Healthcare Authority (NZa). Afterwards the next phase, the executionary phase, will commence by putting the insights and information gathered in the preparatory phase to use.

[2] Assessment of the Menzis Legal department

5 Tariff determination based on cost price

This chapter will explore the determination of tariffs/prices, closing in on examples that might be similar in nature to the issue of determining substantiated tariffs in the long-term care act (Wlz). This chapter will provide a basis on which elements will be further investigated in the actual research.

5.1 A substantiated price from a general business perspective

When a good or a service is offered there is an accompanying price to be paid. When looking at it from a business perspective there are three main categories of pricing strategies, cost-based pricing, competition-based pricing and customer value-based pricing (Hinterhuber, 2008). Cost-based pricing uses cost data to determine a price, competition-based pricing focuses on the prices of competitors and customer value-based pricing focuses on the value the product has for the customer (Hinterhuber, 2008, p. 42).

Competition-based pricing is not applicable to the Wlz, as the care-providers all get the same regional base-tariff with a potential bonus based on individual merits as determined by the Zorgkantoren (Menzis Zorgkantoor, 2019). Customer value-based pricing would ideally apply to the Wlz in some form or another. However, the value of long-term care to a patient, or their families, might be hard to determine and could potentially inflate tariffs beyond societal acceptance. After all, to a patient in need of long-term or even palliative care, that care would seemingly be invaluable. The Wlz does not only need to consider the patient perception but that of society as well, in order to have societal sustainability (F. Kruse et al., 2021). Cost-based pricing can be done in the Wlz and is already used in other areas of Dutch healthcare (Vereniging van Nederlandse Gemeenten, 2017).

Tung, Capella, and Tat (1997) identified several pricing strategies and combined them into a multi-step synthetic approach. While the multi-step synthetic approach contains elements not applicable to the Wlz due to involving the competition, which is non-existent in the Wlz, the cost-based pricing strategies incorporated in it can be interesting. Three cost-based related strategies are mentioned, the traditional cost-oriented approach, the extended cost-oriented approach and bundle pricing approach. The traditional being all costs plus a profit margin, the extended approach adds a service characteristics premium to the traditional approach based on the essentiality, durability and tangible added value. The bundle approach builds upon the cost oriented approaches but adds that when services are combined in a certain package the price should be more attractive (Tung et al., 1997). All of these would be usable in the Wlz, the bundle approach could be considered for certain patient profiles.

P. T. M. Ingenbleek and van der Lans (2013) argue that cost-based pricing is not actually a pricing strategy but rather a pricing practice. The latter being described as *"the set of activities executed by an organisation's managers that lead to a price decision*" (P. T. M. Ingenbleek & van der Lans, 2013, p. 29). A pricing practice yields an price while a pricing strategy has goals. The pricing practice concerns itself with information that the price decision is based on, three types of information are identified by P. T. M. Ingenbleek and van der Lans (2013) which correspond with the three main categories of pricing strategies as defined by Hinterhuber (2008); the costs, the competitors price and the value to the customer.

(Customer) value is a concept that keeps returning in articles on pricing, in some cases value-based pricing strategies are considered to be significantly better than other strategies (Hinterhuber, 2008; P. Ingenbleek, Debruyne, Frambach, & Verhallen, 2003). Others see it as an element of a pricing strategy (Tung et al., 1997) or pricing practice (P. T. M. Ingenbleek & van der Lans, 2013). Value could even be created or diminished, under certain conditions, by using a cost-based pricing strategy (Llewellyn, Begkos, Ellwood, & Mellingwood, 2020). However, value is a particularly difficult concept, the measurement of value and the communication of value are major obstacles, even in production companies (Hinterhuber, 2008) were value might be clearer than in healthcare. A value-based pricing strategy, or value-based elements in a cost-based strategy would be worth researching further when a basic strategy/practice has been established and time allows for it.

The cost-based strategy/practice is going be pursued for the Wlz, as it is most suitable considering the lack of competition and the sheer difficulty that the concept of value poses. However, the articles have

shown that elements outside of the traditional boundaries of a strategy can be incorporated to improve it and form a composite strategy. Which might be valuable considering the following two sections.

5.2 Substantiated tariffs in the Social Support Act (WMO)

The topic of a 'reasonable' tariff is not completely new in Dutch healthcare. The Social Support Act (WMO) already has such an requirement for municipalities contracting social care (Vereniging van Nederlandse Gemeenten, 2017). Municipalities need to offer a reasonable tariff based on cost price research, which they either do themselves or which they outsource. As the court ruling implies a similar requirement for the Zorgkantoren in the determination of the Wlz tariffs, the research done for the Social Support Act (WMO) could provide insight on the aspects and components of such research.

Six reports from different municipalities and research/consultancy organisations[3] on Social Support Act (WMO) cost prices have been analysed on five different aspects found in each report. There are commonalities and differences between these reports, which can help formulate a cost price model for the Wlz. However, on some aspects they also raise concern. The findings on each aspect are as followed:

Research population – In two cases the participation request was done by a party other than the researching party, they did not provide information on the scale of their research population. In two other cases they had a small group of care-providers, however no explanation was provided as to the extent of the representativeness of these groups for the larger population. The remaining reports had a research population based on the response from care-providers, in one case this resulted in a population of approximately 25% of the approached care-providers which were responsible for approximately 50% of the turn-over in that region.

Data – In most reports the data is gathered through a form (mostly Excel based) which care-providers were asked to fill in. In one case it was explicitly mentioned that in case of inconsistencies and anomalies the care provider was contacted to clarify, in two cases it was mentioned that the data was assumed to be correct and the others did not provide information on checks of the data. In several reports the quality of a portion of the data was questionable, in some cases the care-providers did not have some of the data, some did not fill in the form completely, some data varied wildly possibly due to unclear definitions of cost elements, etc.

Cost price model – In all cases the costs elements of the 'Algemene Maatregel van Bestuur' (AMvB, an elaboration by the government on the law, guidelines to further clarify the AMvB are given by the association of Dutch municipalities (Vereniging van Nederlandse Gemeenten, 2017)) are used, some mentioned this explicitly, others did not. The difference between reports was mainly in the amount of detail by which the cost price elements of the AMvB had been analysed. At least one report added one element not mentioned in the AMvB, which included a percentage based raise for risk coverage and innovation.

Comparables – five of the six reports used data from other municipalities either in their calculations or as verification. Other comparables included data from the 'Exceptional Medical Expenses Act' (AWBZ, predecessor of the Long-term Care Act and partially of the Social Support Act), national benchmarks, data from care-providers outside the specific municipality and a previous report from within the same municipality.

Results – The results from different reports vary from a range for values of cost-price elements to actual tariffs with an indexation plan for the following year. Most reports, also the ones which resulted in an actual tariff, mention the importance to explain and discuss the tariffs with care-providers, especially when the new tariffs might differ greatly from the tariffs they previously got.

The research done in the WMO on cost prices could form a basis for a cost price research in the Wlz. The cost price elements taken into account in the examples and the AMvB mentioned in this section can mostly be translated to the Wlz. The data(gathering) will most likely be similar. The aspect of research population, and mostly the representativeness of this population, will probably be somewhat

[3] van Weert and van Plaggenhoeven (2018), N. Uenk (2019), KPMG Plexus (2014), Equalis (2019), Bakker et al. (2018), Knieriem et al. (2018)

more complicated as the Wlz has a great diversity in care. It concerns itself with elderly care, disabled care and some elements of mental healthcare. However the greatest challenge will be in the comparables, as the discussion of 'reasonable' tariffs and their argumentation is relatively new to the Wlz as shown by the recent court ruling (Rechtbank Den Haag, 2020).

5.3 The NZa maximum tariff research

The maximum tariffs, as set by the Dutch Healthcare Authority (NZa), are also based on cost price research (Nederlandse Zorgautoriteit, 2018). This research is, contrary to the Social Support Act research by municipalities and the prospective Wlz research by the Zorgkantoren, not bound to a certain region, but is executed nationwide. As this research is basically what is asked of the Zorgkantoren but on a grander scale, the aspects of this research may provide valuable insights on the structure and execution of a cost price research for Zorgkantoren. The five aspects used for analysing the Social Support Act research are also used in analysing the Dutch Healthcare Authority (NZa) research.

Research population – All care providers that provided long-term care in 2016 were approached to contribute to the research. 88% of them provided data, of which 56% was used in the calculation of an average cost price. The used data from care providers represents approximately 73% of the turnover in the Wlz (KPMG, 2018, p. 15). Representativeness was judged with help of a formula which looks at several elements like sample size and overall population amongst others (KPMG, 2018, p. 16). For an overview of formula and its elements please refer to appendix A. Additionally the most prominent care providers were actively monitored on providing their data.

Data – The data request consisted out of care provider specific Excel-templates, where some fields were filled in with data gathered by the Dutch Healthcare Authority (NZa) or not shown as they were not relevant to care providers of that type of care. To assist care providers with providing the data a helpdesk was created, online seminars were hosted and other resources as project documentation and a FAQ were made available. Several checks were done to ensure data quality, both within the template itself, as well as after receiving the filled in template. If the required data did not pass quality control the care provider got a chance to improve and resubmit the data. Some care providers proved incapable of delivering the required data, the data they delivered either did not pass the checks or included unrealistic values. These care providers were informed of these problems. (KPMG, 2018, pp. 11-17)

Cost price model – this research has rather elaborate cost price model consisting out of six layers. A visual representation of this model is shown below.

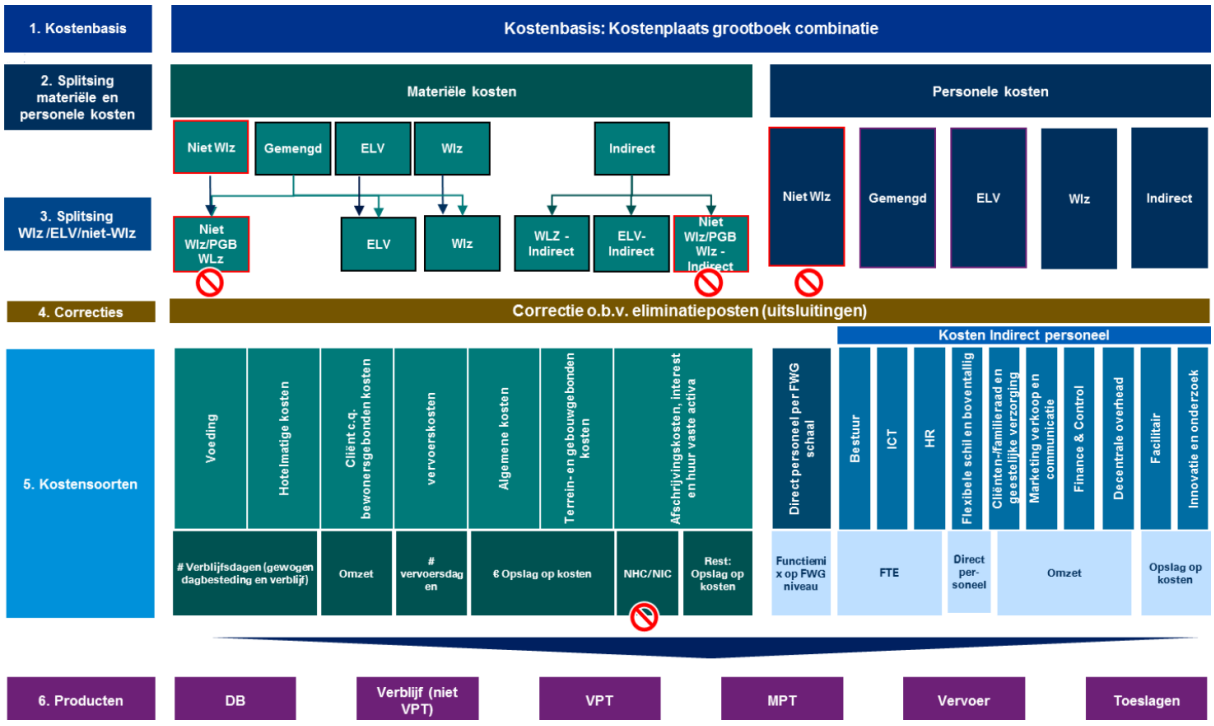


Figure 5 Visual representation cost price model (KPMG, 2018, p. 18)

The model splits the material and employment costs further into more detailed components, to eventually determine the cost price for each Wlz product for a care provider. These cost prices are then used for further analysis.

Comparables – No other research was mentioned by which this research was compared. However, the research was executed in cooperation with care providers and branch organisations. A delegation of these organisations formed a group to provide feedback on both the research itself, as well as the outcome. The group also included controllers from care providers and purchasing professionals from the Zorgkantoren. Additionally, the ministry of Healthcare, Welfare and Sports (VWS) and 'Zorginstituut Nederland' were also involved in drafting the data request and in discussing the results.(KPMG, 2018, p. 8)

Results – The results are given in different tables, which include, among others, the cost price itself (a weighted average cost price based on the volume for all care providers), a judgement on the reliability, the amount of care providers on which the cost price is based and the structure of the cost price itself. These aspects are given per Wlz product and per sector. These elaborate tables consist out of 23 columns each. These results were calculated with the help of special software. (KPMG, 2018, p. 21)

This research, which forms the basis for the argumentation of the NZa maximum tariff, provides a valuable insight into cost price research for the Wlz. The research methods are extensive, detailed, and elaborate. The techniques used in this report might be off a magnitude too great for the scope of this project, they can however provide ideas and concepts on which a cost price model can be improved. Additionally, it is worth investigating whether there is a possibility for the NZa to deliver similar results based on the same data by only focusing on care providers in a certain region. This could provide Zorgkantoren with a basis, from a tried and tested cost price model, for their determination of tariffs. Additionally, it would be interesting to see if certain regions are analysed in this manner what differences there will be an if they can be explained. To expect the Zorgkantoren to do such elaborate research themselves might be unrealistic, as put by the NZa "*Deze twee fasen hebben bij elkaar meer dan een jaar in beslag genomen.*"(Nederlandse Zorgautoriteit, 2018, p. 5) the two phases to come to the results of the maximum tariffs took over a year. Considering the involvement of the NZa itself, KPMG and several other organisations, the workload of such an elaborate research is most likely too much to be asked from the Zorgkantoren, especially for the ones that contract care for shorter periods of time.

6 Model requirements

In this first chapter of the executionary phase the insights and information gathered in the previous chapters is put to use together with additional insight form informal interviews to determine the requirements of the initial model. Four main requirements can be identified, the model needs to hold up in court if challenged, the model is preferably accepted by care-providers, the model is workable for the Zorgkantoren and adheres to the limitations set for the initial model. Each main requirement will be further specified and discussed in their own sections, starting with the court feasibility.

6.1 Court feasibility

The first main requirement relates to the direct instigation of this research, the court ruling of October 2020 (Rechtbank Den Haag, 2020), as described in chapter one. Where the tariffs of several Zorgkantoren were challenged by care-providers and deemed insufficiently substantiated. If the model is going to substantiate the base-tariff it could be subjected to a similar challenge and should thus be able to hold up in court. This entails several sub-requirements.

Reasonableness of the tariff takes the main focus in the court ruling, there being described in Dutch as a “reël tarief” (Rechtbank Den Haag, 2020). It is also one of the most difficult requirements to define and measure. The tariff should allow the care-providers to deliver the care within the set quality standards. As mentioned in the court-ruling the tariffs need to be based on diligent research were the cost-price of the given care by a sufficiently efficient operating care-provider forms the foundation (Rechtbank Den Haag, 2020, p. 5.6).

Reproducibility of results, should the tariff be challenged at a later point in time or if other questions arise on past tariffs as determined with the model, the results from that period of time should be reproduceable.

Representativeness of results is both mentioned in the court ruling as well as highlighted in the analysis of the research from the municipalities and the Dutch Healthcare Authority in chapter five. In the court ruling the focus lies more on the inclusion of legitimate differences between care-providers (for example regional differences) that may cause variations in cost-price (Rechtbank Den Haag, 2020, p. 5.7). In the research assessed in chapter five the focus lies more on the scale of the research population and the total turnover in the sector they represent.

6.2 Care-provider acceptance

While the model should hold up in court in case of the tariffs being challenged, it of course would be preferable if it did not come to such measures. This entails that the tariff and its substantiation needs to be accepted by the care-providers. Judging from informal interviews and the research as done by the municipalities for the Social Support Act (WMO) as described in chapter five there are roughly three sub-requirements to achieve care-provider acceptance.

Explainability of the model/substantiation was mentioned in several municipality reports together with communication as an important aspect, especially if the resulting tariffs differ greatly from current tariffs. It was also a subject highlighted in informal interviews, if the model can be explained to and understood by care-providers the discussions between the Zorgkantoor and the care-providers becomes more constructive. It does not necessarily mean that care-providers will agree with any easy to understand model, but it will help in creating mutual understanding.

Communication seems key judging by the research from both the municipalities and the Dutch Healthcare Authority (NZa). The Dutch Healthcare Authority organized seminars for care-providers and created a help desk to assist them as well (KPMG, 2018, p. 11). In the research of the Social Support Act the municipalities often involved care-providers during the research and discussed the results with them afterwards. Open communication, together with the aforementioned explainability, will improve mutual understanding.

Administrative burden for the care-providers was mentioned quite often in the informal interviews. If the care-providers have to do additional administrative work, for example for a data request, resistance towards the model will rise. Additionally the Zorgkantoren aim to limit in general the administrative burden care-providers experience, adding such a burden to tariff determination would be counterproductive to their own goals.

Accuracy of the model is also an important aspect, the model must represent reality in an accurate enough manner for the care-providers to accept it. This entails that both the data to feed the model and calculations within the model should be correct and reliable.

6.3 Workability for Zorgkantoren

The third main requirement concerns itself with the workability for Zorgkantoren. As mentioned in chapter five, a cost price model as complex as the one used by the Dutch Healthcare Authority (NZa) might be of too great a magnitude for the scope of the Zorgkantoren in regularly determining tariffs. From the informal interviews from within the commissioning Zorgkantoor the following three aspects of workability were deduced.

The complexity of the execution of the model and the model itself must be limited. As seen in the research of the Dutch Healthcare Authority, they deployed specialist software to run their model (KPMG, 2018). The level of detail from the extensive and elaborate methods used by the NZa might be off a magnitude that is too great for the scope of the Zorgkantoor tariff determination. The model should be accurate but workable in a Zorgkantoor setting, meaning that it preferably utilizes already present software, data infrastructure and computing power.

User-friendliness of the model and its results is important if it is going to be put to use. One of the uses identified next to merely determining a tariff is the use as a tool for purchasers to give insights into the care-providers and the specific acts of care (‘prestatiecodes’). Both for determining a tariff and using the outcomes of the model as a tool the results need to be easy to produce and visualize.

The administrative burden of such a model for the Zorgkantoor should optimally be minimal. For example, if the model would need to send out a data request to care-providers it would not only impact the administrative burden of care-providers but also that of the Zorgkantoor. The subject of tariff determination and substantiation by Zorgkantoren is relatively new, before these tariffs were mainly based on past experiences and guestimates. Depending on the design of the model, its use could significantly increase a workload that was not previously there, this is preferable limited.

6.4 Initial model limitations

For the initial model certain limitations were put in place to frame the task of designing it. A Wlz data analyst of the Menzis Zorgkantoor was consulted to ascertain within which boundaries the basic/initial model should be formulated. Three main points of concern were identified.

The use of readily available data is one of these boundaries. For the scope of the project and the formulation of an initial model it made sense to use data that is available within the commissioning organization. This does however limit the possibilities to gain direct insights from care-providers themselves.

Focus on nursing care, there is more data available on this type of care, for example in addition to the financial statements and declaration data which is available for all care types, the nursing care also comes with data from the ‘kwaliteitkader’ (an initiative to improve quality of care, especially in nursing/elderly care) (Menzis Zorgkantoor, 2021). This includes data on working hours and salaries. Additionally, nursing/elderly care is the fastest intrinsically growing type of care within the Wlz, due to the ageing population (United Nations, 2019).

Execution of the initial model in Excel, the initial model must be testable in Microsoft Excel, once a proof of concept is given more severe software might be deployed when the model is further developed/refined.

6.5 Requirements assessment list

The requirements mentioned in this chapter will be used again in the beginning of the resultative phase. In chapter eleven, the conclusions, the extent to which the model adheres to the requirements will be looked at. Table four gives an overview of each requirement with a short description of each one.

Requirements	Explanation
Court feasibility	***The model/substantiation must hold up in court when challenged***
Reproduceable	The results of the model need to be reproduceable at a later point in time
Reasonable	The model needs to result in reasonable tariffs
Representative	The scale of the research population needs to be large enough to be representative and (regional) differences between care-providers need to be taken into account
Care-provider acceptance	***The model would preferably be accepted by care-providers***
Explainability	The model is easily explainable and understood
Administrative burden	The model does not create additional administrative work for care-providers
Accuracy	The model need to use correct and reliable data and calculations for it to give an accurate impression
Communication	Care-providers need to get the opportunity to give their thoughts during the model design and in discussing the results
Workability for Zorgkantoren	***The model is workable for Zorgkantoren***
Complexity	The complexity is within the limits of the existing software and data/IT infrastructure
User-friendliness	The model and it results are easily and comprehensibly accessible
Administrative burden	The administrative burden/additional workload the model brings should be limited
Initial model limitations	***Boundaries in which the basic/initial model should be formulated***
Use of readily available data	The initial model can only make use of readily available data within the Zorgkantoor
Focus on nursing care	The initial model must focus on nursing care
Execution in MS Excel	The initial model must be testable in Microsoft Excel

Table 4 (Initial) Model requirements

The next step is to combine the requirements and gathered insights into an initial model which will serve as a basis to build upon. Once an initial model is formulated in chapter seven, it will be tested and subsequently evaluated with input from industry experts, in chapters eight and nine respectively.

7 Initial design of the cost price model

This second chapter of the executionary phase will focus on the formulation of an initial cost price model based on initial limitations as set by the Menzis Zorgkantoor, insights from informal interviews and the research done in the WMO and by the NZa. The cost price model will be used to determine the cost prices on the level of a single care provider.

7.1 The purpose, intended use and source data of the model

Purpose of the initial model

The requirements from the previous chapter provide an image of what the final iteration should achieve. While the initial model is designed with these requirements in mind, its purpose is somewhat different.

The initial model will be used as a proof of concept, does the model deliver what it is supposed to and do the outcomes make sense. Once it is clear that the model is on the right track and will deliver the intended results more resources can be allocated into refining and executing it. Additionally for the proposed improvement cycle, the PDCA-cycle, the initial model will form the starting point in the cycle to design a method to determine substantiated tariffs.

Intended use

The cost price model is intended to generate data on cost prices for each defined act of long-term care ('Wlz prestatie'). These cost prices can then serve as a basis to determine the eventual tariff, similar to the tariffs of the Dutch Healthcare Authority (NZa) which also use the cost prices of each defined act of long-term care ('Wlz prestatie') as a basis (KPMG, 2018). To the basis of the cost price other mark-ups can, and might need to, be added, for example a profit margin to cover some risks and maintain the financial stability of the care-provider, as also seen in the more traditional cost pricing strategy (Tung et al., 1997). After determining the cost price base and the potential mark-ups that make the eventual tariff, this can be compared to the NZa maximum tariff to express it as a percentage of the NZa tariff as is the standard in the Wlz.

The cost prices of the individual care-providers, once the model is more refined in a later iteration, could be used in further analysis to assess the performance of care-providers and look into specific acts of care ('prestaties'). This analysis could be done in the form of benchmarking, comparing the cost prices to one another, formulating (weighted) averages, assessing outliers and see how the observed cost prices compare to the NZa maximum tariff. These analyses could help uncover best practices, give insight in why cost prices differ and alert the Zorgkantoor to care-providers that could use some support. Additionally, with the insights of those analyses, the model could provide purchasers with a powerful tool for discussions with care-providers as is later discussed in chapters eight and nine.

Data sources

As the cost-price model is used to determine cost prices at the care-provider level, the data used to feed the model should be and is available at the same level. The data sources were used, the annual reports, the declaration data and data from the 'kwaliteitskader'.

The annual reports of all care-providers are publicly available in the DigiMV archive (CIBG, 2021a). Care-providers are obligated to release them, a process that is monitored by the Health and Youth Care Inspectorate (IGJ, Inspectie Gezondheidszorg en Jeugd), should care-providers fail to release (complete) annual reports then the IGJ can issue them a fine (CIBG, 2021b). These reports contain various types of financial statements and accompanying explanations.

The declaration data is received from care-providers and contains information on the person whom received care, the types of specific acts of care ('prestaties'), the amount of each specific care act, and the monetary compensation the Zorgkantoor should give according to the tariffs. Each Zorgkantoor only has access to their own declaration data. The declarations are checked by the Zorgkantoor, if any anomaly occurs it will be investigated and possibly rectified.

The 'kwaliteitskader' provides the Zorgkantoren with data on working hours and salaries, for specifically the nursing care intensities VV4 up until VV10. This data is available since 2018 and will be generated for the last time in 2021 (Menzis Zorgkantoor, 2021).

7.2 The initial cost price model

7.2.1 Description

Taking into account that only readily available data may be used, the financial statement, the declaration data and the ‘ kwaliteitskader’ data will form the backbone to the model. The intended outcome of the model is a cost price per act of care (‘Wlz prestatie’), similarly to the cost price research by the Dutch Healthcare Authority (NZa) (KPMG, 2018, p. 20). To get to that point the first thing needed would be the total costs, specifically the total cost of Wlz care. As seen in both the NZa research (KPMG, 2018) and the research done for the Social Support Act (WMO) (Vereniging van Nederlandse Gemeenten, 2017) the costs can be roughly split up in two main varieties; personnel costs and material cost. For the initial model the material cost are defined in the same way the Dutch Healthcare Authority (NZa) defines it, basically everything not personnel related (KPMG, 2018, p. 19).

This poses the first challenge in the designing of the model. While the financial statements do include an overview of the returns and which part of healthcare they can be attributed to, they don’t make that distinction for the costs. They do however make a distinction between personnel and other costs, which entails that the material costs can be formulated. By comparing the returns on long-term care (Wlz) with their total returns, a ratio can be defined by which the material costs can be attributed to long-term care (Wlz). Similar to the manner in which the Dutch Healthcare Authority (NZa) attributes indirect material costs to different types of healthcare (KPMG, 2018, p. 51).

For the personnel cost a different route is taken, as the Zorgkantoor has actual specific data on personnel cost for the majority of nursing/elderly care in the Wlz. The data from the ‘kwaliteitskader’ includes the acts of care (‘Wlz prestaties’) tied to the care-profiles VV4 – VV10, which leaves the acts of care tied to VV1 - VV3 and a few supporting acts of care (‘Wlz prestaties’) which are not included. As the number of a profile increases, so does the intensity of the given care. By using this information in combination with the declaration data to provide a ratio between acts of care (‘Wlz prestaties’), an approximation of the Wlz personnel costs can be made.

With both material and personnel cost now attributed to the Wlz is can be narrowed down towards the cost price per act of care (‘Wlz prestatie’). The declaration data is instrumental in this process. First the total Wlz costs are allocated to the different acts of care (‘Wlz prestaties’) through the ratio determined with monetary compensation care-providers have declared. Then the total cost per acts of care (‘Wlz prestatie’) is divided by the amount of declarations of that act of care (‘Wlz prestatie’) to come to the cost price per act of care (‘Wlz prestatie’).

7.2.2 Visual/conceptual model

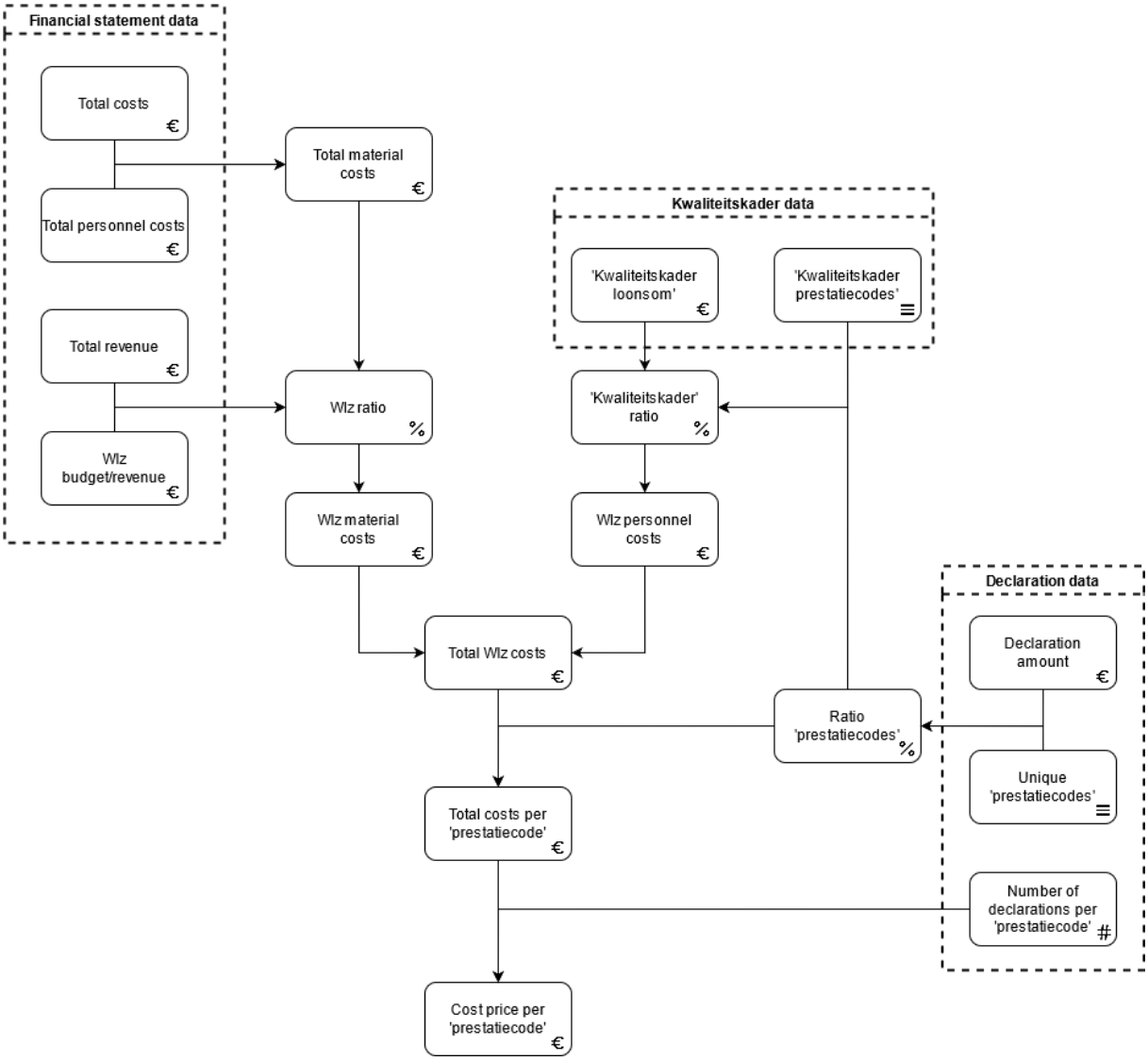


Figure 6 Conceptual representation of the initial model

7.3 Assumptions, design choices and considerations

In the design of the model certain assumptions were made to limit the complexity of the model and adhere to the set limitations of the initial model. In this section these assumptions are further explained as well as the design choices that lead to this particular model. In addition to the assumptions and the design choices some considerations one needs to take into account when considering the model are discussed as well.

Assumptions

The monetary compensation in the declaration data, and with it the maximum tariff of the Dutch Healthcare Authority, provides a sensible ratio between the different acts of care ('Wlz prestaties'). This assumptions was made to be able to allocate the costs to the different acts of care ('Wlz prestaties'), without having to determine a different allocation key which would need to be done either in consultation with care-providers or through data requests. Both of which do not adhere to the limitation of only using readily available data and which would entail discarding the ratios as determined by the Dutch Healthcare Authority (NZa), an institution with far more resources, experience and credibility on this level than the Zorgkantoren.

The income from the long-term care (Wlz) relative to the total income has a similar ratio to the material cost of the long-term care (Wlz) relative to the total material costs. This assumption was made for similar reasons as the previous assumption, to be able to allocate the material costs to the long-term care (Wlz) without having to do a data request amongst care-providers. This potentially does give a skewed image as the material costs for the different care-laws might not be as straight forward.

Design choices

Material costs defined as every type of cost other than personnel costs, as mentioned in the previous section, both the NZa and WMO make a rough distinction between material and personnel, which are subsequently further split into different categories with a varying level of detail. While delving deeper into the details might be interesting for further analysis and perhaps even in an attempt to set norms for specific costs, it does not directly add to the goal of determining an overall cost price per "prestatie". Therefore only the distinction between material and personnel costs are made. For the material costs the same definition, anything but personnel costs, is used as was used in the NZa cost price research (KPMG, 2018, p. 19).

Wlz ratio defined as the percentage of revenue assigned to the Wlz. The data request to care-providers done by the NZa for their cost price research allowed them to attribute most of the costs specifically to the Wlz or different categories. As this is not an option within the limit of using already available data, the NZa method of attributing the indirect material costs is taken as inspiration, those cost are attributed based on the ratio of revenue (KPMG, 2018, p. 51). In the initial model this method is used for all material costs.

The use of data from the 'Kwaliteitskader'. For the determination of personnel costs two options were considered, as both the financial statements and the 'kwaliteitskader' offered information on personnel costs. Determination through the data in the financial statements would be analogue to the determination of material costs, the 'kwaliteitskader' already had attributed personnel costs to a part of the Wlz care. Because the kwaliteitskader offered a portion of known personnel costs and only needed a ratio to determine a remainder of personnel costs, as opposed to the financial statement data being fully dependent on a ratio to attribute costs to the Wlz, it became the preferred method.

The outcome of a cost price per act of care ('Wlz prestatie'). Initially there was an idea to determine the cost price per type of indication as issued by the CIZ. However, while a CIZ indication does have a few related acts of care ('Wlz prestaties') there are also plenty of acts of care which can be attributed to any CIZ indication, for example transport. An act of care ('prestatiecode') is also predefined and universal measure of care within the Wlz, so there is no need to keep track of hours or minutes of given care for each care-providers. Therefore it is more sensible to determine a cost price per act of care ('Wlz prestatie'). Additionally the model used by the NZa also determines the cost price per act of care ('Wlz prestatie') per individual care-provider (KPMG, 2018, p. 16).

Considerations

The initial model only takes care-providers who operate exclusively in the region of the specific Zorgkantoor into account. Due to the Zorgkantoor only having data on the declarations within their own regions, care-providers that also operate in regions beyond the borders of the Zorgkantoor in question can't be taken into account in the model.

The model, similar to the NZa model, is inventorying. It does not consciously set or include any norms.

The data from the 'kwaliteitskader' ceases to be from 2021 forward, this is the last year this data comes from it. For years to come a different source will need to be found, a possibility is the KIK-V initiative which generates similar data on wages and personnel-costs (Zorginstituut Nederland, 2021b). Zorgkantoren can request certain data to be included in the KIK-V initiative, however they would have to do so as a collective.

The initial model is not (yet) fit for types of care beyond nursing care. The accuracy of the Wlz personnel-costs are dependent on the data from the 'kwaliteitskader', which might be difficult for care-providers whose main type of care isn't nursing/elderly care. The data form the 'kwaliteitskader' only concerns the CIZ types VV4 till VV10, if a care-provider does not provide care for these types of indications there will be no data from the 'kwaliteitskader' to use in determination of the personnel-costs. This issue is currently out of scope as the focus is initially on the nursing/elderly care, but is important when the time comes to adapt the model for use in other sections of the Wlz.

8 Executing the model

The model as designed in the previous chapter and displayed in section 7.2.2 has been executed in Microsoft Excel with data available within Menzis. As the data and the results are sensitive to both Menzis and the care-providers the results are shown in a manner that should not be traceable to any specific person or care-provider

8.1 Sample

For the testing of the model a sample of 43 care-providers across the three Menzis Zorgkantoor regions was used. To be included in this sample the care-providers needed to meet the following criteria:

- The provider is active in only one region, which belongs to the Menzis Zorgkantoor area.
- The data from the financial statements of the care-provider are included in the Menzis datafiles
- The care-provider has revenue from Wlz care
- The care-provider has received ‘kwaliteitsgelden’ and is thus included in the ‘kwaliteitskader’ data

The data used for the testing of the initial model is from 2019, as this is the most recent year of which complete data was available at the time of execution.

8.2 Results

For the general results of the model the acts of care (‘prestatiecodes’) have been limited to the ones related to the nursing care severity levels VV4 till VV10, this encompasses the V- and Z-codes which are respectively for full home care and insitutional care. These results are shown in the first graph (figure 7), were the minimum observed cost price (Min), the maximum observed cost price (Max) and the weighted average (GGem) from the model are depicted together with the NZa maximum tariff for reference. The graph shows the increase in cost as the severity level rises (V041 and Z041 are the least severe, V103 and Z103 the most severe) with a similar shape as the NZa maximum tariff. The lines for the Z-codes show to a greater extent similar fluctuations with the NZa maximum than the V-codes, this can be explained by the fact that the Z-codes are far more often declared than the V-codes, causing a more stable image for the Z-codes. Another interesting observation that can be made from this graph is that the weighted average lies much closer to the NZa maximum for the Z-codes than for the V-codes. Which has no apparent cause, to explain such a difference.

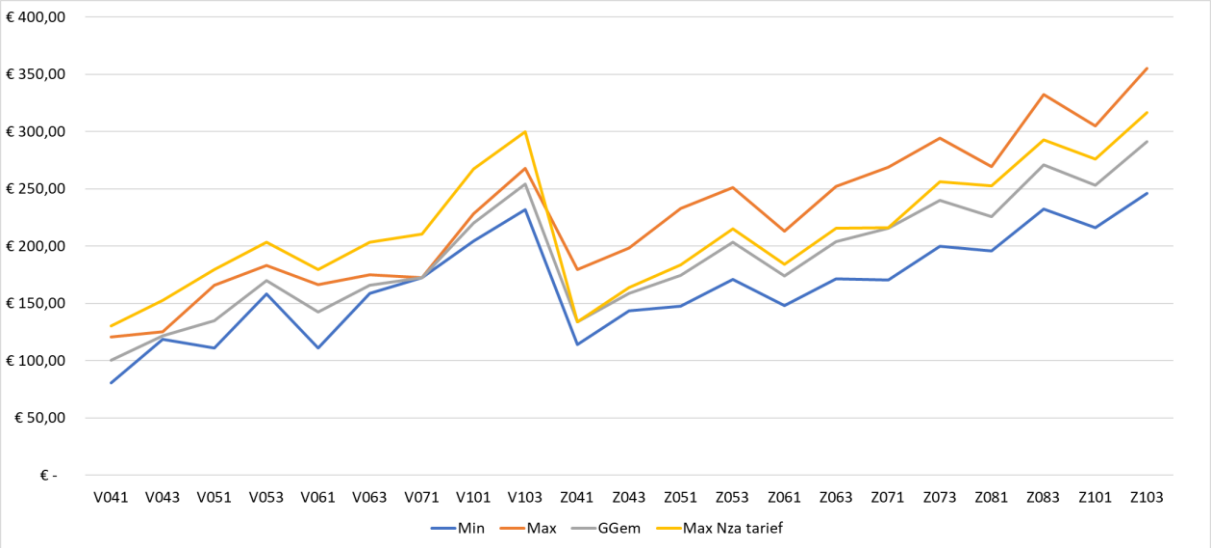


Figure 7 General outcome of the initial model for VV4 till VV10 with the addition of the NZa maximum tariff

Practical uses

The previous graph showed the overall similarity and flow of the model to the NZa maximum tariff, but that is of course not its purpose nor is it how the model is going to be put to use. As for practical uses by, for example, purchasers the next graph will be more interesting. This graph (figure 8) shows the found cost prices of all care-providers for a single act of care ('prestatiecode'), in this case Z051. The horizontal lines depict the NZa maximum tariff, the weighted average and 92% of the NZa maximum tariff, which is the base line tariff Menzis uses (Menzis Zorgkantoor, 2019). Purchasers can use these types of graphs to compare care-providers to one another on specific acts of care ('prestatiecodes').

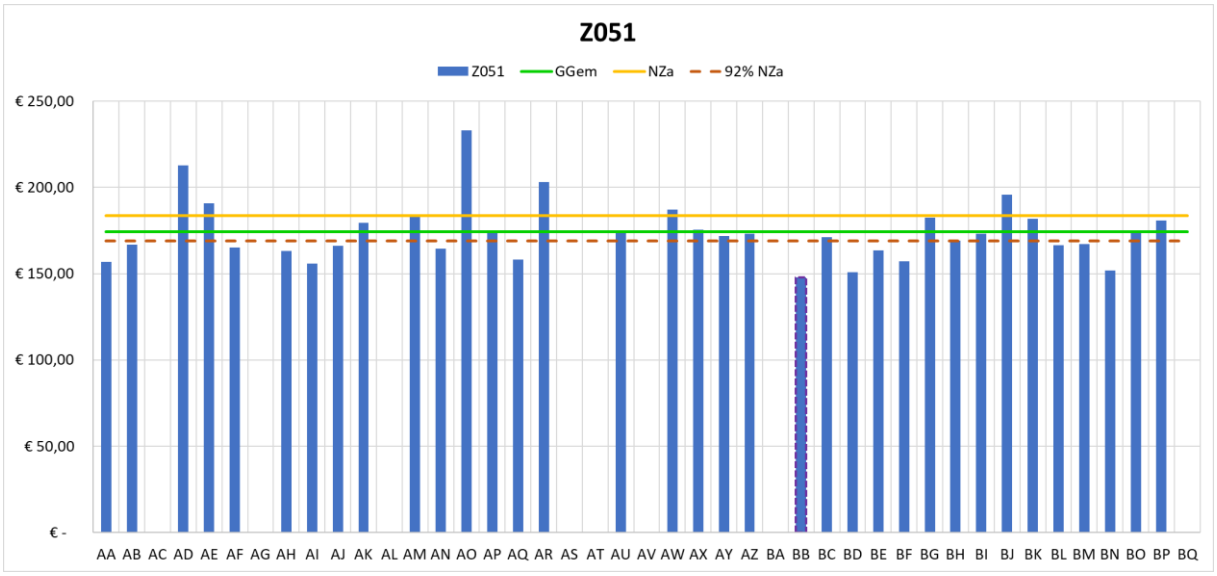


Figure 8 Overview of all care-providers for 'prestatiecode' Z051

Similar to the previous graph, instead of looking at all care-providers of a single act of care ('prestatiecode'), one can also look at all the acts of care ('prestatiecodes') from a singular care-provider as shown in the following graph (figure 9). For this graph the care-provider with the lowest determined cost price for the Z051, from the previous graph was used, named in this research as care-provider BB. In this graph the determined cost prices are shown for each act of care ('prestatiecode') that got declared by care-provider BB, for reference the weighted average and the NZa maximum are again shown as well. This type of graph could be used to assess the strong suits of a care-provider and perhaps to identify best practices. Care-provider BB seems to be doing rather well on all acts of care ('prestatiecodes') and not just on Z051 judging by these results.

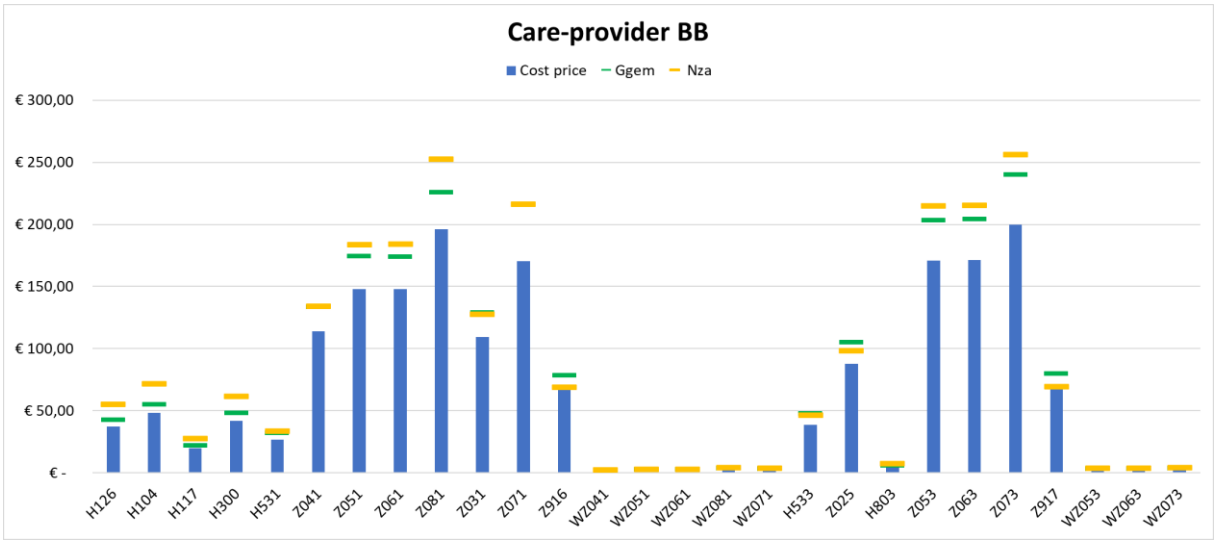


Figure 9 Overview of observed cost prices of all 'prestatiecodes' for care-provider BB

Tariff determination

These past couple of graphs might be insightful and of use for the purchasers and further analyses, but they do not yet tell us the tariff that care-providers should receive. To come to an overall tariff there are several options. Option one, a care-provider specific tariff based on their determined cost prices. Option two, a care-provider specific tariff based the weighted average of the determined cost prices. Option three, a tariff specific to a group of comparable care-providers based on the weighted average cost price of the group. And finally option four would be a general tariff for all care-providers based on the weighted average of cost prices and the region wide ratio of the acts of care ('prestatie codes'). To illustrate the idea options one and two have been executed for care-provider BB.

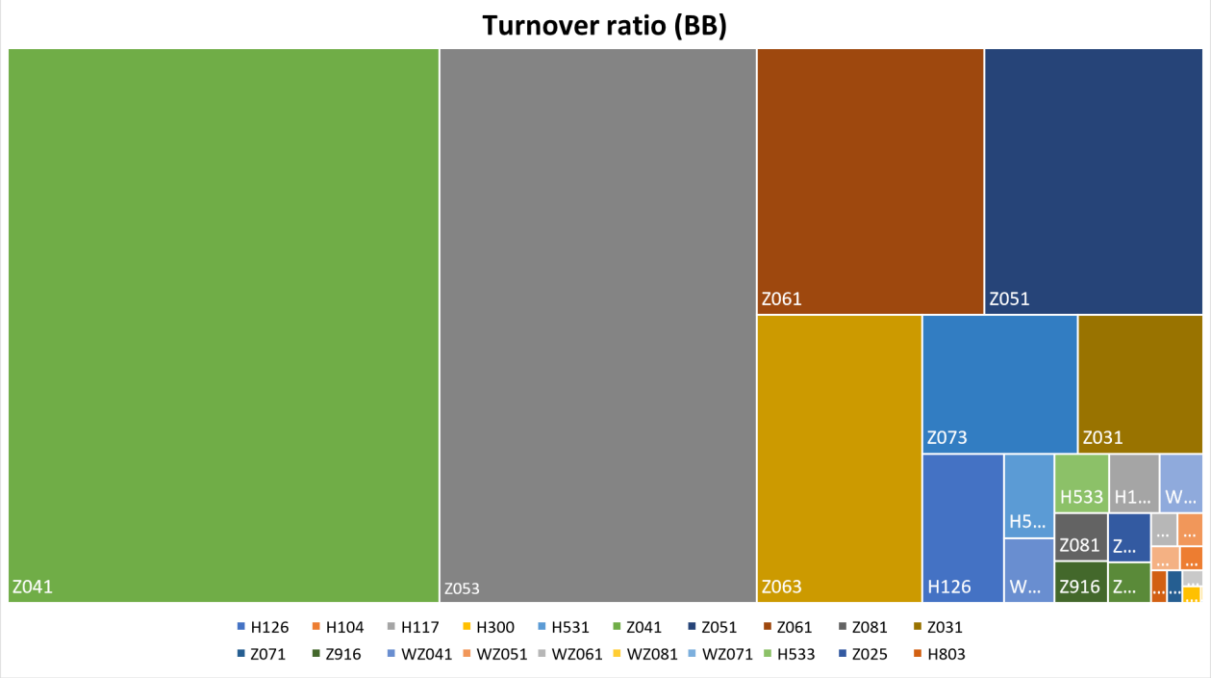


Figure 10 Turnover ratio for the 'prestatiecodes' of care-provider BB

In the graph (figure 10) the turnover per act of care ('prestatiecode') is shown for care-provider BB, these are used as weights in the determination of the tariff. If the tariff would be based on the weighted average cost price, care-provider BB would end up with a tariff of 96.24%. But as seen in the previous graph (figure 9), this care-provider performs quite a bit better than average, when determining the tariff based on their own model observed cost prices the tariff would be 81.53%. To put these numbers in perspective, care-provider BB received at that time an approximate tariff of 95.16% from the Zorgkantoor.

The tariff based on the weighted average would be higher than the tariff they have gotten, this can partially be explained by the types of care care-provider BB provides. As can be seen in the last two graphs (figure 9 & 10) this care-provider mainly provides Z-codes which is institutional care. And as seen in the very first graph (figure 7) the Z-codes were much closer to the NZa maximum tariff than the V-codes, explaining why tariff based on the individual care-provider turns out higher than the general tariff the Zorgkantoor used.

9 Model evaluation

In this final chapter of the executionary phase, the model will be evaluated by looking at the different aspects of the model and the input that was gathered on these aspects through the formal interviews with the NZa interviewee and the three ZN interviewees. All interviewees have given their personal opinions and insights during the interviews, the ones from ZN and the NZa are each described as <organization interviewee> but do not specifically represent the opinion of that organization. The model roughly consists out of three parts, the part concerning material costs, the part concerning personnel costs and the final part which allocates these costs to the different acts of care. As some of the input concerned the model as a whole, this chapter also includes a more general section.

The interviewees were shown the initial model to gather direct feedback, both on the model itself as well as the assumptions made in the model, the resulting graphs of the execution were not shown. As the feedback of the different interviewees sometimes conflict and other times align, the headings of each bit of feedback will contain a marker to show which interviewees have underwritten that particular bit of feedback, with a more detailed explanation following the heading.

9.1 Feedback concerning the material part of the model

Incorporation of the Normative Housing Component (NHC) and Normative Inventory Component (NIC) (NZa & ZN)

The NHC is an extremely complex component which is often made more complex by the usage for potentially unintended purposes by care-providers. The NZa interviewee indicated that even they struggled with this component in their cost price research and subsequently left the housing out of the equation and use a different model specifically for this component.

The first ZN interviewee underscored the importance of the NHC and NIC in tariff determination and expressed concerns on how they had been incorporated into the initial model. The NHC and NIC are determined in a normative manner, by not considering them separately in the model or not substantiating enough why they are incorporated into it there is a grave chance that it is simply not correct. As the NHC and NIC are already a sensitive subject it requires more attention in the model than it is currently given.

Not separating the NHC from material costs (NZa)

The NHC is a component of the tariff that is supposed to be used for real estate, it is separately determined from the tariffs with a different model and should technically not be part of the consideration of tariffs for care. However, it does occur that care-providers do not put this money to use as intended, often they do put it into the care they provide. Therefore, as put by the NZa interviewee, for the determination of the cost price of care it could well be justified to include, for example, housing costs. However, even the knowledgeable and experienced people consider this aspect as very complex, and while it might be justified, it should be further explored to make sure it is justified.

The influence of a “one off” purchases (ZN)

One of the ZN interviewees pointed out that the model is sensitive to special expenses by care-providers. Should a care-provider, for example, do a once in thirty year purchase the material costs will increase greatly, which in turn will eventually lead to a higher cost price per care act (‘prestatie’), while it is not representative of the regular cost of care.

The allocation of material costs over the different care laws (NZa)

In the initial model the material cost are entirely allocated to the Wlz through the means of a ratio. The accuracy of this method of allocation is somewhat questionable. The NZa requested the care-providers themselves to indicate which costs are tied to each care law, as they are the ones with the most insight in their own spending. Should they not be able to do so, then a ratio or a similar general method can be used to allocate these costs.

9.2 Feedback concerning the personnel part of the model

The use of the 'kwaliteitskader' for personnel costs makes these cost normative in nature (ZN)
The 'kwaliteitskader' dictates certain standards for nursing care, including standards for personnel and the associated costs. One of the ZN interviewees pointed out that by using the data from the 'kwaliteitbudget' to determine the personnel costs implicitly applies these normative standards to these costs. This part of the initial model is therefore not as inventorying as it might seem at face-value. The interviewee considered this to be positive, as normative aspects are currently desired in tariff determination.

Implicitly applying the assumptions from the 'kwaliteitskader' on the unknown personnel costs (ZN)
By taking the personnel costs from the 'kwaliteitsbudget' as a base to determine the remainder of the personnel costs implies that the same assumptions also apply to the acts of care ('prestaties') outside the 'kwaliteitskader'. It should be further explored whether that assumption is valid.

The use of the 'kwalitetiskader' for personnel costs (NZa)
As the initial model is currently only considering the nursing care, the use of the data from the 'kwaliteitskader' is quite reasonable, according to the NZa interviewee.

9.3 Feedback concerning the allocation of costs to the specific acts of care part of the model

Assumption that the NZa tariff depicts a good ratio between 'prestaties' (NZa)
With this assumption the difficult task of assigning portions of costs to each 'prestatie' is avoided, as it uses the findings of the NZa cost price research. The NZa interviewee considered this assumption to be legitimate.

Specifying to the level of 'prestatiecode'
In the system the Wlz currently has, it makes sense to specify to the level of individual care acts ('prestaties'), it is after all what the system is based on. However in the practical sense it might not be all that valuable to do so as pointed out by one of the ZN interviewees. From personal experience he described that in some cases clients with different care needs, for example a VV4, VV5 and VV7 would be cared for by the same department/team. It might then be questionable in a practical sense whether specifying to the individual acts of care ('prestaties') is desirable.

9.4 General feedback on the model

Using data that are a result of existing tariffs (ZN)
One of the ZN interviewees mentioned that the financial statements are basically directly influenced by the tariffs the care-providers get. In a sense the input in the model is going to be a direct result of the output.

Added value once (if) the 'integrale vergelijking' is accomplished (ZN)
As noted by one of the ZN interviewees, there are common goals within the 'integrale vergelijking' and the initial model. Should the 'integrale vergelijking' be realized, then the added value of the initial model for nursing care might become questionable. However the realization of the 'integrale vergelijking' has been questioned by multiple interviewees, both formal, informal and even the interviewee who, rightfully, made this remark.

The use of historic data (ZN)
On both occasions of the ZN interviews the use of historical data came-up as a consideration to take into account, as it is an often heard concern of care-providers. They fear that data from the past is not representative enough for the future. It would be considered wise to look into how one can get to a correct tariff on the basis of past data.

The use as a tool in conversations with care-providers (ZN)
The ZN interviewees figured a good use of the model would be to gain insights that can be used in the conversations with the care-provers. The model would be a (potentially powerful) tool for the purchasers that support these conversations and a tool for the Zorgkantoren to help (partially) substantiate their tariffs. The actual tariff a care-provider gets would however still be mostly determined in consultation with all involved parties, basing the tariff solely on a model is undesirable.

The differences with the NZa research results (NZa)
As seen in the results of the initial model, the cost prices for each act of care ('prestatie') does not lie equally far from the NZa tariffs, the V-codes in the first graph for example lay further below the NZa tariff than the Z-codes. The NZa interviewee urged to investigate these discrepancies closely in an effort to explain them, both for better understanding and improvement of the model as well as for making the model more "court proof" as these kind of questions are bound to be asked by care-providers.

9.5 Evaluation based on the feedback

While there are quite a few significant weak points to the initial model, the interviewees also saw the potential it holds. The material part of the model has the most and the most severe critique, ranging from the complex NHC and NIC to a relative simple notion that the model is sensitive to unusual purchases. This part of the model will need to be prioritized to align it with the rest of the model, to then be further refined overall. It may proof to become a powerful tool in discussions with the care-providers, be it for tariff determination or as a support tool for the purchasers. In table five the evaluation of each part of the model is summarized.

Model part	Evaluation
Material	*Weakest link of the model*. This part is sensitive to irregular purchases by care-providers, is questionable in its accuracy in allocating the material costs to the different care laws and its major flaw is not paying more attention to the complex and sensitive topic of the NHC and NIC.
Personnel	*Surprisingly positive with some sidenotes*. The use of the 'kwaliteitskader' implicitly introduces a normative aspect to the personnel costs, which is a desired aspect in tariff determination. However it also implies that the assumptions and expectations that hold true for the 'kwaliteitskader' are also applied to the acts of care outside of it, of which it is questionable if it is justified.
Allocation	*Appropriate for the current system but questionable from a practical point of view*. By using the ratios as determined by the NZa tariffs a difficult and non-appropriate task for the Zorgkantoor has been avoided. While it suits the current system, in practice the differences between the different acts of care and care-profiles might not be as clear cut as suggested.
General	*It has potential but needs more work and consideration*. Seen as a potential powerful tool for both Zorgkantoren and their purchasers, it might be made obsolete should the tariff determination part of the 'integrale vergelijking' ever be realized. As with all tariff determination projects it faces the issue of having to use, the twisted over, historic data, which is nothing more than a direct results of current/past tariffs.

Table 5 Evaluation of the initial model based on feedback gathered in formal interviews, split to each component

The feedback provided insight in the initial model, in its strengths and its shortcomings. In chapter eleven the requirements as formulated in chapter six will be consulted to see in how far the initial model already satisfies the requirements. However before any conclusions are drawn the auxiliary chapter will discuss themes (closely) related to the model.

10 Insights gathered on auxiliary themes & topics

In this auxiliary chapter the focus will be on the input gathered that was not directly applicable to the initial model itself, but which does have influence on the model, the context it resides in and its further development. This input was gathered in both a formal an informal setting in the form of interviews, meetings, presentations and experience. All interviewees have given their personal opinions and insights during the interviews, the ones from the branch-organization of health insurers (ZN) and the Dutch Healthcare Authority (NZa) are each described as <organization interviewee> but do not specifically represent the opinion of that organization. The expert in the optimization of healthcare processes, will be simply described in this chapter as “the expert”.

10.1 The role of the Zorgkantoor

In the formal interviews an often recurring topic was the role of the Zorgkantoren in tariff determination, how the Zorgkantoren should fulfil this role and how this role develops.

The views as to what the duties and purpose of a Zorgkantoor are differ quite a bit. From the perspective of the expert a more practical image arises. Were the Zorgkantoor primarily has an operational function with addition of some tactical and strategic aspects and were the execution of the long-term care act (Wlz), within the limits of that law, is their main purpose. This entails administration, client contact/service and execution of the purchasing policies on an operational level, the contracting of care-providers on a tactical level and lobbying for changes/improvements at a strategic level. The tariff determination is viewed as an aspect which is beyond the direct influence of the Zorgkantoor, but has to be lobbied for at the Dutch Healthcare Authority (NZa) to make changes. The power and ability of Zorgkantoren to fulfil their tasks properly is considered questionable and generally the execution of the long-term care act (Wlz) seems to be lacking in comparison to the Health Insurance Act (Zvw).

The NZa interviewee has a different outlook on the role of the Zorgkantoren and subsequently the influence of the Dutch Healthcare Authority (NZa) in this role. Their role, as they see is, is primarily to formulate a cost covering general tariff and support the Zorgkantoren in their endeavours to fine tune the tariffs to their respective regions. Especially the transition from a standard discount on the NZa tariff to a differentiated tariff based on quality and care-mix is encouraged by the Dutch Healthcare Authority (NZa), as the Zorgkantoren have the most knowledge of their respective regions and clients. They acknowledge that it is a complex task, as care-providers might oppose such differentiation when not properly substantiated and substantiating a tariff has many tricky aspects to it, but the Dutch Healthcare Authority (NZa) considers it the right role for the Zorgkantoren.

The ZN interviewees all agree to a certain extent with the view of the NZa interviewee. They all consider differentiation an important and desired role for a Zorgkantoor in tariff determination. It is a tool for the Zorgkantoren to incorporate stimuli for quality and efficiency and aids in the goal of using the public funds in the most optimal manner. However, somewhat in line with the perspective of the expert in the optimization of healthcare processes, there are concerns that this role does not quite fit the overall system of the long-term care act (Wlz). As one of the ZN interviewees put it; “*Ik ken eigenlijk geen inkooporganisatie die moet onderhandelen over tarieven en die niet verantwoordelijk is voor zijn budget*.” There are very limited situations one can think of were the purchasing party is not responsible for their own budget. In addition to that comes the notion that the Wlz market is not a traditional one, the amount of Wlz care-providers is very limited creating the situation where Zorgkantoren basically cannot choose to not contract a care-provider without risking the failure of their duty to provide care. They have to contract all care-providers, whom meet the requirements. The Zorgkantoren do not have the power to alter this situation as that would require (significant) investments in capacity and they do not have that kind of control over their budget to do so.

The structure of the long-term care act (Wlz) as a system limits the Zorgkantoren in their effort to fulfil the role The NZa and ZN interviewees see in differentiating the tariff. However, while in some ways the workings of a Zorgkantoor are being limited in others there is need for some more guidance and support from that very system. As another ZN interviewee pointed out, the tariff determination discussion has caused friction among Zorgkantoren and their care-providers, more clarity and direction from the overarching organizations (NZa, VWS, etc.) would be helpful in making the discussions with the care-providers less intense.

10.2 Efficiency

The interview with the expert was specifically undertaken to delve deeper into the possibilities of incorporating the subject of efficiency into tariff determination. The proposed manner was deviant from the initial expectations, as it proposed an completely different structure for some 'prestaties' to come to an end-tariff. The proposed idea is as followed: There are 'prestaties' that include treatment and those that do not, instead of paying a lump-sum tariff for the 'prestatie' including treatment the Zorgkantoor would always pay the one without treatment and for every bit of treatment the care-provider delivers to a client a separate 'prestatiecode' would be used to a maximum of the tariff for the 'prestatie' including treatment. This could improve efficiency in several ways, first of all this would ensure that only care that is actually given is paid for, which currently is questionable with the lump-sum construction. Secondly it would force the care-providers to keep a better administration which increases the insight in spending for both the care-provider themselves and the Zorgkantoor. And thirdly the care for the clients might improve as the care-providers might be more inclined to deliver more care.

An assumption in this idea is that if one takes the 'prestatie' with treatment and subtracts the 'prestatie' without treatment, you are left with the cost of treatment. Intuitively and logically this assumption seems to be correct. However, as the NZa interviewee pointed out, there is a catch. The tariffs of these 'prestaties' are determined based on the cost price research of the NZa (KPMG, 2018), in this research each tariff is basically determined independently from the others and are thus not useable in such a manner. Had the NZa determined the tariffs of 'prestaties' in a normative manner, then it would likely be possible to relate the 'prestatie' with and without treatment to one another.

The NZa interviewee instead argued that efficiency is already incorporated, in a manner of speaking, into the tariffs. As mentioned earlier the tariffs are based on cost price research by the NZa (KPMG, 2018), were the weighted average is the basis. By using a (weighed) average the cost-effective and the cost-intensive care-providers are already weighed against one another with the eventual tariff being somewhere in between, forcing/enticing the care-providers to be more efficient to increase their margin.

Additionally an important aspect, according to the NZa interviewee, is to remain vigilant on the balance between quality and efficiency. Efficiency is a major topic but it should not become a race to the bottom. Moreover, a cost-intensive care-provider is not necessarily inefficient and vice versa. Elements as, the aforementioned, quality and care-mix greatly impact costs. The 'integrale vergelijking' is an (upcoming) initiative were similar care-providers get compared and where the exemplary providers will form the basis of the tariff.

10.3 The ratio between acts of care ('prestatiecodes')

The assumption that the NZa maximum tariffs are a good measure for the ratio between acts of care ('Wlz prestatiecodes') is considered questionable amongst purchasers. Some acts of care ('prestaties') are easier to earn a profit on than others and in some cases the NZa maximum tariff supposedly is not enough to cover the costs. This is also why care-provider sometimes have preferences for one type of client over the other, as also mentioned in the discussion in chapter four on budget and cost price.

This is an interesting challenge, as the Zorgkantoren always offer a percentage of the NZa maximum as a tariff to the care-providers. So no matter how you determine that percentage it will always have the same underlying ratio between acts of care ('prestatiecodes'). The ratio between acts of care ('prestatiecodes') is then not so much a problem for the Zorgkantoren but rather the Dutch Healthcare Authority (NZa). The Zorgkantoren could however support the care-providers in their claim that certain acts of care ('prestaties') are not compensated enough through the use of the cost-price model. If, for a specific act of care ('prestatie'), a majority of the care-providers endure a cost-price above the NZa maximum without a reasonable explanation, it could be used to indicate and argue that this is indeed an act of care ('prestatie') that is undervalued. Vice versa, if the majority lies far below the NZa maximum it could also be reasoned that an act of care ('prestatie') is overvalued.

This observation by the purchasers might not necessarily alter the model itself, but does offer insight in different uses of the model beyond just determining a tariff. Another topic that can be explored during further development and future iterations.

10.4 Inventorying vs normative

The NZa cost price research has an inventorying nature, as also confirmed by the NZa interviewee. This was a conscious choice, as a more normative approach could limit the autonomy of the care-providers in the definition of quality care and would have been an enormous task to properly design a normative framework. There are some normative aspects to the cost price research of 2018, especially for acts of care (‘prestaties’) that posed a challenge. The interviewee indicated that, even though somethings might be done differently in future iterations, he considers the research of 2018 to be diligent, to have delivered good results and that it is a project to be looked back on with satisfaction.

The ZN ‘richttarief’ (a starting tariff of sorts) on the other hand focusses on the normative side of tariff determination. Instead of looking at the costs incurred by care-providers, ZN looks at the total profit the care-provider makes. The tariff at which 75% of the Wlz care-providers make either a profit or break-even is chosen as the ‘richttarief’ (ZN, 2021a). One of the ZN interviewees indicated this was done as a stimulus of effectiveness for care-providers and that in special cases care-providers can get an altered tariff, hence the ‘richttarief’. They pursued this model in favour of two others, as one would be too similar to the research done by the NZa and the other was a difficult to execute middle-of-the-road solution.

The ZN ‘richttarief’, contrary to the NZa maximum tariff, is based on totals and not specified to the specific acts of care (‘prestatiecodes’). It would be helpful for the Zorgkantoren to have a tariff per act of care (‘prestatiecode’) with a normative element to it on which they can deviate according to regional discussions. Whether that tariff should come from the NZa or the Zorgkantoren themselves can be argued about according to the ZN interviewee, either way the normative substantiation is currently extremely difficult for both and both will face the consequences, likely a lawsuit, when they do opt for determining it in a normative manner and it is perceived as flawed by the care-providers.

The general sense from the interviews, both formal and informal, is that normative determination probably yields the most desired results on the facet of stimulating effective use of funds, but is too complex to do so properly without having to defend it vigorously from all sides as resistance from the care-providers is substantial. The inventorying determination in that sense is, somewhat, easier to implement but meets resistance on the other side of the spectrum as it is complex as to how to incorporate the effective use of funds. Both perspectives have their challenges and in an ideal world both would technically work, at this point in time it is seemingly a matter of exploring, testing and finding common ground with all parties involved to see which approach will take the high ground.

10.5 The use of historical data

A lot of the people whom provided information and feedback raised the concern of the use of historical data, as it apparently is an often heard objection among care-providers on the current and future methods of tariff determination. Using data from years gone by is not representative for the current year or the years to come according to care-providers. And thus it would also not be fair to use this data in the determination of tariffs. As mentioned this concern came up several times on different occasions. Some might argue the use of historic data is needed, as it is the only accountant approved data on costs and revenue, others might propose that care-providers should fill in a yearly data request instead. This could form an interesting topic in follow up research.

10.6 Profit margins

It is common when determining a tariff based on cost price to also include a mark-up for profit (Tung et al., 1997), this profit would be used to cover risks and can be used to reinvest. As the Wlz concerns public money the profit margin is somewhat of a discussion point. The NZa interviewee indicated that Wlz care-providers do not face much risks and thus do not necessarily need a predetermined profit margin.

Two of the ZN interviewees agree that, in the context of the aims of the current system, a profit margin would be questionable to an extent as the traditional risks are practically non-existent and the care-providers officially do not have a profit motive. They also concur that there are currently care-providers that do make a profit on Wlz care. On the other hand care-providers do also need reserves to satisfy financers and innovate among others. In that sense it should not as much be seen as a profit margin but as a financial reserve for the future. Both interviewees thought it wise to include such a margin when considering the tariffs, with the exact hight of that margin being up for debate taking into account the public opinion.

10.7 Data

The data used in the initial model has a couple of drawbacks limiting the aim for the model to be as accurate as possible. For instance the declaration data limits the use of the model to care-providers which operate only within the boundaries of the specific Zorgkantoor. If a care-provider also has locations in a region associated with a different Zorgkantoor the data is incomplete, causing the total costs per act of care (‘prestatiecode’) to be divided by a number of declarations which is too small and thus unjustly increasing the cost price. As mentioned in section 8.1 both quantity and quality of data can increase the accuracy of the model, in this particular case the quantity of data is a hurdle. If the number of declarations per act of care (‘prestatiecode’) for the entire care-provider would be known, the care-providers that span across regions could be included in the model.

Vektis

In the interview with the expert in the optimization of healthcare processes, Vektis was named as a possible data source of importance. Vektis is an organization which concerns itself with care related data, insights from this data and administrative processes. They nationally collect data on all care-declarations in the Netherlands (Vektis, 2021b). Some of the data is openly accessible, however this is only the case for ZVW care, not Wlz care (Vektis, 2021a). Additionally considering that declaration data is considered to be sensitive information, a Zorgkantoor might not be allowed to request the specific data from Vektis to run the model themselves. They could, however ask Vektis to run the model and only return the results to the Zorgkantoor to get around the issue of sensitive data.

Data request care-providers

In the NZa interview the single most important source of data mentioned were the care-providers themselves. They provided the NZa with the necessary data and insights for their cost price research in 2018. To collect this data however, caution is needed especially as a Zorgkantoor. The care-providers are easily scared into thinking the goal is to cut down tariffs or categorize the care-providers. To counteract these fears it is important to create clarity on why certain data is needed, how it is going to be used and what the goal of the data collection is. The interviewee emphasized that this clarity will be of critical importance when directly collecting data from care-providers.

The ’Integrale vergelijking’

One of the ZN interviewees noted that the ‘integrale vergelijking’ could potentially generate interesting data which could feed the model. The ‘integrale vergelijking’ is a proposed, still in development, new funding model for the Wlz nursing care, this new model should aid in keeping the care sustainable (NZa, 2021b).

10.8 Literature

A lot of the literature concerning the Wlz, which is a limited pool in itself as it is a niche subject as noted by one of the ZN interviewees, is rather difficult to find. Each person, with each their own expertise in this field, usually is familiar with the corresponding papers, reports, policies, etc., Each interviewee was asked about what they considered to be essential reading, formal or informal in nature, on this subject for future reference.

TNO report on NHC/NIC

As recommended by one of the ZN interviewees, the TNO report and potentially a recalibration of the results of that report could prove insightful into the complex nature of the NHC and NIC components. Which is, based on the general feel from all formal and informal interviews, currently one of the most complex and sensitive subjects in the Wlz.

Intrakoop reports

Recommended by the same ZN interviewee as the TNO report. The intrakoop reports were used in the determination of the ZN target tariff, were they were used to gain insight in how many organizations make a profit or break-even in other sectors. The reports themselves in general give insight in the financial developments in various sectors.

The (prerequisites of the) ' integrale vergelijking'

Recommended by one of the ZN interviewees, as there are similarities in the underlying ideas between the 'integrale vergelijking' and the intent of the initial model, is the documentation concerning the 'integrale vergelijking'. Both the documentation on the project itself as well as the documents, articles and research they drew inspiration from, for example the foundation of the 'integrale vergelijking', the peers subject, comes from a Scandinavian study.

NZa policy concerning tariff-principles

Recommended by the NZa interviewee, this document provides an overview of, and explains the principles that the NZa keeps in mind in their tariff determination methods. Apart from it being relevant this is also a very contemporary recommendation as the policy for tariff principles includes the Wlz since the most recent iteration of May 2021 (NZa, 2021a).

The NZa cost price research

Although already deeply ingrained in this project the importance of this research was abundantly mentioned as essential literature. It is generally seen by the majority of interviewees, formal and informal, as the one main source that is truly essential and most relevant, it should not only form the basis to build upon, but should also be used in comparing and validating models. Basically, in case of doubt, return to this report.

The Talma Institute

Recommended by the expert as the institute researches, among others, health insurers and care procurement. The Talma institute does not solely focus on a specific care law, as is sometimes seen in other cases, long-term care is represented in their publications (Talma instituut, 2021). Therefore it is an interesting platform to keep in mind.

10.9 Execution

Once the conceptual model of the initial cost price model was made, it needed to be translated to Microsoft Excel, as this was one of the limitations of the initial model as listed in 8.2. While it is possible to execute this model in Excel and many refinements can still be made in this execution, it was obvious during the making of the Excel execution that it might not be the optimal program to do so. Long processing/calculating periods, complex formulas, a plethora of different tabs and the inability to easily apply certain calculations and corresponding visualisations to all or specific care-providers is making the execution of the model rather cumbersome. Good enough to proof a concept, lacking if put to use.

An alternative that has been named by the Analysis Team is for example SQL, which directly queries from a data warehouse and which is more efficient in dealing with long calculations. Also visualisation tools as Microsoft PowerBI and SAS could be used to efficiently provide people with the graphic representations of the results. Regardless of which application is used, if the computing power could be drawn from a server instead of a regular laptop it could also significantly help in decreasing the processing time.

11 Conclusions

This research, as mentioned in the first chapter, set out to achieve the following; to provide a basis for a substantiated methodology to determine a long-term care base tariff for Dutch healthcare which can be put to use by Zorgkantoren and to further fuel the discussion on what constitutes a reasonable tariff in Dutch long-term care. The research question flowing from these aims was as followed: '*What is a proper method for a Zorgkantoor to determine a substantiated base-tariff at which Wlz care can be contracted?*'. As discussed in the methodology chapter, for this research only the initial iteration of the model is taken into account, further iterations are beyond the scope of this research. In this first chapter of the resultative phase the initial model will be reflected upon mainly by using the requirements as set in chapter six. Do the results achieve what was aimed for, perhaps does it achieve things beyond the requirements and which conclusions can be drawn from this. The conclusions can be found on this page, the assessment based on the requirements, to which the first conclusion refers, on the next.

The proposed model can be used to determine a substantiated base-tariff, but the initial model must be further refined before putting it to use

The initial model's main task was to proof that the general concept of the model was correct, usable and worthy of further development, while flawed in some ways as pointed out in the formal interviews the general concept was received with enthusiasm, abundantly so by the commissioner of this research. The model can be used to substantiate a tariff depending on the wishes of the Zorgkantoor it can do so on different levels; with the outcomes a general base-tariff could be formulated, a base-tariff could be formulated for a specific group of care-providers and one could even opt to formulate a specific tariff for individual care-providers.

In chapter six the requirements for the cost price model and the boundaries in which the initial model should be formulated were defined. While the main requirements of court feasibility, care-provider acceptance and Zorgkantoor workability would apply to a finished model rather than the initial model which starts off the development/improvement cycle, the initial model can be assessed using these requirements. Table six lists the requirements again with a judgement on how far the requirement is met and an explanation to substantiate the judgement. This assessment shows the potential of the initial model but also highlights the fact it is still the first iteration. It also makes it very clear that the lack of care-provider input sticks out like a sore thumb. Sadly, there has not been the opportunity to show the model to care-providers.

As illustrated by the assessment in table six and the feedback gathered from the formal interviews, there is much room for refinement in the initial model. Especially the subjects that are already considered sensitive by care-providers and are also topics of difficult discussions in other tariff related projects require attention. These are the subjects that will most easily trigger a challenge from care-providers. It was foreseen that the first iteration of the model would probably not suffice, therefore the improvement cycle methodology was highlighted in the methodology chapter. The recommendations from the next chapter will serve as the starting point from which the next iteration can be made.

The proposed model can be used for further analyses to benefit purchasers

Not the initial intent when starting with the research but a component that became more apparent as the project progressed. Once the initial model began taking shape it became clear that the outcome could also be used in analyses that go beyond just the calculation of a general base-tariff. With the execution of the initial model in Excel and the resulting outcomes provided a visualization of the data created by the model made that idea tangible. The model can give insight in each act of care ('prestatiecode') and each care-provider and can be used to make several types of comparisons between the different entities. Additionally these result can then be used for even further analyses.

Requirement	Judgement	Explanation
Court feasibility	***Questionable***	***While the initial model forms a substantiation which is significantly more than the substantiation of the tariff that was challenged in court, it still has several weaknesses and points of further discussion and exploration***
Reproduceable	Achieved	The model uses data which is easily accessible by the Zorgkantoor and which is stored for several years, additionally the model has been executed and is well documented. All elements are there should it be reproduced.
Reasonable	Questionable	Remains difficult to assess, as care-providers were not consulted and the exact definition of the term 'reasonable' remains disputable within the field. However, as this model provides a significantly more substantiated tariff than the one that was overruled by the judge, it is a step in the right direction
Representative	Questionable	The model was executed with an as large as the limitations allowed sample group, in how far this group is representative of the rest of the population has not (yet) been assessed.
Care-provider acceptance	***Undetermined***	***While some requirements in this category give a positive image, the care-providers themselves have not been consulted in this research, which would be key in determining their level of acceptance***
Explainability	Achieved	The model has proven to be easily explained in multiple interviews and company presentations
Administrative burden	Achieved	In its current form the care-providers do not gain any administrative tasks (or other tasks for that matter)
Accuracy	Questionable	The evaluation of the model exposed plenty of (potential) flaws and doubts, mainly in the part focussed on material costs. Its accuracy has been questioned and needs further investigation.
Communication	Failed	It was intended to consult and involve care-providers in this research, however this proved more difficult than expected and subsequently no care-provider was consulted
Workability for Zorgkantoren	***Questionable***	***The model is currently workable, but not (yet) ideal for regular use, it needs a more refined way of showing its results to the end-user***
Complexity	Achieved	The model is fit for execution within the existing IT-infrastructure of the Menzis Zorgkantoor
User-friendliness	Failed	In its current the state the excel execution of the model is cumbersome, ramshackle and not easily usable for people not properly introduced to it
Administrative burden	Achieved	The use of the initial model does not bring any noteworthy administrative work, other than feeding it with the most recent data (yearly basis)
Initial model limitations	***Achieved***	***A working model was created within the set boundaries***
Use of readily available data	Achieved	The model uses data which does not require any action by the Zorgkantoor to gain access to it
Focus on nursing care	Achieved	The model is specific to nursing care, to such an extent that it cannot be deployed for the other types of care
Execution in MS Excel	Achieved	The execution of the initial model indeed has taken shape in Microsoft Excel

Table 6 Assessment of the initial model based on the model requirements

12 Recommendations

12.1 Recommendations for refinement of the initial model

The evaluation of NHC and NIC

The subject of most concern, judging by the formal and informal feedback on the initial model, are the NHC and NIC which are currently not specifically considered in the model. They are considered extremely complex to properly take into account in tariff determination, as underscored by the NZa interviewee. Not only due to the complexity of these components themselves, but also due to the manner in which care-providers put them to use, which is not always in the manner they are intended for. The incorporation of the NHC and NIC need to be revaluated. As the NZa interviewee made known that they would be interested in keeping in contact over this project, this might prove to be an interesting subject to spar over and seek their guidance.

Making the model applicable to care-providers who operate in several regions through Vektis

Currently the initial model can only be applied to care-providers whom operate exclusively in the region of the Zorgkantoor in question. The reason for this limitation is the simple fact that Zorgkantoren do not have insight in each other's declaration data. Vektis does have the necessary data and might be able to provide the Zorgkantoren with this data in a form that would not cause issues, the model itself would technically only need the total amount of declarations on a 'prestatiecode' per care-provider, not necessarily the turnover associated with those declarations. If Vektis is not able to provide the data, they might be able to run the model themselves with the desired data and share the results with the Zorgkantoren.

Assumption check for personnel costs outside of the 'kwaliteitskader'

By using the 'kwaliteitskader' data as the basis for the personnel costs, the normative component, which was pointed out by one of the ZN interviewees, in the known personnel costs is also applied to the 'prestatiecodes' which are not naturally in the 'kwaliteitskader'. It should be checked whether this normative concept can be justly applied to these other 'prestatiecodes'.

Allocation of material costs

Currently the material costs are allocated to the Wlz by the means of a ratio based on the turnover a care-provider makes. While most people who were shown the model did not specifically mind, the NZa interviewee made a fair point by pointing out that the care-providers themselves should be capable of allocating those cost to the Wlz with a higher accuracy. Also taking into account that the allocation of the material costs is seemingly less refined than the personnel costs, makes that the method of allocating the material costs should be re-evaluated.

Influence of 'one off' purchases

As pointed out by one of the ZN interviewees the model is sensitive to sudden high expenses which are non-recurring. They could significantly increase the resulting determined cost price for a care-provider while that should not be the case. This effect needs to be counteracted or compensated for.

12.2 Recommendations for further development of the initial model

Expanding the model to include GGZ and GZ

Currently the initial model is only applicable to nursing care, which is only one of the three types of care encompassed by the Wlz. Mental healthcare (ggz) and disabled care (gz) are not yet taken into account. To include these two types of care the model would have to change significantly concerning the personnel costs as the 'kwaliteitskader' data is non-existent for these types of care. Also the alternatives for the 'kwaliteitskader' data mentioned by different people like the KIK-V initiative or the 'integrale vergelijking' are focussed on nursing care (for the foreseeable future). The personnel costs will pose the biggest challenge in adapting the model to the ggz and gz.

Validation by an accountant or research/consultancy institute

Once the model had reached a point in the improvement cycle were it passes the judgement of the Zorgkantoor it should preferable be validated by an external party, this could either be an accountant or a research/consultancy firm, for example Gupta whom also assisted ZN in the formulation and validation of their 'richttarief'. This validation would be to test whether the model is technically correct.

A check on court feasibility by the legal team

In addition to a validation by an accountant to see whether the model is technically correct, it should also be checked by a legal team on whether the method will hold up in court once challenged by a care-provider. In addition, an extra check on legal technicalities would also be desirable, for example the legitimate use of data. The data from the 'kwaliteitskader' was not initially gathered with the purpose of using it in tariff determination, it is however used as such by the model.

Creation of a dashboard to comprehensively show results

Currently the only execution of the model consists out of a ramshackle Excel file which can deliver the desired visualized results after a cumbersome process. For the model to be properly put to use a dashboard showing the desired visualizations with the ability to filter them according to the needs of the end-user would be preferable.

12.3 Recommendations for further research

The budget perspective

In the beginning of this research a major discussion was held on how to approach the issue of tariff determination, as seen in chapter four. Eventually the cost price perspective was chosen mainly based on legal feasibility. Even though the budget perspective might not be ideal for now, as there is need for a tariff determination method by 2023, it perhaps deserves more consideration for the future. Afterall the number of people in need of long-term care is expected to grow and to require more complicated care and costs are expected to grow significantly. The budget perspective should be researched even if it is just to come to an conclusion that it will not work, for other arguments than; it is not the norm, thus it will not work.

Customer value as basis for tariff determination

As described in chapter five, an alternative for cost based pricing that is applicable to the Wlz context is the pricing based on customer value. Which is actually quite a relevant topic in (long-term) care as the client comes more into focus in recent years and effective care is a common topic of conversation. The complex nature of defining and quantifying customer value however, especially in a healthcare setting, warrants further research for potential future application in tariff determination.

Alternatives for historic data

A major point of concern, often heard across the field from care-providers, is that tariff determination methods uses historic data which might not be representative of current circumstances. This poses a difficult problem as most data like the financial statements and personnel costs from the 'kwaliteitskader' are usually not totally complete until approximately six months into the following year. By the time the data is fully available it is practically by definition not current anymore. It would be interesting to research the alternatives for historical data to feed the model and the feasibility of those potential alternatives.

The developments of the 'integrale vergelijking'

Not so much research as well as keeping an eye out for progression in this project. As mentioned by one of the ZN interviewees the goals of the 'integrale vergelijking' partially overlap with the goals of the initial model and the data gathered for the 'integrale vergelijking', whether it gets realized or not, could be used to feed the model. This becomes increasingly interesting should that project be extended to include mental healthcare (ggz) and/or the disabled care (gz). Apart from the potential possibility to use the data generated by it, the research which forms the base of/is done for the 'integrale vergelijking' can be of use for the initial model. It is important to keep in touch with the progress to prevent the 'reinvention of the wheel' and to capitalize on new findings.

13 Discussion

There is a need and a desire for a tariff determination method in the Wlz, however there are also still a lot of questions and considerations concerning several elements of such a model. The implementation of the model, the data used for filling the model and the acceptance of the model are some of those elements. In this section a few discussion points are highlighted, both discussions points in a general sense as well as directly related to the execution of this research.

Deployment of the model; creating acceptance or preparing for confrontation

The direct cause for the question what a substantiated/reasonable Wlz tariff is, was the court ruling from October 2020 were care-providers challenged the tariffs and won. This prompted the Zorgkantoren into substantiating their tariffs, some taking their own path, others joining in on the ZN 'richttarief'. Now with a couple of options to substantiate the tariffs taking shape the question arises; do the involved parties see this as a step towards the middle ground or as taking up arms. There is a lot of mistrust, annoyance and suspicion between the involved parties on one hand and common goals, desire for cooperation and a certain willingness on the other. Both the Zorgkantoren and the care-providers need to evaluate and discuss amongst themselves which attitude they will bring to the table.

Faulty data sources

During the execution of the model in Excel the occasional error in the source data was noticed, missing identifying numbers for care-providers and a miscalculation that caused the total declarations of a particular 'prestatiecode' to exceed the entire national Wlz budget come to mind. While these mistakes were taken out in the testing of the model and the source data was checked for other mistakes, there is a potential for mistakes to have been overlooked and to occur in the source data in the future. Remaining vigilant on these kind of mistakes will be crucial as long as some of the source data consists out of hand-made excel files.

The lack of care-provider input

Sorely missing from this research is the input of care-providers. While it was initially planned to include them in the interviews, it was eventually advised against it due to the interviews discussing potential future policy of the Zorgkantoor and were subsequently scrapped. This entails that the entire perspective of "the other side" is missing, the side that is subject to the model and the side that is most likely to bring consequences should the model not receive their approval. This makes the research as it lays before you quite possibly one-sided.

Profit

Touched upon in the research, but not (yet) incorporated in the model is a potential profit margin. While common practice to include a percentage based profit margin in cost based pricing (Tung et al., 1997), the necessity of one for the Wlz is debatable. On one hand is the risk a Wlz care-provider poses neglectable, on the other they will need reserves for, among others, innovations. The NZa did not take a profit margin into account in their research (KPMG, 2018), ZN made the overall result of care-providers the central focus in theirs (ZN, 2021a). If all involved parties could come to a consensus as to what a reasonable Wlz profit margin would be, then it could prevent hefty discissions with care-providers and would increase overall clarity in tariff determination.

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Appendix

A - Representativeness formula elements

B - Example search queries

C - TCA stages

D – Interview protocol expert in the optimization of healthcare processes

E – Interview protocol NZa

F – Interview protocol ZN #1

G – Interview protocol ZN #2

A – Representativeness formula elements

Representativeness formula from the NZa cost price research, for a more detailed explanation please refer to the KPMG report (KPMG, 2018, p. 16).

$$n \geq \frac{N * z^2 * p(1-p)}{z^2 * p(1-p) + (N-1) * F^2}$$

n – sample size

N – population

z – Z-score

F – margin of error

p – spread

B - Example search queries

Scopus			
Query (bold query is the starting point the subsequent queries are refinements)	**Number of results**	**Next step**	**# read list**
TITLE-ABS-KEY (pricing AND strategies)	16.906	Quotation marks	
TITLE-ABS-KEY ("pricing strategies")	5.743	Limit languages to either Dutch or English	
TITLE-ABS-KEY ("pricing strategies") AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "Dutch"))	5.376	Limit document type to article, book chapter and book	
TITLE-ABS-KEY ("pricing strategies") AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "Dutch")) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "bk"))	3.762	Limit to documents containing the keyword ”Pricing Strategy”	
TITLE-ABS-KEY ("pricing strategies") AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "Dutch")) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "bk")) AND (LIMIT-TO (EXACTKEYWORD , "Pricing Strategy"))	748	Limit subject area to ‘Business, Management and Accounting’, ‘Economics, Econometrics and Finance’	
TITLE-ABS-KEY ("pricing strategies") AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "Dutch")) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "bk")) AND (LIMIT-TO (EXACTKEYWORD , "Pricing Strategy")) AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ECON"))	354	Limit year range to documents pre 2000	
TITLE-ABS-KEY ("pricing strategies") AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "Dutch")) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "bk")) AND (LIMIT-TO (EXACTKEYWORD , "Pricing Strategy")) AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ECON")) AND (LIMIT-TO (PUBYEAR , 1999) OR LIMIT-TO (PUBYEAR , 1998) OR LIMIT-TO (PUBYEAR , 1997) OR LIMIT-TO (PUBYEAR , 1996) OR LIMIT-TO (PUBYEAR , 1995) OR LIMIT-TO (PUBYEAR , 1992) OR LIMIT-TO (PUBYEAR , 1991) OR LIMIT-TO (PUBYEAR , 1990) OR LIMIT-TO (PUBYEAR , 1984))	25	Manual selection - Assess title - Asses abstract	
Manual selection	2	Both were available, add to read list	+2
TITLE-ABS-KEY ("cost based pricing")	131	Limit document type to article, book chapter and book Limit languages to either Dutch or English Limit year range to documents after 2010	

TITLE-ABS-KEY ("cost based pricing") AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017) OR LIMIT-TO (PUBYEAR , 2016) OR LIMIT-TO (PUBYEAR , 2015) OR LIMIT-TO (PUBYEAR , 2014) OR LIMIT-TO (PUBYEAR , 2013) OR LIMIT-TO (PUBYEAR , 2012)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "bk")) AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "Dutch"))	42	Limit subject area to 'Business, Management and Accounting', 'Economics, Econometrics and Finance'	
TITLE-ABS-KEY ("cost based pricing") AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017) OR LIMIT-TO (PUBYEAR , 2016) OR LIMIT-TO (PUBYEAR , 2015) OR LIMIT-TO (PUBYEAR , 2014) OR LIMIT-TO (PUBYEAR , 2013) OR LIMIT-TO (PUBYEAR , 2012)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "bk")) AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "Dutch")) AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ECON"))	25	Manual selection - Assess title - Asses abstract	
Manual selection	4	Only 2 were accessible, add to read list	+2
Add papers found through other means	1	Add to read list and read the papers	+1
Read papers		Discard one Add one that was found through one of the papers Evaluate	-1 +1
Evaluate		Seemingly enough information combined with sources used previously in the thesis to write a 1 page section	
END			

C - TCA stages

This table was made for and used in an assignment for the course Qualitative research methods (2019-201700035-2B) the assignment was written by Wolterink, Sikkema, and Ankersmit (2020) the content of the table is based on the paper by Burnard (1991).

Table: stages in thematic content analysis (Burnard, 1991)

Stage	**Explanation**	**Stage**	**Explanation**
1	Performing interviews, taking notes and memos with options for categorization	8	Each transcript is coded according to the list of stage 7.
2	Reading and noting transcripts thoroughly to immerse in the data	9	Each coded section is cut out of a transcript
3	Write as many headings as necessary to describe content	10	All sections for the same code are put together
4	Groupe list of headings/categories in order to reduce the number	11	Selected respondents are asked for correctness of coding of their transcript (validity check)
5	New list of categories is checked to reduce similarities	12	all sections are filed together for direct referencing
6	Two colleagues are invited to individually generate their systems, which are compared to the initial	13	The researcher can start writing a commentary on each category or section
7	Re-read transcript with final list of categories to check if list is complete	14	Decide if and where to link commentary to literature. This can either be done separately or parallel.

E – Interview protocol Expert in the optimization of healthcare processes

Practicalities

- Duration: 30-60 minutes
- Language: Dutch or English, based on preference of interviewee

Preparation

- Send request/invitation to participate in the interview
- Plan the interview and the method of communication, preferably Teams, but dependant on interviewee
- Send informed consent form
- Test all potential software and hardware involved

Introduction

- Get acquainted
- Ask about earlier sent informed consent form
- Ask whether there are any question about their rights as interviewee or the interview itself
- Ask if they are okay with being recorded
- Start recording or alternatively prepare to properly take notes

Interview

Set-up: Semi-structured

Goal: Get insight in how efficiency/good performance can be stimulated through the manner in which the tariff is determined.

Sub-topics:

- Interviewees relation/experience with the Wlz
- The role of the Zorgkantoor in stimulating efficiency/performance
- The integration of efficiency in tariff determination
- Determination of norms

Questions:

- Wat zijn, vanuit uw professionele achtergrond, uw ervaringen met langdurige zorg?
    - Indien van toepassing, doorvragen op gerelateerde: onderzoeken, samenwerkingsverbanden en initiatieven.

- Welke rol zou het zorgkantoor moeten hebben in het stimuleren van efficiency?
    - Indien van toepassing, doorvragen op: waarom deze rol, uitvoering, autoriteit om de rol uit te voeren

- Hoe zou efficiency meegenomen kunnen worden in de tariefstelling?
    - Indien van toepassing, doorvragen op: uitvoering, meetbaarheid, belang(enverstrengeling) van de zorgaanbieder

- *Ter illustratie initieel model en/of NZa model laten zien voor volgende vraag*

    - Kostprijsonderzoek binnen de Wlz heeft een inventariserend karakter, hoe kijkt u daar tegen aan?
        - Indien van toepassing, doorvragen op: bezwaren, tegenmaatrelen, visie
        - Zouden er normen opgenomen moeten worden in het model, en zo ja welke?
            - Met welk doel; data controle, kostenbeheersing, overig
            - Hoe een dergelijke norm te stellen

    - Welke (andere) data bronnen zouden nuttig kunnen zijn voor dit onderzoek/model?
        - Indien van toepassing, doorvragen op: beschikbaarheid, kwaliteit

    - Wat beschouwd u als essentiële “literatuur” voor dit onderzoeksonderwerp?
        - Duidelijk maken dat hier de term “literatuur” in de breedste zin bedoeld word

<u>Ending</u>

- Ask if they have any remarks or questions they still want to ask both on topic or about the interview procedure
- If no longer on-topic then end recording
- Thank them for their participation

F – Interview protocol NZa

Practicalities

- Duration: 30-60 minutes
- Language: Dutch or English, based on preference of interviewee

Preparation

- Send request/invitation to participate in the interview
- Plan the interview and the method of communication, preferably Teams, but dependant on interviewee
- Send informed consent form
- Test all potential software and hardware involved

Introduction

- Get acquainted
- Ask about earlier sent informed consent form
- Ask whether there are any question about their rights as interviewee or the interview itself
- Ask if they are okay with being recorded
- Start recording or alternatively prepare to properly take notes

Interview

Set-up: Semi-structured

Goal(s): Get insight in the NZa perspective of tariff determination/cost price research and gather feedback on the initial model.

Sub-topics:

- Interviewees relation/experience with the Wlz tariff determination process of the NZa and their possible involvement in the cost price research of 2018
- General outlook on tariff determination/cost price research by the NZa
- The cost price research by the NZa
- The NZa view on the court ruling and tariff determination by Zorgkantoren
- Feedback on the initial model

Questions:

- Wat zijn uw ervaringen met tariefstelling in de langdurige zorg?
    - Indien van toepassing, doorvragen op: betrokkenheid bij kostprijsonderzoek 2018

- De NZa heeft in 2018 een kostprijsonderzoek uitgevoerd voor de Wlz, hoe kijkt de NZa hierop terug?
    - Indien van toepassing, doorvragen op: volgend onderzoek, moeilijkheden/uitdagingen in het onderzoek, wat hebben ze van het onderzoek geleerd (procesmatig/onderzoeksopzet, niet inhoudelijk)

- Hoe kijkt de NZa naar de tariefstelling door zorgkantoren?
    - Doorvragen op: Rechterlijke uitspraak, stelt de NZa eisen aan tariefstelling, moeten zorgkantoren überhaupt tarieven vast stellen.

- ZN heeft recent voor het inkoopkader ook een kostprijs onderzoek uitgevoerd, wat vind de NZa hiervan?
    - Indien van toepassing, doorvragen op: onverschilligheid, uitvoering, kwaliteit

- Zouden de zorgkantoren gebruik kunnen maken van het NZa model en gegevens op het niveau van hun eigen regio's?

- Kostprijsonderzoek binnen de Wlz heeft een inventariserend karakter, hoe kijkt u daar tegen aan?
    - Indien van toepassing, doorvragen op: bezwaren, tegenmaatrelen, visie
    - Zouden er normen opgenomen moeten worden in het model, en zo ja welke?
        - Met welk doel; data controle, kostenbeheersing, overig
        - Hoe een dergelijke norm te stellen

- Voor het onderzoek is ook een initieel kostprijsmodel opgezet, ik zou u hier graag gericht feedback op willen vragen.
  -show/explain initial model here-
    - Zijn er dingen die u direct al opvallen aan het model?
        - Waarom
    - Zijn de aannames legitiem?
        - Waarom niet, welk alternatief/suggestie voor verbetering
    - Ontbreken er nog kostprijs elementen/zijn er kostprijs elementen die apart genoemd moeten worden, die momenteel in een overlappend element zijn opgenomen?
        - Welke, waarom
    - Wanneer zou een dergelijk model representatief genoeg zijn voor een zorgkantoor om het als basis voor tariefstelling te gebruiken?
    - Wat is een reële winstmarge voor een aanbieder?
    - In hoeverre denkt u dat het model toekomst bestendig is?
    - Hoe zou het model bij aanbieders getoetst kunnen worden?
    - Wie zijn nog goeie partijen om input op te halen/te spreken?
    - Algemeen, waar moet rekening mee gehouden worden o.b.v. uw ervaring?

- Welke (andere) data bronnen zouden nuttig kunnen zijn voor dit onderzoek/model?
    - Indien van toepassing, doorvragen op: beschikbaarheid, kwaliteit

- Wat beschouwd u als essentiële "literatuur" voor dit onderzoeksonderwerp?
    - Duidelijk maken dat hier de term "literatuur" in de breedste zin bedoeld word

- Is het mogelijk om hier contact over te houden voor de lange termijn?

<u>Ending</u>

- Ask if they have any remarks or questions they still want to ask both on topic or about the interview procedure
- If no longer on-topic then end recording
- Thank them for their participation

G – Interview protocol ZN1

Practicalities

- Duration: 30-60 minutes
- Language: Dutch or English, based on preference of interviewee

Preparation

- Send request/invitation to participate in the interview
- Plan the interview and the method of communication, preferably Teams, but dependant on interviewee
- Send informed consent form
- Test all potential software and hardware involved

Introduction

- Get acquainted
- Ask about earlier sent informed consent form
- Ask whether there are any question about their rights as interviewee or the interview itself
- Ask if they are okay with being recorded
- Start recording or alternatively prepare to properly take notes

Interview

Set-up: Semi-structured

Goal(s): Get insight in the ZN perspective of tariff determination/cost price research and gather feedback on the initial model.

Sub-topics:

- Interviewees experience/involvement with the tariff determination/cost price research done by ZN for the national 'inkoopkader'
- The model behind the tariff percentage
- Design choices in tariff determination
- The ZN view on the court ruling and tariff determination by Zorgkantoren
- Feedback on the initial model

Questions:

- Hoe bent u betrokken geweest bij het vaststellen van het inkoopkader dit jaar?
    - Indien van toepassing, doorvragen op: betrokkenheid bij kostprijsonderzoek

- ZN heeft recent onderzoek gedaan naar tarieven binnen de Wlz, hoe ziet het model eruit wat er achter zit?
    - Welke elementen zijn in dit model meegenomen?
    - Hoe is ZN van het model naar de uitwerking op winstmarge gekomen?

- M.b.t. de toelichting op het onderzoek en het richttariefpercentage;
    - Waarom is er gekozen om te kijken naar de operationele winstmarge en niet naar een winstmarge specifiek uit de Wlz?
    - Waarom is het vereiste percentage WLz omzet 60%?
    - Waarom is er gekozen voor de norm dat 75% van de aanbieders zwarte cijfers moet hebben bij het richttarief?
    - Wordt met zzp-systematiek de prestatiecode structuur bedoeld?
    - Waarom wordt 100% van het NHC/NIC betaald buiten het richtpercentage om als de NZa jaarlijks corrigeert voor stijging van kosten inclusief huisvesting en inventaris?

- Hoe kijkt de ZN naar de tariefstelling door zorgkantoren?
    - Doorvragen op: Rechterlijke uitspraak, uitdagingen, moeten zorgkantoren überhaupt tarieven vast stellen.

- Kostprijsonderzoek binnen de Wlz heeft een inventariserend karakter, hoe kijkt u daar tegen aan?
    - Indien van toepassing, doorvragen op: bezwaren, tegenmaatrelen, visie
    - Zouden er normen opgenomen moeten worden in het model, en zo ja welke?
        - Met welk doel; data controle, kostenbeheersing, overig
        - Hoe een dergelijke norm te stellen

- Voor het onderzoek is ook een initieel kostprijsmodel opgezet, ik zou u hier graag gericht feedback op willen vragen.
  -show/explain initial model here-
    - Zijn er dingen die u direct al opvallen aan het model?
        - Waarom
    - Zijn de aannames legitiem?
        - Waarom niet, welk alternatief/suggestie voor verbetering
    - Ontbreken er nog kostprijs elementen/zijn er kostprijs elementen die apart genoemd moeten worden, die momenteel in een overlappend element zijn opgenomen?
        - Welke, waarom
    - Wanneer zou een dergelijk model representatief genoeg zijn voor een zorgkantoor om het als basis voor tariefstelling te gebruiken?
    - Wat is een reële winstmarge voor een aanbieder?
    - In hoeverre denkt u dat het model toekomst bestendig is?
    - Hoe zou het model bij aanbieders getoetst kunnen worden?
    - Wie zijn nog goeie partijen om input op te halen/te spreken?
    - Algemeen, waar moet rekening mee gehouden worden o.b.v. uw ervaring?

- Welke (andere) data bronnen zouden nuttig kunnen zijn voor dit onderzoek/model?
    - Indien van toepassing, doorvragen op: beschikbaarheid, kwaliteit

- Wat beschouwd u als essentiële “literatuur” voor dit onderzoeksonderwerp?
    - Duidelijk maken dat hier de term “literatuur” in de breedste zin bedoeld word

<u>Ending</u>

- Ask if they have any remarks or questions they still want to ask both on topic or about the interview procedure
- If no longer on-topic then end recording
- Thank them for their participation

H – Interview protocol ZN2

Practicalities

- Duration: 30-60 minutes
- Language: Dutch or English, based on preference of interviewee

Preparation

- Send request/invitation to participate in the interview
- Plan the interview and the method of communication, preferably Teams, but dependant on interviewee
- Send informed consent form
- Test all potential software and hardware involved

Introduction

- Get acquainted
- Ask about earlier sent informed consent form
- Ask whether there are any question about their rights as interviewee or the interview itself
- Ask if they are okay with being recorded
- Start recording or alternatively prepare to properly take notes

Interview

Set-up: Semi-structured

Goal(s): Get insight in the ZN perspective of tariff determination/cost price research and gather feedback on the initial model.

Sub-topics:

- Interviewees experience/involvement with the tariff determination/cost price research done by ZN for the national 'inkoopkader'
- The model behind the tariff percentage
- Design choices in tariff determination
- The ZN view on the court ruling and tariff determination by Zorgkantoren
- Feedback on the initial model

Questions:

- Wat is uw rol binnen ZN, met betrekking tot de Wlz?
    - Indien van toepassing, doorvragen op: recente werkzaamheden/projecten

- Hoe kijkt de ZN naar de tariefstelling door zorgkantoren?
    - Doorvragen op: Rechterlijke uitspraak, uitdagingen, moeten zorgkantoren überhaupt tarieven vast stellen.

- Hoe ziet u de ontwikkeling van het macrokader voor zich, met oog op de discussie van reële tarieven die nu gaande is?
    - Hoe zou de vaststelling van het macrokader eruit moeten zien?
    - Wat als het macrokader zich niet mee ontwikkeld?

- Hoe verhoud de integrale vergelijking zich tot het kwaliteitskader?
    - Welke rol gaat de integrale vergelijking spelen in de tariefstellingsdiscussie?
    - Op wat voor manier kunnen zorgkantoren de integrale vergelijking gebruiken?

- Wat is een reële winstmarge voor een aanbieder?
    - Waarom?

- Kostprijsonderzoek binnen de Wlz heeft een inventariserend karakter, hoe kijkt u daar tegen aan?
    - Indien van toepassing, doorvragen op: bezwaren, tegenmaatrelen, visie
    - Zouden er normen opgenomen moeten worden in het model, en zo ja welke?
        - Met welk doel; data controle, kostenbeheersing, overig
        - Hoe een dergelijke norm te stellen

- Voor het onderzoek is ook een initieel kostprijsmodel opgezet, ik zou u hier graag gericht feedback op willen vragen.
  -show/explain initial model here-
    - Zijn er dingen die u direct al opvallen aan het model?
        - Waarom
    - Zijn de aannames legitiem?
        - Waarom niet, welk alternatief/suggestie voor verbetering
    - Ontbreken er nog kostprijs elementen/zijn er kostprijs elementen die apart genoemd moeten worden, die momenteel in een overlappend element zijn opgenomen?
        - Welke, waarom
    - Wanneer zou een dergelijk model representatief genoeg zijn voor een zorgkantoor om het als basis voor tariefstelling te gebruiken?
    - In hoeverre denkt u dat het model toekomst bestendig is?
    - Hoe zou het model bij aanbieders getoetst kunnen worden?
    - Wie zijn nog goeie partijen om input op te halen/te spreken?
    - Algemeen, waar moet rekening mee gehouden worden o.b.v. uw ervaring?

- Welke (andere) data bronnen zouden nuttig kunnen zijn voor dit onderzoek/model?
    - Indien van toepassing, doorvragen op: beschikbaarheid, kwaliteit

- Wat beschouwd u als essentiële “literatuur” voor dit onderzoeksonderwerp?
    - Duidelijk maken dat hier de term “literatuur” in de breedste zin bedoeld word

<u>Ending</u>

- Ask if they have any remarks or questions they still want to ask both on topic or about the interview procedure
- If no longer on-topic then end recording
- Thank them for their participation