



MASTER THESIS

DETERMINING FACTORS THAT INFLUENCE PURCHASING LABORATORY SERVICES IN PRIMARY CARE

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Determining factors that influence purchasing laboratory services in primary care

Which factors in health care purchasing, that influence laboratory services in primary care, can be used to optimise the organisation of laboratory services?

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Preface

This thesis completes my master programme Health Sciences at the University of Twente, with the specialisation 'Innovation and Optimization of Healthcare Processes'. This study was carried out on behalf of health insurer Menzis, from February till September 2018. During the master programme I got fascinated by the field of health care purchasing. After attending the lectures of Fredo Schotanus on this topic, I wanted to learn more about it, and finally got the chance to do my Master thesis on this topic.

This report would not have been possible without the support and effort of several people. During my time at Menzis I learned a lot with the help of my supervisors Christel Robben and Esther van Dijk. I would like to thank them for their time and opportunity to shape this research in my own way. Moreover, my thanks goes to the interesting discussions we had, it provided me new insights in the perspective of a health insurer, and the overall complexity of the care field. Next, I would like to thank my supervisors of the University of Twente, Fredo Schotanus and Ron Kusters, for providing my thesis of critical feedback and again the interesting discussions we had on this topic. This really helped to take my assignment to a next level.

I could not finish without a word of thanks to all the health care professionals for their time, effort and participation in this study. Besides, I would like to thank my friends and family for their moral support when I needed it the most. Especially my father and closest friends were valuable motivators in the finishing of my master thesis!

I hope you will enjoy reading this thesis.

Sanne Bentum

Enschede, September 2018

Abstract

Background

In 2006 the Health Insurance Act (in Dutch: ‘Zorgverzekeringswet’) was implemented by the Dutch government, which reformed the health care system and made basic health insurance mandatory. Health insurers became responsible for financing health care (10).

The health care insurer contracts diagnostics providers to perform diagnostics. Laboratory diagnostics support physicians, both in primary and secondary care, in medical decision making. Laboratory testing may be applied in the entire chain of care and is often essential for prognosis, diagnosis or monitoring of treatment effects (1). The supply chain of laboratory analysis starts at the general practitioners (GP) office, in which a patient is referred by a GP for blood analysis. This analysis can be performed by several providers, for example hospital laboratories (1, 2).

As purchasers of health care services, health insurance companies have a limited influence on shifting of volume, since the GP is the referrer and has a relationship with various suppliers of diagnostics. Blood collection is not centrally organized, because a majority of the providers of diagnostics takes care of its own blood collection (2). Based on this, the assumption is made by Menzis (a health insurance company in the Netherlands) that a central organisation of blood collection might lead to economies of scale in terms of quality and costs. Menzis wants to find out if it is possible to implement a new purchasing strategy that improves the organisation of laboratory diagnostics, in primary care, together with the players in the field. This with the aim of continuation or even better quality of care, sufficient locations for phlebotomy, a reduction of costs for the premium payers and possibly as a consequence, a reduced number of diagnostic providers.

Objective

The aim of this study is to determine a new purchasing strategy for Menzis for laboratory services in primary care. The main research question is formulated as follows:

Which factors in health care purchasing, that influence laboratory services in primary care, can be used to optimise the organisation of laboratory services?

Methods

To answer the stated research question, with corresponding sub-questions, a design of qualitative explorative research was chosen. First, an analysis of the current situation and organisation of laboratory services was performed. Second, a literature search was conducted to collect empirical data on contracting and identify purchasing strategy options, suitable for the case of laboratory services. This study is carried out at request of Menzis, which expressed the need of stakeholders input. Hence, interviews with different stakeholders were held to explore their opinion and experiences concerning the organisation of laboratory services in the Netherlands. Based on the results, different scenarios were drafted for a future strategy in purchasing laboratory services. The first two scenarios were created by chronologically walking through

the considerations, and describe conflicting or matching considerations. The third scenario aimed to tackle these difficulties expressed by the stakeholders and conducts optimisation of the organisation of primary care diagnostics.

Results

Based on literature research and data analysis of Menzis reports, different roles of stakeholders are identified and an overview of the current organisation of laboratory services is provided. Based on this, the results show that the majority of primary care diagnostics is performed in hospital laboratories. In addition, the market of laboratory services is characterised by numerous stakeholders in which the GP has the ‘gatekeeper’ function in the health care system.

Opportunities and difficulties of the current organisation are extracted from the interviews. First of all, the stakeholders acknowledged the fact that the performance of diagnostics is complex and is characterised by a variation of organisations that carry out this service with all having their own interest. They all agreed on the importance of diagnostics, because diagnostics carried out at the right time and place can prevent extra treatment or hospitalisation.

The literature review identified thirteen considerations for defining a purchasing strategy for laboratory services. These alternatives are divided into three categories, corresponding the first three steps of the purchasing process, namely specification, selection and contracting. Subsequently the considerations are complemented with the results of the semi-structured interviews. In Table 7 (condensed version, see next page) all considerations are illustrated, including a comparison of the current situation with a possible new situation, with related reasons for implementation or non-implementation.

Conclusion

To answer the research question, several factors can be influenced to optimise the organisation of laboratory services. This study shows that there is a possibility to make adjustments in a purchasing strategy, with the use of the previous mentioned thirteen considerations. Subsequently, with implementing any kind of change in the purchasing strategy of primary care diagnostics, the regional differences need to be taken into account. This due to the variation of practice and the complexity of the organisation of primary care, which results in interdependency between considerations. As a result, three scenarios are drafted based on the considerations and difficulties experienced by stakeholders.

Table 7: Summary of results presented per consideration (condensed version)

	Description consideration	Possible new situation	Reasons for implementing changes
1	Full or non-full service sourcing	Non-full service	<ul style="list-style-type: none"> • Better specialised providers of care
2	Appropriate mode of communication between supplier & insurer	Better distinction can be made between different types of providers	<ul style="list-style-type: none"> • Collaboration on innovation • Partnership • Gives more options for improving quality
3	Focus on input or output	Focus on output and outcome	<ul style="list-style-type: none"> • More stimulation of prevention • More innovation and new developments
4	Operational Excellence, Product Leadership or Customer Intimacy	These three factors taken into account for selecting a supplier	<ul style="list-style-type: none"> • Operational excellence in hospital • Customer intimacy in EDC
5	Local or national source	National sourcing of analysis	<ul style="list-style-type: none"> • Analysis can be performed in the whole country
6	Big or small supplier	Big supplier	<ul style="list-style-type: none"> • Developments of collaborations among providers to increase capacity • Negotiations preferably with a limited number of providers
7	All or selective sourcing	Purchasing selectively	<ul style="list-style-type: none"> • Suppliers would like to be awarded according to performance
8	Delegated sourcing strategy	Preferably primary care provider as main contractor/first-tier supplier	<ul style="list-style-type: none"> • Link between applicants and back office • Possible reduction of number of contracted suppliers • Unburden individual GP's
9	Preferred supplier	Make a better distinction between providers	<ul style="list-style-type: none"> • Needs identified among providers
10	Competitive bidding or partnership	Preferably partnership, and competitive bidding back-office	<ul style="list-style-type: none"> • Same arguments as applied for long versus short term
11	Price or performance agreement	Performance agreement	<ul style="list-style-type: none"> • Same arguments as applied for focus on input or output
12	Fixed-price or cost-based contract	Preferably fixed, on prices for analysis (back-office), suggested by the insurer	<ul style="list-style-type: none"> • Reducing variation in price among suppliers • Less negotiation is needed for agreements
13	Long- or short-term contract	Long-term contract	<ul style="list-style-type: none"> • Gives more assurance to both parties on price and quality • Gives more space to discuss future developments and innovation

Table of Contents

Preface	2
Abstract	3
1. Introduction.....	7
1.1 Background.....	7
1.2 Objective and research question.....	10
1.3 Reading guide	10
2. Contextual Framework	11
2.1 Request Process	11
2.2 Stakeholders.....	11
2.3 Menzis (health insurer)	14
3. Theoretical Framework.....	15
3.1 What Is Purchasing?.....	15
3.2 The Purchasing Process	15
3.3 Considerations in the Purchasing Process	16
3.3.1 Specification	17
3.3.2 Selection	19
3.3.3 Contracting	23
3.3.3.1 Payment Structures	24
4. Methodology.....	27
4.1 Situation analysis.....	27
4.2 Literature research	27
4.3 Interviews stakeholders.....	28
4.4 Data analysis	29
4.5 Scenario analysis	29
5. Results	30
5.1 Current Size Primary Care Diagnostics	30
5.2 Interviews.....	31
5.2.1 General findings of interviews	31
5.2.2 Summary of considerations.....	32
5.2.3 Results per consideration.....	34
5.2.4 Additional findings of the interviews	48
6. Discussion.....	50
6.1 Main findings	50
6.2 Relation with literature	52
6.3 Strengths and limitations	52
6.4 Conclusion	53
7. Recommendations	54
7.1 Practical recommendations for implementation	54
7.1.1 Scenario 1	54
7.1.2 Scenario 2	55
7.1.3 Scenario 3	55
7.2 Final advice on scenarios	56
7.3 Recommendations for further research.....	58
References	59
Appendices	62
Appendix I: Interview guide.....	62
Appendix II: Informed consent form	64
Appendix III: Interview scheme	65
Appendix IV: Information letter.....	Fout! Bladwijzer niet gedefinieerd.
Appendix V: Code scheme – Code groups	66
Appendix VI: Code scheme – Network ‘Knelpunten’	67
Appendix VII: Cooperated respondents	Fout! Bladwijzer niet gedefinieerd.

1. Introduction

In this chapter the background of this study will be illustrated, followed by the objective and research question. Conclusively the structure of this report will be described given a reading guide.

1.1 Background

The Netherlands has excellent quality of healthcare according to the number one position on the European Health Consumer Index, but also has one of the highest health expenditure in Europe, per capita (8). In 2016 more than 96 billion euros was spent on health care, what equates to 13,8% of its Gross Domestic Product (GDP) (9). Alongside the Netherlands, many countries are coping with ever-increasing health care costs (2), important to not is that this increase did not grow as strongly as expected (72). In 2006, the Health Insurance Act (in Dutch: ‘Zorgverzekeringswet’) was implemented by the Dutch government, which reformed the health care system and made basic health insurance mandatory. In this way a market was created with the intention to strengthen competition among health insurers. Therefore, the health insurers became responsible for the financing of health care (10). When the responsibility for financing health care is separated from the responsibility of providing health care, an increase of quality and accessibility of care can possibly be realized at reasonable costs (2). In this new situation of ‘managed competition’ individuals can choose, on an annual basis, between several insurance providers (10). Thus, health care, in the Netherlands, is primarily financed through the compulsory health insurance contributions of citizens (8).

The stakeholders in health care are the government, health-care providers, health insurers, patient organisations and supervisory bodies (10). Managed competition changed the role of these actors. The role of the government changed from direct control of volumes, prices and productive capacity to defining regulation and monitoring the activities on the market (3). What resulted in the health care insurers, the patients and providers of health care becoming the actual key players of the market. Interactions between these players appear in three different markets, namely the health insurance, provision and purchasing market (3). In the latter case, the health care purchasing market, the insurers can integrate or selectively contract with health care providers (10), and can negotiate with providers of care on price, volume and quality of care (see Figure 1) (3).

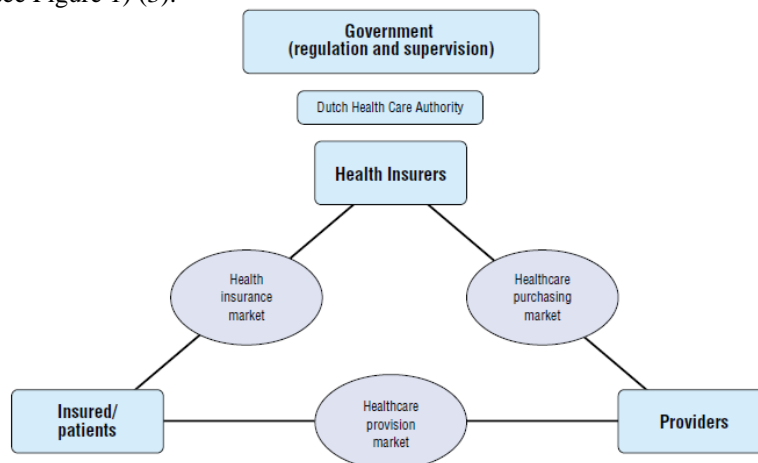


Figure 1: Actors and markets in the Dutch healthcare system since 2006 (source: Kroneman et al. (2016) (8))

A component of the provision market is laboratory diagnostics. Laboratory diagnostics supports physicians both in primary and secondary care in medical decision making. Laboratory testing may be applied in the entire chain of care and is often essential to prognosis, diagnosis or monitoring of the effects of treatment. In primary care diagnostics is carried out at the request of a primary care provider, and may consist of laboratory tests such as blood tests and examination of other human material as well as procedures such as ECGs and diagnostic imaging (e.g. ultrasonography and nuclear imaging) (1). The supply chain of laboratory analysis starts at the general practitioner (GP) office, in which a patient is referred by a GP for blood analysis, what will be the focus in this research. This analysis can be performed by several providers for example hospital laboratories. Such organisations may have separate locations where blood collection/phlebotomy takes place, so called 'prikposten' in Dutch (1, 2). In the Netherlands phlebotomy is a medical intervention, reserved to or carried out under supervision/responsibility of a physician.

The health care insurer contracts diagnostics providers to perform diagnostics. Most of the requests (69%), coming from a primary care provider, are conducted by a hospital (2). The diagnostics provider reimburses the costs to the health care insurer, the insurer will receive the invoice. This invoice will subsequently be paid by the patient, as it is part of the compulsory deductible of €385,- (or to a maximum of the voluntary deductible of €885,-), what is levied by the health insurer on all health care expenditure (1, 3, 38). The GP refers the patient and has, as a 'gatekeeper' in the health care system, an influence on the volume and the logistic process. As purchasers of health care services, health insurance companies have a limited influence on shifting of volume, since the GP is the referrer and has a relationship with various suppliers of diagnostics. In addition to the logistic process, currently the blood collection is not centrally organized, because a majority of the providers of diagnostics takes care of its own blood collection (2). Based on this, the assumption is made by Menzis, a health insurance company in the Netherlands, that a central organisation of blood collection might lead to economies of scale in terms of quality and costs. An accurate estimation of total costs of phlebotomy and transport of blood tubes to the laboratories is however not available.

Menzis wants to find out if it is possible to implement a new purchasing strategy that improves the organisation of laboratory diagnostics, in primary care, together with the players in the field (if possible), with the aim of continuation or even better quality of care, sufficient locations for phlebotomy, a reduction of costs for the premium payers and possibly as a consequence, a reduced number of diagnostic providers. Which reflects the objective of the Dutch Health Care Authority ('Nederlandse Zorgautoriteit' (NZa)) regarding primary care diagnostics to be accessible, affordable and of good quality (1). Diagnostic services in primary care and secondary care are connected to each other in different ways, mainly because primary care diagnostics take place in initially secondary care facilities, for instance hospitals (1). Due to this interdependence, changes made in the organisation of diagnostics in primary care, might influence the organisation of secondary care, and vice versa.

Given the conditions stated by Menzis, there are several scenarios in which laboratory diagnostics can be organized. Currently there are around 145 care providers (about 92 hospital laboratories and 50 EDC/GP laboratories) that provide the service of diagnostics in the Netherlands and which are contracted by Menzis (2, 44, 45). The market of diagnostics is fragmented according to a report of KPMG, Plexus

(2014), due to different regulations in primary care in comparison with secondary care, and separate reimbursement methodologies (4). Several providers do not always cooperate, for example to view or share results, resulting in patients who need to get their blood drawn unnecessarily, or need to get their blood drawn multiple times, according to Menzis (2). Furthermore, health insurers apply different purchasing policies between hospitals and EDC's (1). Building upon this situation, the assumption is made that primary care diagnostics may not be organized optimally. Moreover, using primary care diagnostics effectively and with a good price-quality ratio, can contribute to improving quality of care and lower the total health care expenditure, both in primary as in secondary care (1). The SAN (branch organisation for medical diagnostics in primary care) made the assumption that, diagnostics used in health care in 2010 was approximately 1% of the total health care expenditure, but influenced around 60-70% of the subsequent medical decision making (39). The European Diagnostics Manufacturers Association (EDMA) presents the total expenditure on laboratory supplies per country, which is in 2014 and 2016 the same for the Netherlands, namely 0,4% of the total health care expenditure which is translated by €16,30 per capita (40, 41), thereby taking a bottom position in west-European countries. Switzerland spends the largest amount on diagnostics per capita, namely €56,32, as opposed to Cyprus who spends the smallest amount, namely €2,36 (40).

One of the possible solutions and a desired situation, according to Menzis, for optimising the organisation of diagnostics and possibly lower related costs is the disconnection of the front and back office. In other words, disconnecting the phlebotomy and transport of blood from carrying out the analyses in a laboratory, might give the possibility to influence the shifting of volumes. This might allow Menzis to agree on lower rates and realize a reduction in the number of blood collection points. However, this assertion has to be analysed, as well as the possible consequences for the patient, because this can influence the accessibility and quality of care, or blood tests can still be done close by and/or within an extended time frame. Another possible solution is creating a general service point, in which all providers of diagnostics are integrated and provide diagnostics (collection and analysis) in one centralized location. This option does not necessarily give the possibility to shift with volumes but might improve the accessibility of care.

The major focus areas in improving the organisation of diagnostics, according to Menzis, are getting the result known on time for the patient, no unnecessary tests are carried out and finally, more insight is gained into the invoice flow (what has been requested and what is being invoiced).

To manage spend and reduce the costs of products or services, competition between health care providers might help. Competitive contracting is a way that might save costs and/or improve quality. In addition, selective contracting based on price or quality also offers a way for providers to compete, which possibly results in a reduced number of suppliers, better quality and/or reduced costs (5). Purchasing covers several dimensions. In this case contract management will be assessed and discussed, besides the strategic purchasing process. Decision making models, like the Kraljic matrix and the model of Monczka et al. (2009) for making strategic choices, can help to determine what strategic decisions in purchasing need to be made to optimise processes (6). Especially the step by step approach of Monczka et al. (2009), which defines the different strategic choices that can be made, is a method to assess and improve the purchasing process of an organisation.

1.2 Objective and research question

The aim of this study is to determine a new purchasing strategy for Menzis. To do so, an analysis of the various strategic possibilities will be performed. There are several strategic choices which can be made, known from earlier research, to define a new sourcing strategy. Nevertheless, an overview of all these possible options (for example the combination of contract duration, the number of suppliers contracted in regard to the location and what kind of relationship should be pursued with the providers of care) and how they are connected with each other is not thoroughly mentioned in literature. On top of this, applying this in a supply market, like the health care industry, in which human beings are ‘product’ and customer simultaneously, makes it complex. Therefore, this research focuses on identifying several options, which can help Menzis to change the purchasing strategy.

Therefore, the main research question is formulated as follows:

Which factors in health care purchasing, that influence laboratory services in primary care, can be used to optimise the organisation of laboratory services?

The following sub questions are drawn to answer the main question:

1. In which way is the purchasing process of laboratory diagnostics, especially phlebotomy, organized in the current situation?
2. What are the benefits and difficulties of the current situation regarding costs, quality and accessibility of care?
3. What are possible purchasing strategy considerations to improve the organisation of laboratory services, and what are the implications of these possible purchasing strategies on costs, quality and accessibility of care?
4. What are the effects and/or barriers of changes in the way of contracting laboratory blood analysis from the perspective of all relevant stakeholders?
5. Which adjustments in the purchasing process can be valuable for Menzis in the procurement of laboratory services?

1.3 Reading guide

For this research the following matters will come forward. In chapter 2 extra contextual information about the subject will be explained to gain more insight in the current organisation of laboratory diagnostics. This is followed by a theoretical framework in chapter 3. In this theoretical framework the purchasing process will be explained in more detail as well as the considerations, possibilities and effects of choosing a strategy. After that the methodology of this research will be illustrated in chapter 4, to explain the approach of this study, followed by the results of the research in chapter 5. Finally, in a concluding section, an advice on possible valuable adjustments on the purchasing process of Menzis will be provided.

2. Contextual Framework

Before exploring the possibilities and effects of options for, or adjustments in, the purchasing strategy of Menzis, insight is provided on how laboratories are contracted in the Netherlands, and how this process of analysis is carried out. In this chapter the first sub-question will be answered, namely *“In which way is the purchasing process of laboratory diagnostics, especially phlebotomy, organized in the current situation?”*. A throughout explanation and understanding of why a product or service has been created, who benefits from it and how, is needed to know whether and how a supply chain successfully can be transformed (23). On top of that, stakeholders play an important role, because they have an effect on the different interdependencies and following power regime circumstances of which a successful implementation of sourcing strategies is reliant (24). So, an overview of associated stakeholders will be given. Additionally, a basic understanding of financing in primary care, including Diagnosis Related Group system (DRG, in Dutch called: ‘Diagnose Behandel Combinatie’) DBC and reimbursement, will be explained.

2.1 Request Process

Primary care diagnostics, especially laboratory services, consists of a number of process steps. The first step is a request to perform a diagnostic test, coming from a primary care provider. The GP is the most important applicant of diagnostics in primary care (1). This request is followed by the actual execution of the analysis, which can be performed by general medical practices (in Dutch; huisartsenpraktijken), hospital laboratories or primary care diagnostics centres (in Dutch; eerstelijns diagnostische centra (EDC)), independent treatment centres (in Dutch; zelfstandige behandelcentra (ZBC)) and partnerships of laboratories (in Dutch; productiesamenwerkingsverbanden (PSV)) (1, 2).

In Figure 2 the request process, including the four process steps (in blue), and all of the involved stakeholders are presented. For this research the focus is specifically on the orange part (see Figure 2), which concerns the steps following the request of diagnostics, thus everything in the pre-analytical phase. After the execution of the research, the assessment takes place. This can be done by the primary care provider, that requested the test, or with consultative assistance of a medical specialist. The assessment of the result subsequently leads to a diagnosis, or exclusion of a disorder. If necessary, a treatment plan follows in primary care or a patient is sent to a hospital (secondary care) with referral (1).

2.2 Stakeholders

As stated before there are several stakeholders who provide laboratory services in primary care. According to the data of the ‘Zorgkostenmonitor’ of Menzis, hospital laboratories are the main players of carrying out primary care diagnostics, namely they represent 63,0% of the total organisations in which primary care diagnostics is performed, as presented in Figure 2 (‘Zorgkostenmonitor’ Menzis, 2018) (44). These percentages are based on the number of organisations that claimed the NZa order rate of performing laboratory tests including phlebotomy ‘079991’ in 2017 from Menzis.

Every hospital in the Netherlands has the facilities to perform diagnostic tests. This is because emergency care and intensive care need to be provided 24/7, which includes analyses in diagnostics. Some of the hospitals have outsourced laboratory services or intend to organize them jointly with other hospitals.

Applications from primary care are part of the category ‘other care products’ (in Dutch; overige zorgproducten (OZP)). Hence, they are not related to a care process but declarable products that the hospital can charge separately and therefore fall outside the scope of the DBC Care Products System. In negotiations with hospitals these products are named with a threshold, an upper limit of costs that can be reimbursed (1, 2). Diagnostics in secondary care are encrypted in DBC care products. DBC cover all costs of medical specialist care, including diagnostic procedures (8).

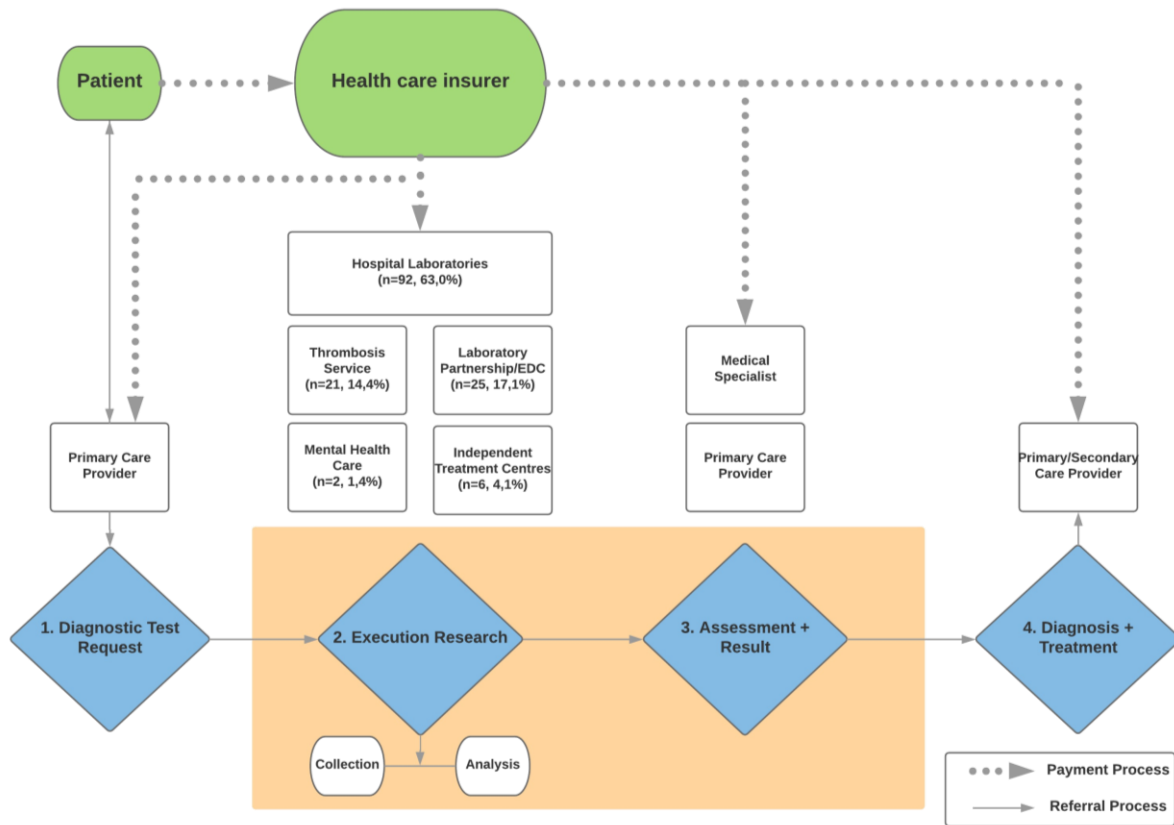


Figure 2: flowchart of request process in primary care, percentages based on number of providers that claimed the NZa-code ‘079991’ in 2017 (source: ‘Zorgkostenmonitor’ Menzis, 2018)

EDC’s only perform diagnostics on request of a primary care provider, and focus primarily on providing laboratory diagnostics. In addition, they are increasingly developing activities in the field of image and function diagnostics, so that they can fully serve primary care providers (2). The maximum acceptable costs for the total operation, performed by an EDC, are determined by means of parameter values for analysis costs (laboratory analysis of patient material), function tests and order costs. The reimbursement for analysis costs consists of the revenue from fixed rates for approximately 700 different operations. The compensation for the other tests consists of a part of the turnover from the relevant fixed rates, namely the part after deduction of location costs and the interest component. The order costs consist of costs that can be attributed to the costs of the purchase, the availability costs and the registration and invoicing costs (excluding location costs). The fee for this is included in an amount per order, equal to the (fixed) order rate. In addition, an extra charge for the degree of de-concentration is possible per order, dependent on the extent to which the laboratory does not collect patient material at the head office, but at phlebotomy facilities. Collection at such a facility possibly entails more costs than central organisation, thus a surcharge

can be applied (1). Apart from being an applicant of diagnostic tests, a GP can be a performer of diagnostic test or collect blood for analysis themselves. These activities are reimbursed with a rate per case/per patient and/or by charging a consultation (1).

The Dutch Health Authority yearly establishes maximum rates for the different analyses and order rates that can be invoiced by laboratories. A health insurer can negotiate on these rates with a health care provider, but it can never exceed the maximum that is established by the NZa. An overview of these rates is presented in Table 1 (35, 36).

Table 1: Overview NZa rates applies in 2018, including description (source: www.zorgproducten.nza.nl)

Description 'zorgactiviteit'	NZa Code	Price (max. rate)
Order rate clinical-chemical and microbiological laboratory tests, including phlebotomy	079991	€ 11,25
Order rate clinical-chemical and microbiological laboratory tests, excluding phlebotomy	079989	€ 5,87
Surcharge on order rate for decentralized collection of patient material	079990	€ 3,68
Occasional home visit, at the request of a GP	079987	€ 17,63
Periodical home visit (thrombosis care)	079986	dna on this research
Home visit (up to 2016)	079992	dna on this research

In addition to the NZa rates, all of the individual health care providers are given a unique AGB-code. This is a code that identifies the institution, including the related care providers. The first two numbers of an AGB-code identifies what kind of care provider it concerns, for example '06' refers to a hospital, and '50' to an EDC/GP laboratory (45). In Table 2, extended numbers of the NZa code '079991' for order rate, including phlebotomy, is presented. The majority of the volume of diagnostics is performed in hospital laboratories, namely 46,1%.

Table 2: Extended numbers NZa code '079991', order rate including phlebotomy, in 2017 (source: 'Zorgkostenmonitor' Menzis, 2018)

AGB code	Institution	n=	percentage	volume	percentage	turnover	percentage	number of patients	percentage
06	Hospital	92	63,0%	947005	46,1%	€ 9.000.630,00	46,2%	407632	49,1%
22	ZBC	6	4,1%	12624	0,6%	€ 114.376,31	0,6%	6833	0,8%
34	Thrombosis service	21	14,4%	397491	19,4%	€ 3.228.780,36	16,6%	24469	2,9%
50	EDC/laboratory	25	17,1%	695768	33,9%	€ 7.146.414,49	36,7%	391665	47,2%
54/79	Mental health services	2	1,4%	46	0,0%	€ 319,38	0,0%	27	0,0%
Total		146	100%	2052934	100%	€ 19.490.520,54	100%	830626	100%

2.3 Menzis (health insurer)

In 2017, 15 million citizens are covered by the four largest health insurance organisations of the Netherlands (11). Menzis is one of these four with a market share of 10.4% and with more than 2 million insured persons (11, 12). Menzis, operating under two labels ‘Menzis’ and ‘Anderzorg’, works with a non-profit seeking objective and is characterised by its Council of Members, which provides input for their management (12). The core work areas of Menzis (in Dutch; kernwerkgebieden (KWG)) are Groningen, Achterhoek, Twente, de regio Arnhem-Ede-Tiel (7), as presented in Figure 3 (37).

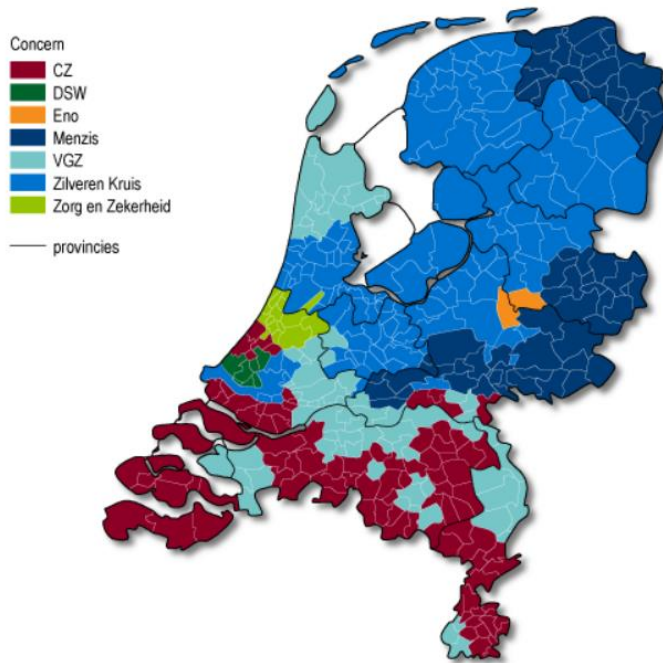


Figure 3: Division of market health insurance in 2016, per municipality (source: volsgezondheidszorg.info)

3. Theoretical Framework

This section gives an explanation about the purchasing process and subsequently an overview of considerations or alternatives in this process, gained by a review of existing literature on the subject. These considerations might be of influence to determine an improved organisation of laboratory services. An identification of these considerations or alternatives leads to possible adjustments that might be implemented in the purchasing strategy of Menzis. In this way an answer for the third sub-question will be generated, namely *“What are possible purchasing strategies to improve the organisation of laboratory services, and what are the implications of these of these possible purchasing strategies on costs, quality and accessibility of care?”*.

3.1 What Is Purchasing?

Due to the implementation of the Health Insurance Act in 2006, a market of managed competition is created in the health care system of the Netherlands. As a result, the health insurer has been given the responsibility to finance health care (14). This gives the advantage to negotiate with health care providers on price and quality. Subsequently patients can join an insurance policy which best fits for their situation (3). In the previously mentioned health care purchasing market there is interaction between the health insurers and health care providers. The relationship between these two actors is based on contracting (3). In this role as purchasers, health insurers are responsible for the quality, accessibility and affordability of health care services (13).

Before analysing the purchasing process and related strategies the definition of purchasing should be considered. Purchasing is a functional group and at the same time a functional activity, to ensure maximum value to an organisation (16). Purchasing and supply management can be defined as *“the design, initiation, control and evaluation of activities within and between organisations aimed at securing inputs from suppliers at the most favourable conditions”*. In this definition the patient value is included, in other words, purchasing managers in health care should take into account the health outcomes that matter to patients (14).

The purchasing function, as mentioned earlier, consists of several activities. Van Weele (2010) defines a purchasing process model which consists of six main steps namely, specification, selection, contracting, ordering, monitoring and finally after-care (15, 16). According to Van Weele (2010) sourcing is enclosed in the tactical part of the purchasing process. This tactical part of purchasing includes specification, selection and contracting (15).

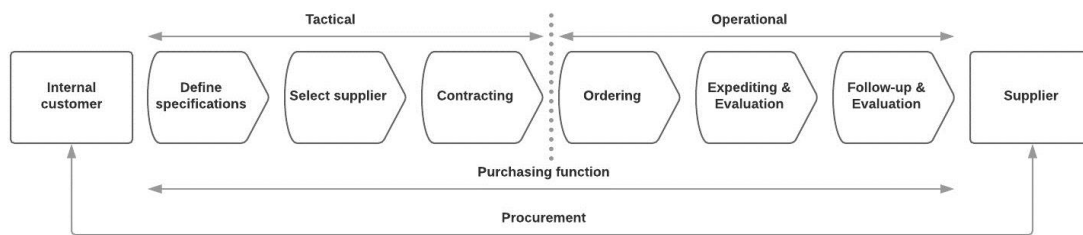


Figure 4: The purchasing function (source: Van Weele, 2005)

3.2 The Purchasing Process

To define adjustments for the purchasing strategy of Menzis the tactical part of the purchasing process will be outlined. Specifying is the first step in the buying process. It is determined for the success of the purchasing process, because in this stage it is defined which products or activities will be produced or what will be contracted out. The second step in the purchasing process is called supplier selection. After defining the purchasing requirements, the buyer can start exploring its market possibilities (15). Supplier evaluation and selection decisions often arise when consolidation of volumes across a business is considered, or when the size of the supply base is considered to be reduced (16). Both of these aspects fit the problem stated in this research. An issue that should be considered at this stage, and what will be drawn up in the next, is whether the product or service provided will be awarded on a fixed-price, lump-sum or cost-reimbursable basis (15). This last stage of the purchasing process, namely contracting, is the most visible and practical part of purchasing (17).

3.3 Considerations in the Purchasing Process

As stated in the introduction, decision making models, like the Kraljic matrix, can help to determine what strategic decisions in purchasing need to be made to optimise processes (6). These so called portfolio models are widely used, to define a different strategy per category or commodity. In addition to the advantages of these models, they also received criticism because they would be too simplified and not correspond with reality (57, 58). Especially the Kraljic model is characterized by speed and simplicity, which therefore preferably would be used for well-known and simple purchases (6).

In purchasing of health care, as referred to the process in which health insurers select, contract and manage the relationships with providers of healthcare, it is not yet identified in academic literature which approaches work best for what situation or specialty (14). This field of health care not being well-known, and containing different characteristics, would require different purchasing strategies (14). Only applying the Kraljic model, for illustrating the several strategic choices in purchasing primary care diagnostics, will therefore be limited. For that reason, to define possible adjustments or considerations for a strategy to purchase laboratory services, a combination of models is illustrated.

Aside from sourcing considerations, stated for example by Monczka et al. (2009) and Van Weele (2010), a purchasing strategy may also be defined in terms of strategic priorities, such as cost reduction, quality or security of supply (19, 20). To achieve such strategic priorities, managers can choose a mix of tactical sourcing levers, including a set of activities for implementing a purchasing strategy (20).

The sourcing lever model by Schiele (2007) describes seven core tactical sourcing levers (21) (see Figure 5). Different levers can simultaneously be selected, and if combined properly possible synergetic effects might be created. Pooling demand, price evaluation and extending the supplier base are transaction-oriented levers, hence more focussed on costs. The other levers are characterised by a relational-oriented perspective, in which focus is on creating value or innovation, therefore a strong collaboration with suppliers is required. The use of the right set of levers is a crucial factor in the result of a purchasing function. For this reason the sourcing levers defined by Schiele (2007) should be considered when

designing a purchasing strategy. Applying these sourcing levers in balance has been proved to be more effective than single application. In addition possible trade-offs between levers can be prevented in that way (21, 57).

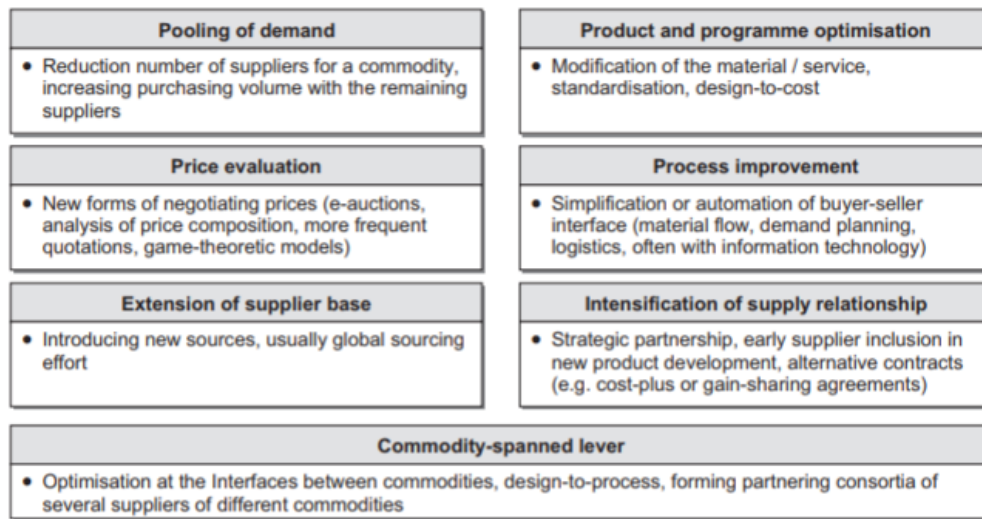


Figure 5: The seven sourcing levers (source: Schiele, 2007)

Considering sourcing levers, including activities, being a tool to achieve strategic priorities, these will be explained further in this paragraph. In the following paragraphs the considerations, with possible corresponding sourcing levers, will be illustrated according to the three different steps in the tactical part of the purchasing process.

3.3.1 Specification

During this stage the purchasing requirements are determined. It starts with the decision of ‘make’ versus ‘buy’, so which products will be produced by the firm or organisation itself, and which will be contracted out (15). In the case of laboratory services the ‘make’ or ‘buy’ decision is not an issue for insurers but can be a decision to make for primary care providers, like a GP, or a hospital when considering to ‘buy’ laboratory services or to conduct these services by themselves. The process of assessing the possibility to ‘make’ or ‘buy’ and selecting possible suppliers, begins with formulating specifications of the product or services that will be purchased. For this research the scope of the purchase, namely laboratory services, can be divided into two different parts namely a front office, the service of phlebotomy and transport, and a back office, a laboratory in which the actual analyses are carried out.

The allocation of volume among the suppliers can differ from year to year (15). But in addition to that, as a purchaser firm it can be considered to purchase full service from a supplier, or only a certain amount or part of the whole assignment (16). Full service is defined as ‘a comprehensive bundle of products and/or services, that fully satisfies the needs and wants of a customer related to a specific event or problem’. Especially industrial firms prefer turnkey solutions instead of products that partially solve the demand (33). Offering an integrated solution to a customers’ problem, gives a supplier the possibility to differentiate from competitors, with competitive advantage as result (53). The effect of a full-service contract on the performance of the product and the total costs should be considered in this (33). For

example, purchasing the full service of a health care provider might influence the waiting time, quality of care or might result in none, a marginal or substantial decrease of the total costs of the service.

Consideration 1: Full or non-full service sourcing

Nellore et al. (1999) describe multiple dimensions of purchasing specifications. The first dimension covers the product requirements, this describes the technical attributes of the product (27), as well as activities and logistical requirements performed by the supplier (15, 27). In addition to the first, in the second dimension process requirements are described. The third dimension refers to customer requirements. Suppliers need to consider the benefits of the product or service they provide for the end consumer (27), in this case, the patient that needs diagnostics in health care. As fourth, functional specifications describe the functionalities which the product or service must have for the user. An advantage is that it creates one standard of quality, against which all the different suppliers can be evaluated (15). And finally, and that defines the upcoming consideration, choosing an appropriate mode of communication with the suppliers should be considered. Writing specifications does not need to be done entirely by a buying party, but suppliers may contribute significantly by bringing in their knowledge and skills. This could vary from (combinations of) integrated problem-solving, early involvement or a serial interaction between supplier and purchaser (27).

Consideration 2: Define appropriate mode of communication with the suppliers

Axelsson and Wynstra (2002) describe four specific steps for specifying services, namely input, throughput, output and outcome. Input specifications focus on resources and capabilities of the supplier. Throughput explains the processes needed to produce the service. Output is focussed on the functionality or performance of the service, often measured by performance indicators. And finally, outcome evaluates the economic value generated by the service for the final customer, resulting in service level agreements (SLA) (28).

In this research quality methods, for example ISO 15189 (specific accreditation requirements for laboratory research (29)), or a Diagnostic Test Consultation (in Dutch: Diagnostisch Toets Overleg (DTO)), are used as input. Every laboratory in the Netherlands needs an ISO 15189 certificate to practice diagnostics. In addition, the DTO, is a periodic peer review that gives GP feedback about their test request behaviour, and is imposed in a contract by the insurer to be performed once a year (30, 46). Performing alongside these imposed requirements is part of the throughput. Health care purchasers are now still forced to mainly focus on the input, and limited on the output, because there is insufficient reliable data present on treatment results and long-term health gain (31, 32). This is applicable for diagnostics in primary care, stakeholders indicated in interviews that were held, that the earlier diagnostics is deployed, the more effective preventive care can be achieved. However, it is not entirely known what amount of costs in secondary care can be saved with a more integral organisation of primary care diagnostics.

A consideration for health care purchasers is the choice between spending attention on a strategic health care provider, with a long-term cooperation (in which specification can be especially focussed on output and outcome level), or an occasional health care provider with a short-term contract (in which is

often more focussed on input and throughput level) (32). Outcome-based contracting could be a helpful tool in creating incentives and conditions for suppliers, to offer services and products that contribute to optimal patient outcomes and health value. On the other hand, suppliers of care can play an active role in which coordination on patient outcomes is stimulated and facilitated (14).

Consideration 3: Focus on input/throughput or output/outcome

3.3.2 Selection

After or during the phase of defining specifications and requirements, a market exploration can start (15). Throughout the selection process it is important to understand the different requirements, for example quality, costs and performance, which are valuable for the purchase. There are many decisions to make when developing a selection strategy and they depend on factors like user preferences, market conditions or corporate objectives (16).

This is in line with the following definition of the purchasing activity, namely ‘selecting those suppliers and dealing in such a way with them, that it enables the organisation to implement its market strategy best in the way it has decided to serve the end customers’. Customer needs can be met on three aspects: 1) operational excellence, 2) customer intimacy and/or 3) product leadership (42). By focussing on one of these aspects competitive advantage can be created, which allows an organisation to become leaders in their sector. Product leadership is striving to produce the best product with help of continuous innovation (43). With operational excellence the focus is on lowest price, because internal costs are minimized (42, 43). Finally customer intimacy, is a strategy in which an organisation adapts its products or services to fit to customers’ needs, thus the value of the customer relationship is more important than the initial costs (43). These needs of the final customers can be specified in customer requirement specifications (27).

In the organisation of laboratory services, several stakeholders focus on providing these services, which might possibly be segmented into organisations providing people executing the phlebotomy, drivers that transport the samples of blood and the actual service of analysis in a laboratory. These segments might require different processes to create value for the end users, in this case patients who need diagnostic. In the operational excellence point of view, it might be interesting to merge these organisations, on possible scale effects, but it might lead towards sub-optimisation of the customer value approach in the different segments (42).

Product leadership goes hand-in-hand with the fourth mentioned sourcing lever (see Figure 5), namely product optimisation. This is about modification of the product or service, to make sure it better meets the needs of the end customer (20). By encouraging collaboration between supplier and buyer (60) or early involvement in the development, product innovation can possibly be stimulated (20, 60). On the other hand, the fifth sourcing lever, process improvement, can be of support in operational excellence. On the grounds that it corresponds with achieving the aim to respond to customer demand, in a most efficient way possible. Especially the activity of quality dialogues, suggested by Hespings & Schiele (2016), to avoid quality defects and related costs (20), could be applicable in the field of health care purchasing.

The policy of a purchasing function should be in line with the policy of the total organisation. As purchaser it is important to translate this policy to the purchasing strategy of the purchase at hand and

decide if you want to select suppliers that focus on, or even excel in, customer intimacy, operational excellence or product leadership, or a combination of these aspects.

Consideration 4: Operational Excellence, Product Leadership or Customer Intimacy

Contracting is a way to influence the base of providers. According to Van Weele (2010), who discusses the overall management of supplier relationships, in order to be effective in purchasing the supplier strategy not only involves contract duration or the type of contract, but also what type of relationship should be pursued and which suppliers are contracted (15). A distinction can be made between the sourcing strategy and the contract strategy (15). The first sourcing alternative is whether to buy directly versus from a distributor. Which in the case of purchasing laboratory services, is not one of the essential considerations (16). But secondly, whether to purchase from a local or national source does apply on the practice of laboratory services (15). The answer depends on the type of product, but in the case of medical services the accessibility of care should be acknowledged as well. Local sourcing is preferable when intensive personal communication is required in the supplier relationship (15).

Consideration 5: Purchasing from local or national source

In addition, Monczka et al. (2009) also define the alternative of large or small suppliers. Size becomes an essential factor when one firm decides to purchase its service or product from only one or a few suppliers. This means that the supplier must have the ability to service multiple geographic locations (16). This goes hand in hand with the number of suppliers of which the company or institution wants to purchase the product from. It is possible that a buying firm does not want the seller to be dependent on its demand (16). Thus, supply risk is related to the number of suppliers of which the same product can be sourced (15). So, besides the size of the supplier, single or multiple sourcing are alternatives in the sourcing strategy.

Multiple sourcing is defined as ‘purchasing from two or more vendors a functionally identical or similar good or service’. This contradicts the definition of single sourcing, which is stated as followed ‘purchasing from only one vendor an identical good or service’ (15, 62). Single sourcing, being the simplest structure, is the most dependent relationship. Because having only one source of supply could put the buyer in a position of weakness. This might result in a poor market position as buyer, or jeopardising the firm’s competitiveness. On the other hand, having only one supplier, could create a monopoly. Working in such a single-source relationship makes it easier to establish cooperation (63). Which enables to exchange ideas, a clear understanding of cost structures can be achieved and in feeling both committed there can be an increased focus on enhancing the product or process. Finally, it provides efficiency, less administration and volume discount can be achieved. Therefore, these relationships tend to be more for a longer term (26, 63).

In multiple sourcing the product or service is secured by multiple suppliers. The approach of multiple sourcing prevails in market areas with a high degree of competition, low levels of technological competence and low switching costs (26). This type of sourcing requires (geographical) capacity, for example in the form of integral care. In addition, other advantages are the assurance of supply, it stimulates

innovation, spreads risks and opportunities, and keeps suppliers alert (63). On the other hand, it brings less loyalty of the supplier (65), higher administrative and transaction costs and reduced scale benefits (65, 66). Within multiple sourcing it must be decided how the order or job is allocated between the different suppliers. This allocation could take various forms, 1) it could be static (fixed amount per source), 2) semi-static (a fixed percentage, every other order decided by a lottery) or 3) dynamic (decided in a mini-competition, depending on previous performance etc.) (64, 65). In addition to multiple sourcing, the use of different lots can be applied. Dividing a big job or order in various lots can be done in various ways, based on logic or content wise (65).

Insurers are allowed to contract health care providers selectively, based on the quality and/or cost of care (3). Selective contracting is in fact only choosing those providers with whom purchasers want a contract, based on several requirements, and reject others who do not fulfil the requirements (17). Using selective contracting, volume can be bundled and possible increases of economies of scale might lead to lower prices of a product or service. There are several barriers towards selective contracting, for example, according to Schäfer et al. (2010), there is insufficient transparency of quality and the hospital financing system is too complex for an adequate purchasing process. But most importantly, health insurers are reluctant in directing patients to preferred care providers as they are worried about image, and possible loss of clients (3, 56). On the other hand, selective contracting might increase their bargaining power, create room for agreements on stimulating innovation and enables to contract possible new providers or only providers that provide the best quality-price ratio (3).

Consideration 6: Purchasing from big or small supplier

Consideration 7: Purchasing from all providers (or multiple sources) or contracting selectively

Consideration 7(a): Purchasing from multiple sources in combination with multiple lots

Consideration 7(b): Purchasing from multiple sources following different pathways (e.g. per region)

Aside from single and multiple sourcing, a delegated sourcing strategy is also something which can be considered. It is known from the automotive industries and involves making one supplier responsible for the entire process, as opposed to one individual part. This key supplier, becomes known as a first-tier supplier, and works with all the other suppliers to complete the product or service (26). The focus on working with one supplier, as consumer or organisation, enables the buyer to work closely, to reduce transaction costs. This increased dependence results in exchanging more detailed information around cost issues, and more over gives the key supplier more authority and control over the process. A disadvantage is the possible creation of ‘mega’ suppliers that become very powerful, with the negative result of price

increases. This strategy, of delegated sourcing, is often used by organisations to reduce supply base or optimise the supply base (26).

This is in line with the first sourcing lever described by Hespings & Schiele (2016) (see Figure 5). Whom illustrated four activities, which also included concentrating volume on one or a few suppliers, with the aim to reduce the number of suppliers (20). An underlying motive, to bundle volume, is a less complex supplier base, with lower transaction costs due to less negotiation, fewer communication channels and finally problems that can better be traced (59).

This strategy of delegated sourcing is accompanied by the consideration to opt for turnkey or partial subcontracting. In the case of turnkey subcontracting the responsibility of the execution of the total assignment or service is placed with the supplier. In partial subcontracting the assignment is divided in multiple parts that are contracted out separately, to different suppliers. Advantages of the turnkey option is that limited interference of a designated principal is required, as opposed to partial subcontracting in which a principal needs in-depth knowledge and experience about all of the aspects of the process. Partial subcontracting, on the other hand, provides better insight in cost/price structure and better grip on suppliers and materials used, which results in lower overall costs (15). Finally, in the case of subcontracting the degree of subcontracting should be considered. If a key player decides to cooperate with other suppliers, the amount of activities this key player is allowed to subcontract, for example 50% or over 50%, should be decided. This could offer opportunities for organisations that do not have the capacity to deliver a total solution by themselves, but do have the competence to manage an entire network (33).

Consideration 8: Use delegated sourcing strategy or contract all providers separate

Consideration 8(a): Turnkey subcontracting or partial subcontracting

Consideration 8(b): Degree of subcontracting

In selecting suppliers the current supplier base should absolutely be taken into account. Because doing business with an already familiar supplier, may save time and required resources to evaluate capabilities of possible new suppliers (16). On the other hand, using the existing knowledge and supply base restrains the possibility to new collaboration, sources and information (16). To manage and/or develop the supplier relationship a distinction can be made between commercial suppliers, preferred suppliers and supplier partners. Commercial suppliers just need to deliver the goods and services, as settled in the agreed terms (15). Preferred suppliers consistently satisfy the performance and service standards defined by the buyer (16). This preferred supplier status is mostly rewarded by an annual agreement for one year or long-term, instead of a contract based on order-to-order or by given extra responsibilities, for example quality assessment that will become a supplier responsibility (15).

The use of a preferred supplier status accompanies the type of reimbursement of providers by purchasers. Insurers use incentives to seek out competitive advantage, by offering a discounted premium to

members who agree on going to preferred providers. Using a preferred supplier selection comes along with effective purchasing power over providers (8).

Consideration 9: Use of preferred supplier selection

Finally, Van Weele (2010) discusses the consideration between a partnership and competitive bidding, for the selection part of purchasing. Competitive bidding means putting out a tender amongst a limited number of suppliers. Depending on the suggestions, the total volume of the assignment is divided over the most attractive suppliers. A partnership on the other hand, creates a mutual commitment in long-term relationship and is about the willingness to share sensitive information and additional contractual arrangements (15). This is in line with the preferred supplier status, in which a part of the suppliers could be preferred and given a partnership contract, the others are dealt with as standard.

Increase the appeal with suppliers to gain access to capacities or innovations, as a preferred supplier, is mentioned as one of the activities in the sixth sourcing lever (see Figure 5). Hesping & Schiele (2016) illustrate these activities to achieve this sourcing lever and obtain a long-term relationship which offers advantages on both sides. Other activities are making sure that the corresponding suppliers build up specific capabilities, and applying individual contract conditions. For example, in terms of general conditions, price structure or by arranging incentives (20).

Consideration 10: Competitive bidding or partnership

3.3.3 Contracting

Next to the considerations in the sourcing strategy, there are several alternatives in the decision making on contract strategy. Figueras et al. (2005) make a distinction between four types of contracts, namely market-entry, input, performance or service contracts (17, 18). Licenses for hospitals or doctors are market-entry contracts. Input contracts cover fees and salaries of personnel or service, like the provision of emergency care, in an organisation. The purchasing of laboratory services concerns mainly the choice between price agreement versus performance agreement. Performance contracts cover quality and costs. For example, targets for a GP can be specified, about drug utilization or referral rates to medical specialists. If these targets are achieved bonuses, or if not, penalties, are used as reward. In addition to a performance contract, a service contract covers the type of services that need to be delivered, which can be classified in block contracts, cost-and-volume contracts or cost-per-case payment (15, 17).

Consideration 11: Price or performance agreement

In health care both categories need to be agreed on. Monczka et al. (2009) illustrate six relevant factors to consider when negotiating and selecting a contract type (see Table 3). The first factor, component market uncertainty, refers to the variability of price conditions for major elements of the product, such as labour. The more uncertain or changeable the underlying factor, the less appropriate a fixed-price contract. Next, the choice for a contract type depends on the kind of relationship between buyer and seller. If this

relationship has been mutually beneficial, a finer degree of trust may have been developed. As a consequence both buyer and supplier are more likely to cooperate (16). Especially when organisations are more dependent on each other, trust becomes more important, additionally will require a willingness to share information mutually (15). A close relationship requires more coordination, hence more time is needed to invest in interaction, sharing of knowledge (without leaking) and might result in a possible increase in dependence through the closer relationship (67).

Table 3: Desirability of use under different conditions (16)

Environmental condition	Fixed price contract	Incentive contract	Cost-based contract
<i>High component market uncertainty</i>	Low	↔	High
<i>Long-term agreements</i>	Low	↔	High
<i>High degree of trust between buyer and seller</i>	Low	↔	High
<i>High process/technology uncertainty</i>	Low	↔	High
<i>Supplier's ability to affect costs</i>	Low	↔	High
<i>High dollar value purchase</i>	Low	↔	High

3.3.3.1 Payment Structures

Aside from the type of contract, contracting also includes payment arrangements, with possible use of incentives or sanctions (17). In health care, different payment structures are used. For example fixed-price payments or so called lump-sum budget (8), is a payment system which purchasers use for definable products, such as an ambulatory surgery, or inpatient stays. If administered correctly, such a system can control costs and improve the internal efficiency (17). Cost-reimbursable contracts, are usually based on fixed rates for equipment and labour and are, without a bonus or penalty, not providing any incentive to minimize costs (15). As opposed to fixed-price contracts, which removes economic incentives for a medical institution, such as a hospital, to exceed and overprovide services (17).

The World Health Organization stated four objectives in which providers of health care act, according to incentives created by several payment mechanisms. In Table 4 an overview of these provider payment methods and incentives for provider behaviour is presented (25).

Table 4: Provider payment mechanisms (source: WHO, The World Health Report, 2000)

Mechanisms	Provider behaviour			
	<i>Prevent Health Problems</i>	<i>Deliver services</i>	<i>Respond to legitimate expectations</i>	<i>Contain costs</i>
<i>Line item budget</i>	+/-	--	+/-	+++
<i>Global budget</i>	++	--	+/-	+++
<i>Capitation (with competition)</i>	+++	--	++	+++
<i>Diagnostic related payment</i>	+/-	++	++	++
<i>Fee-for-service</i>	+/-	+++	+++	---

As stated in Table 4 fee-for-service provides strong incentives to deliver services, it also provides incentives that lead to an overall increase in the cost of the system (25). An adverse effect is that providers might be inclined to produce too much care, so called ‘supplier induced demand’ (34). Capitation, a fixed sum as payment, on the other hand provides incentives for prevention and cost control. The WHO therefore states that purchasers should use a combination of these mechanisms to achieve the stated objectives (25).

The consideration of a fixed-price versus cost-based contract can be supported by the second sourcing lever, namely price evaluation (see Figure 5). This activity is mainly focussed on an analysis of the price and cost structures to establish more informed and better negotiations (57).

Consideration 12: Fixed-price or cost-based contract

Lastly, a factor that should be considered in the purchasing of laboratory services, is the length of the agreement. The longer the term of a purchase agreement, all the more suppliers will prefer to utilise cost-based contracts, due to the fact that they involve less economic risk for the selling party (see Table 3). Long-term contracts are often focussed on single sourcing, after supplier selection is conducted (54). An advantages of long-term contract is the assurance of supply and creating joint value, enhanced through the sharing of information (16). In addition, the consumer requirements can, more successfully, be realized if appropriate information is being shared between supplier and buyer (22). A disadvantage, due to an increased level of dependency on the supplier, flexible response to the dynamics in the market might be difficult to achieve, due to higher switching costs. The switching costs can include investments spent on supplier development initiatives (54). This can directly be translated in an advantage of a short-term contract, which does not (or to a lower extent) require a buyer to undertake investments. That provides a high level of flexibility to change the base of suppliers. On the other hand, in the context of a short-term contract, it might be hard to demand from a supplier to improve its operational efficiency spontaneously, in terms of cost or quality (54). For the selection of a particular type of contract with suppliers, not only the costs, risks or opportunities of a relationship should be taken into account, but the dynamics of the external environment as well (54, 55).

Consideration 13: Long-term or short-term contract

Finally, after illustrating thirteen possible considerations, regarding the purchasing of laboratory services, some considerations and sourcing levers are not discussed, for not (or for a small extent) being applicable to the case of this research.

For example, the first sourcing lever, pooling of demand, is in some extent applicable to laboratory services. But is not applicable in the definition of companies that can bundle their purchasing needs together to leverage their buying power with suppliers (57). That can be accomplished with the activity of bundling multiple requests into one package with a large volume (20). This is commonly used by buyers, who face uncertain demands and need to purchase a critical component from a powerful sole-source supplier (68). Hence, this is not a strategy in the relationship between insurer and provider, and therefore is beyond the scope of this research.

In addition, the third sourcing lever, described in Figure 5, is also not applicable to this research. Introducing new sources is not in line with the aim of Menzis to reduce the supplier base of providers that perform diagnostics. In addition, international markets could be interesting for the performance of analysis, but the front-office is attached to the location of blood analysis. At the same time, it is a tactic to improve the negotiating position, with corresponding activities as increasing the number of suppliers (and use different percentages of volume, to create gains and losses for the suppliers), or local sourcing, to provide as close as possible to the demand for the product or service (20). Especially the last one is in line with the aim of accessibility of care of Menzis towards their insured parties.

Finally, a seventh sourcing lever, described by Hespings & Schiele (2016), is about category-spanned optimisation. This is about balancing possible trade-offs between purchasing categories, to prevent any negative consequences of using one sourcing lever, on the effect of another lever (20, 57, 61). For example, the global sourcing lever might counteract the strategy of intensifying relationships with suppliers in order to profit from a local supply cluster (21). This is something to consider, in determining a purchasing strategy, and will be discussed later on in the discussion of this research.

4. Methodology

This chapter describes the methodology used to conduct this research, and answer the stated research question: “*Which factors in health care purchasing, that influence laboratory services, can be used to optimise the organisation of laboratory services?*”. The aim of the study was to provide an overview of the current situation in which suppliers offer laboratory diagnostics, in a main part of the core work areas of Menzis (in Dutch; kernwerkgebieden (KWG)), alias Groningen, Achterhoek, Twente, de regio Arnhem-Ede-Tiel (7). Subsequently determine which determinants in the purchasing policy influences laboratory services, to sort out if the organisation of laboratory diagnostics can be optimised with the use of another purchasing strategy.

To answer the stated research question, with the corresponding sub-questions, a design of qualitative explorative research was chosen. This approach is most suitable given the fact that the subject of purchasing health care activities, especially primary care diagnostics and experience of involved stakeholders, has not been examined in detail so far. In addition, this study is carried out at request of Menzis, which expressed the need of stakeholders input.

This master assignment was based on collecting empirical data on contracting, interviews with stakeholders, (cost) analysis of current situation and data analysis. The methods will subsequently be explained by type.

4.1 Situation analysis

First of all, the current situation was brought into view. An overview of the current situation is created by gathering available documentation on the purchasing function of the health insurer, as well as documentation on the current organisation of primary care diagnostics. In addition, insight was gained into the daily practice by meeting with several employees of Menzis (product experts, region and project managers), attending general brainstorm sessions and every two weeks a working group of the primary health care purchasing department. Next to the previous methods, three organisations, involved in the organisation of primary care diagnostics, have been visited. There has been chosen to visit a hospital, a collaboration between an EDC and hospital and finally a typical ‘front office’ party, to generate a broad impression of the players in the field. This situation analysis aimed to give an answer on sub-question 1 and 2 by providing an overview of the current size of primary care diagnostics (including costing structure), gain insight in the test request process, and illustrated the role of involved stakeholders. Moreover, an overview of phlebotomy facilities network, and corresponding providers in work area ‘Oost’, were plotted. For this plotting SAS-Visual Analytics (data visualization software) was used.

4.2 Literature research

An analysis of scientific literature and reports is used to identify purchasing strategy options. There are different basic forms of primary care diagnostics, it is important to analyse which forms are applied in practice and what is known from literature. The different outcomes and possibilities are assessed and used to determine if they are aligned with the preferred scenario of Menzis. In addition several applications of the different strategies are reported and connected to each other in one general overview.

The literature research started with using different words and definitions of purchasing, see Table 5 for an overview of the terms used. The literature research was conducted in research databases of FindUT, Scopus and Web of Science. The literature research aimed to give an answer on sub-question 3.

Table 5: Used search terms in literature research

Search term (used separately or combined)	Related terms	Detailed
Laboratory services	Diagnostics Blood collection Clinical chemistry	Venipuncture network Phlebotomy facilities
Purchasing	Sourcing Procurement	Tender Contracting Preferred providers
Organisation	Consolidation Network Bundling volume	
Health care	Primary care	Reimbursement diagnostic Quality of care Payment system
Strategy	Managed competition	
Considerations	Alternatives Improvement opportunities Specifications	Consideration in: Suppliers Contract management Market strategy Market approach

4.3 Interviews stakeholders

In order to get more insight in the roles, responsibilities and needs of the different stakeholders in the organisation of diagnostics, stakeholders and at last Menzis employees were interviewed. In total ten interviews were held, which included in total twelve respondents, coming from nine different organisations (three of a hospital, three of an EDC, and three of other organisations). In addition to the interviews, the researcher also held three practical visits, as mentioned before. An overview of the stakeholders, of the interview and practical visits, is provided in Appendix VII.

The format of the interview was qualitative semi-structured, in order to ask profound questions on the main experiences, possible difficulties and responsibilities of the stakeholders in the organisation of diagnostics in primary care. In addition, with the semi-structured interviews insights were gained on the interests of the different stakeholders, and potential benefits or pitfalls of a possible transition to another purchasing strategy. The interview guide is included in Appendix I.

To identify the current stakeholders, within the supply chain of laboratory blood collection in primary care, exploratory conversations with multiple employees of Menzis were held. The different stakeholders are approached via e-mail with an informing letter to ask the respondent if they wanted to participate. This informing letter can be found in Appendix IV.

The interviews were held face-to-face at the work location of the respondent. All stakeholders were informed in advance about the interview and had the opportunity to ask questions up front and at the end. In addition, before starting the interview, the goal of the interview and research was explained and the participants were asked for permission to audio-record the interview. An overview of the preparation of the

interview is illustrated in Appendix III. Finally, an informed consent was signed, which can be found in Appendix II. With the exception of two, all interviews were audio-recorded, and carried out by one researcher.

4.4 Data analysis

The results of the interviews were transcribed verbatim, leaving out surplus details like colloquialism, pauses, repetitions and stutter. The transcripts were processed anonymously (except for the function and corresponding organisation). For the analysis of the transcripts Atlas.ti (version 8.2.3) was used, in order to generate a more systemized and transparent analysis process (51). The method of inductive coding was used for the analysis, to yield more valid results and find possible relations between the interviews (52). By inductive coding a coding scheme was created, which is used for analysis, and can be found in Appendix V. Only one researcher was involved in the coding process. If necessary the codes and sub-codes were revised and evaluated during the transcription process.

Finally, the results of the interviews are assessed against the relevant information found in scientific literature. Based on the results of the literature review and the interviews, the scenario analysis was conceived.

4.5 Scenario analysis

The literature review and stakeholders input resulted in thirteen considerations in purchasing that are applicable on the case of laboratory services. Based on these considerations and experienced difficulties by stakeholders, three scenarios for Menzis were drafted. The first two scenarios were created by chronologically walking through the considerations, and describe conflicting or matching considerations. The third scenario is based on the difficulties expressed by the stakeholders in the interviews. With the aim to tackle these difficulties and in that way conduct optimisation of the organisation of primary care diagnostics.

The employees of Menzis were asked to provide feedback on the drafted scenarios. The provided feedback was considered in a renewed version of the scenarios, resulting in three supported and useful scenarios for Menzis. The drafted scenarios for purchasing primary care diagnostics in the Netherlands aimed to give an answer on sub-question 5 “*Which adjustments in the purchasing process can be valuable for Menzis in the procurement of laboratory services?*”.

5. Results

This chapter shows the results from the studies described in the methodology. First the results of the analysis of the current situation will be described, with numbers and figures. In addition, the results of the semi-structured interviews with different stakeholders are given.

5.1 Current Size Primary Care Diagnostics

The main aim of this data collection gain more insight in the number, location and availability of phlebotomy facilities (number of providers in an area).

Table 6: Numbers defining current size of diagnostics in the Netherlands (source: 'Zorgkostenmonitor' Menzis, 2018)

	2015	2016	2017
Number of phlebotomy (incl. thrombosis service+home visit)	3.377.787	3.540.087	3.391.451
Average costs per phlebotomy in the Netherlands	€ 22,45	€ 21,34	€ 20,84
Number of providers laboratory tests (with turnover of > €100.000,-)	124	127	121
Total turnover laboratory tests (excl. thrombosis service+imaging diagnostics)	€ 75.843.141,42	€ 75.537.127,54	€ 70.668.952,75
Percentage volume laboratory tests relative to total primary care diagnostics	94%	92%	93%
Number of insured persons of Menzis, that utilise diagnostics, region 'Oost'	585.338	637.475	644.863

As is illustrated in Table 6 the average costs of phlebotomy is decreased over the last three years. This also accounts for the number of providers of which had a turnover of more than €100.000,-. In Figure 6 the phlebotomy facilities in work area 'Oost' are plotted. This consist of a total number of 743 locations, facilitated by twelve different providers. The different colours represent the twelve different providers of diagnostics, and the size of the circle (varying from one to three) represents the number of providers located in the same 4-digit postal code.

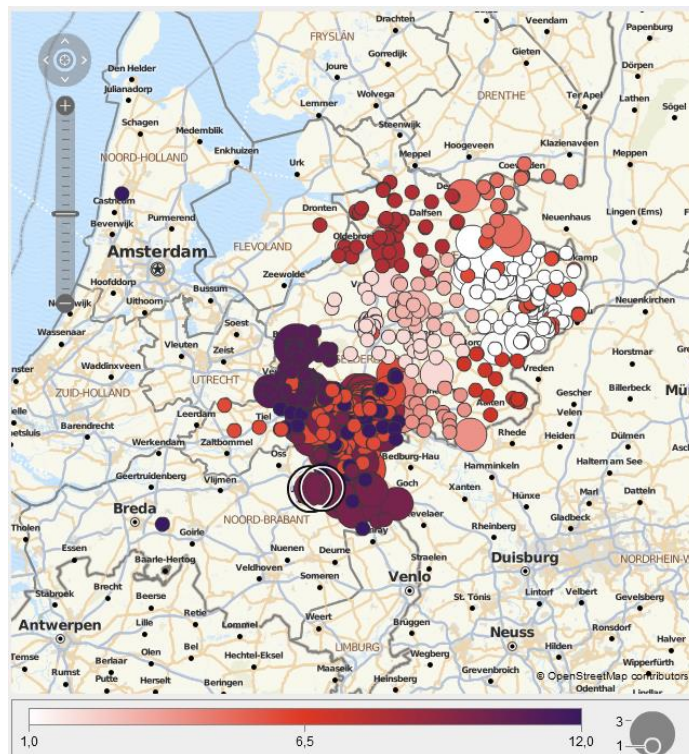


Figure 6: Plotting of all phlebotomy facilities in work area 'Oost'

5.2 Interviews

The fourth sub-question is answered in this paragraph, namely ‘*What are the effects and/or barriers of changes in the way of contracting laboratory blood analysis from the perspective of all relevant stakeholders?*’. The interviews show different opinions on the organisation of laboratory services, and additional responsibilities and interests. First of all, some overall findings are clarified. After that the results of the interviews are explained per consideration, followed with additions and general difficulties, experienced by the respondents. A final advice on the considerations will be explained in the discussion (the next chapter).

5.2.1 General findings of interviews

In general the respondents of the interviews acknowledged the importance of accessibility of health care. Opinions are divided on the way diagnostics should be arranged in the Netherlands. This is because the different stakeholders, working in a variation of organisations, all have their own personal interests. In addition to the accessibility of care, there was consensus among the stakeholders on the importance of diagnostics. This is also illustrated in literature, in which evidence showed that primary care (in contrast to specialty care) is associated with a more equitable distribution of health in populations. In addition, proper functioning of primary care prevents illness and death (71). Especially when a regional approach is applied, according to the stakeholders, with the possibility to reason on a higher level than the several divisions of care, and eventually preventing of performing an unnecessary test. This is concluded with the following citation:

“We are very closely involved with the care process and the journey of the patient in this process. That makes primary care diagnostics unique.”

This goes hand-in-hand with the assumption of the stakeholders that diagnostics is somewhat underappreciated. It is described as ‘water pouring from a tap’, it is simply present. But essentially, if diagnostics is carried out at the right time and place, extra treatment or hospitalisation can be prevented. And according to the respondents in the interviews, there is a role for the health insurer. To make the importance of primary diagnostics more visible, and find out what useful alternatives can easily be performed in primary care, which is now carried out in secondary care. To achieve the main purpose of keeping the healthcare in the Netherlands at an affordable level.

5.2.2 Summary of considerations

Table 7: Summary of results presented per consideration

Nr.	Description consideration	Current situation	Possible new situation	Reasons for implementing changes	Reasons for not implementing changes
1	Full or non-full service sourcing	Full service	Non-full service	<ul style="list-style-type: none"> Better specialised providers of care (improvement of quality and error reduction) 	<ul style="list-style-type: none"> Quality of care at stake, if consistency in the supply chain will be disrupted Inefficient communication Increasing costs due to extra registration
2	Appropriate mode of communication between supplier & insurer	Depending on size of supplier and being selected as preferred supplier	Better distinction can be made between different types of providers	<ul style="list-style-type: none"> Collaboration on innovation Partnership Gives more options for improving quality 	<ul style="list-style-type: none"> N/A
3	Focus on input or output	Focus on input	Focus on output and outcome	<ul style="list-style-type: none"> More stimulation of prevention More innovation and new developments 	<ul style="list-style-type: none"> Focus on input gives more assurance and clarity about the definition of the purchase (and provides the predictive value) Defining outcome measures, and subsequently assess on the base of outcome can be complex
4	Operational Excellence, Product Leadership or Customer Intimacy	No concrete division or balance between these three factors	These three factors taken into account for selecting a supplier	<ul style="list-style-type: none"> Operational excellence in hospital Customer intimacy in EDC 	<ul style="list-style-type: none"> Less flexibility/limited operation time of EDC Limited 'knowledge' of primary care present in hospital
5	Local or national source	Local approach in purchasing diagnostics	National sourcing of analysis	<ul style="list-style-type: none"> Analysis can be performed in the whole country 	<ul style="list-style-type: none"> Microbiology regional task of prevention Regional approach desirable for creating integrated offer
6	Big or small supplier	N/A	Big supplier	<ul style="list-style-type: none"> Developments of collaborations among providers to increase capacity Negotiations preferably with a limited number of providers 	<ul style="list-style-type: none"> Patients' needs should be main priority, as opposed to scale of operations, given the assumption that a larger scale may lead to lower attention for customized care
7	All or selective sourcing	All suppliers are contracted, given the duty of care (multiple sourcing)	Purchasing selectively	<ul style="list-style-type: none"> Suppliers would like to be awarded according to performance 	<ul style="list-style-type: none"> More difficult to apply (more transaction costs for contracting and difficulties regarding duty of care)
8	Delegated sourcing strategy	N/A	Preferably primary care provider as main contractor/first-tier supplier	<ul style="list-style-type: none"> Link between applicants and back office Possible reduction of number of contracted suppliers Unburden individual GP's 	<ul style="list-style-type: none"> Distribution of power, becoming independent from main contractor more than you would like Less insights in details of purchase/activities

Nr.	Description consideration	Current situation	Possible new situation	Reasons for implementing changes	Reasons for not implementing changes
9	Preferred supplier	Applied, 30% of suppliers is selected as preferred	Make a better distinction between providers	<ul style="list-style-type: none"> Needs identified among providers 	<ul style="list-style-type: none"> N/A
10	Competitive bidding or partnership	N/A	Preferably partnership, and competitive bidding back-office	<ul style="list-style-type: none"> Same arguments as applied for long versus short term 	
11	Price or performance agreement	Price agreement	Performance agreement	<ul style="list-style-type: none"> Same arguments as applied for focus on input or output 	
12	Fixed-price or cost-based contract	Combination of both	Preferably fixed, on prices for analysis (back-office), suggested by the insurer	<ul style="list-style-type: none"> Reducing variation in price among suppliers Less negotiation is needed for agreements 	<ul style="list-style-type: none"> Negotiable part is needed to make a difference and possibly reward supplier Variation geographically and in health population makes it difficult Agreed on fixed price for a package of agreements, may result in no transparency (or to a lower extent)
13	Long- or short-term contract	Depending on being selected as preferred supplier	Long-term contract	<ul style="list-style-type: none"> Gives more assurance to both parties on price and quality Gives more space to discuss future developments and innovation 	<ul style="list-style-type: none"> Less flexibility to respond to market changes Less incentive to improve through competition

5.2.3 Results per consideration

Consideration 1 (Full or non-full service sourcing):

As mentioned in the paragraph of the theoretical framework the scope of this research, namely laboratory services, can be divided into two different parts (front office and back office). Purchasing this separately or combining the service of front and back office in one full-service contract is often discussed among the stakeholders.

There are several advantages and disadvantages mentioned by the interviewees for either of the two options. The main disadvantage that is pointed out for purchasing the front office separately from the back office is that this separation creates a weakness in the existing supply chain. Employees of a hospital, practicing primary care diagnostics, are convinced that the quality of care might be at stake by cause of that. Arguments that are given to guarantee good quality of care are:

- The necessity of having patients' data available and close to the place of treatment, in that way a care provider has the ability to see the progress of a patient
- Consistency in reports and procedures drawn up by the involved providers

These points are essential in practice, and may be at stake according to the stakeholders, when the front office is handled by another provider than the back office. This is best illustrated with the following citation:

“You simply don't want a split or any noise in that chain, the less noise the better for the patient and cheaper for health care overall”.

On the other hand, the availability of data and regulation of procedures is an organisation exceeding issue, as stated by the respondents. Hence, it can be considered as a condition for good practice in general, rather than a disadvantage of dividing the activities of front and back office. Who should be responsible for taking care of this issue, according to the stakeholders, has not become clear during the interviews.

The previous citation is accompanied with the issue that some clinical chemists of hospitals assist GP's in quality control, installation of equipment and electronic interconnection. The clinical chemists among the respondents addressed that it is important to make arrangements on who would be responsible for this, if a separation took place. If more than one provider is involved in reporting to and assisting a GP (e.g. one party collects blood and another reports the result and gives feedback) and different methods are used in this, it may create inefficiency in the supply chain, according to the clinical chemists.

In addition to the quality of care, stakeholders think that separating the front office service from the back office will not provide any savings potential but might increase registration costs. As stated by one of the stakeholders:

“If you only have one organisation that collects and analyses the samples, you only have to register once. But otherwise you have two registration moments, and transmission. That leads to more costs as well”.

The stakeholders could not give any indication of the amount of extra costs that would be applicable. This by reason of data which is not available yet. But they are dedicated in making these potential extra costs or savings more visible for themselves and health insurers.

On the other hand, advantages of the possibility to separate the service of front and back office are mentioned as well. The arguments, mainly given by GP's that were interviewed, are related to meeting the needs of the client, in this case the patient. They are convinced that separating the two services will result in a more specialised provider of care, in both front and back office, in which patients' needs are better met (this is associated with the aspect of customer intimacy versus operational excellence, discussed in consideration 4).

Furthermore, quality of care is named as an advantage as well. Making one supplier accountable for the front office might reduce the errors in the pre-analysis. Especially in the pre-analysis a lot of mistakes are made, according to several interviewees. For example, labelling with the wrong sticker, the procedure of treating the tube is followed inaccurate, or the tube is too cold or too warm resulting in an incorrect outcome of the test. The following citation describes this:

"The big mistakes are all made in the pre-analysis. With that knowledge, making one party responsible for that, would actually be efficient. Of course you prefer to integrate it directly under your own sphere of influence. There are strong arguments for that. But when it comes to verifiable quality, only having one party to deal with is easier than 27 different organisations."

Concluding, Menzis prefers the option of non-full service sourcing, which is partly supported by the stakeholders interviewed. The assessment to be made here by Menzis, is that quality, defined by stakeholders as availability of data and consistency of reports, is the main condition. No matter the choice of full or non-full service sourcing. Primarily, EDC's and branch organisations are in favour of the suggested change. They attach weight to the importance of giving care and want to give service related functions more attention. Employees and clinical chemists of hospitals, who already have a good and efficient organised process, mainly were against the idea of non-full service sourcing.

In literature was found that the effect of a full-service contract on the performance of the product and the total costs should be considered in this (33). For example, purchasing the full service of a health care provider might influence the waiting time, quality of care or might result in none, a marginal or substantial decrease of the total costs of the service. If costs would actually increase this would contradict the statements of stakeholders, who declared that purchasing the service separately increases the costs, due to extra registration. Further research, preferably in collaboration with stakeholders in a pilot (probably an area in which Menzis has a large market share), is required to determine possible savings or extra costs for both situations.

Consideration 2 (Define appropriate mode of communication between suppliers and insurers):

Not all of the stakeholders that were interviewed have directly contact with an insurer about procedures or contract agreements. This depends on the function of the interviewees, which differed between clinical

chemists, regional manager of a front office, GP or business manager. Discussions on the actual purchasing of care is on another level. In addition, the level of contact is also determined by the market share of the insurance company engaged in the specific region. Hospitals or other health care institutions mostly negotiate with the largest insurer in their region. Insurers operate similar, they exclusively have 'physical' appointments with suppliers with the largest turnover of minimum twice a year. The contracts with the smaller suppliers are discussed by e-mail. Ideally, Menzis would want to create a partnership with a few large suppliers, with whom future prospects can be discussed, rather than only discussing money. However to do so, according to Menzis, more capacity among insurance companies is needed or the number of players on the market should be reduced.

The contact that the interviewed stakeholders did have with health insurers was mainly experienced as positive. Especially technological developments were discussed in this contact, for example developments in point of care testing (POCT). It is desirable to maintain this contact and even increase the number of contacts on this subject. This is illustrated as followed:

“When it comes to new forms of financing, supporting these kind of contacts, especially for diagnostics in primary care, this should happen on a regular basis with buyers of health insurance parties. And then discuss how we can A) test our new ideas and B) engage them, so that you use people and resources more efficiently.”

The interviewees do admit that this contact has changed. Formerly health insurers are seen as keeping tight control of the finances, with a disadvantage that the effort was mostly done in controlling costs, instead of innovation and quality. And still the providers of health care that were interviewed argue there is not enough slack, as institutions are wrongly grouped together and treated in the same way. The way insurers are portrayed is described with the following citation:

“Of course, especially costs are naturally controlled, they look for the lowest price in the market, and apparently it is possible, thus that price is applied on everyone. But of course you cannot put everything under the same umbrella, one organisation is more innovative, or wants to innovate more than others, and that comes along with needing more money”.

Stakeholders suggest that a health care insurer should open up to the various health care providers, and in agreement discuss what is most suitable for the patient. Preferably working together in a partnership than a market that is dominated by tough negotiation. Increasing the number of contacts and transparency might help this collaboration in the future. The majority of the interviewees confirm this willingness for cooperation. Except for the GP's, they all were of opinion that contact with a health insurer, related to (financing) diagnostics, is not a priority on their agendas.

Concluding, as a health insurer, more distinction can be made between different types of providers. This may take the form of rewards (payments or extra contact opportunities) or penalties. This depends on the sort of collaboration that is sought. But possibly yields more incentive and reward for

innovation. Additionally, more efficient use of time by the health insurer is realised by this distinction made among suppliers. Transparency of both parties is needed in this, as stated in the literature research, and the majority of the stakeholders did declare having the intention to work in a more close collaboration with the health insurer. Literature also stated that suppliers may contribute significantly by bringing in their knowledge and skills, in writing the specifications of the product (27). Except for the GP, who would rather not be bothered by extra factors than which currently take place.

Consideration 3 (Focus on payments based on input/throughput or output/outcome):

Diagnostics in health care is currently financed by maximum tariffs, set by the NZa. Stated by the stakeholders, the field of diagnostics in primary care is characterised by an enormous amount of tests, which all have a unique code and tariff. These tariffs are based on weighted average cost prices, provided by the health care organisations.

The professionals that were interviewed, especially associated with EDC's, stated that it has been hard to provide care nearby the patient, due to still falling tariffs. Consequently organisations loose the capacity to provide (enough) service points to meet the clients need. This was stated as a negative effect of focus on costs instead of quality. Although this stimulated the players in the market to identify partners for cooperation, which was observed by Menzis.

Furthermore, the stakeholders stated that diagnostics is mostly taken for granted, and this might be a reason why, in contract negotiations it has been given a low priority. The following citation illustrates the way stakeholders, employees in hospitals, experienced this:

“The delegation, in negotiation, mainly focusses on the general care, and then at the very end, oh that's true, we also have to check primary care diagnostics”.

However, this goes hand-in-hand with the difference between primary and secondary care. As stated by the stakeholders, the costs of diagnostics is more insightful, due to performance funding, than diagnostics in secondary care. This is often considered to be a source of frustration, especially for the providers of primary care diagnostics, because they are certain that proper application of diagnostics will reduce costs and prevent unnecessary hospitalisation. As stated by a stakeholder as followed:

“You can explain very well, a car drives back and forth costs this much, but what does it generate? And why? And with that the question rises, what does this mean? And what time, how soon, are we going to help that patient? I cannot prove it yet, but this way of working has an influence on the unnecessary referral of patients to secondary care. I know that for sure”.

The respondents of this research did have some suggestions, in what way this could be improved by the influence of a health insurer. The focus is mainly on costs and less on quality and comparability between providers. The stakeholders agreed on the fact that a health insurer is responsible for the affordability of

health care. But they also indicate that other financing models are needed to stimulate prevention, instead of focussing on volume and costs. This trade-off is best illustrated with the following citation:

“Then you have to implement other financing models, do I need to get paid because I have carried out a potassium, cholesterol test. Or do I need to get paid because I have contributed in a result which ultimately has been beneficial for the health of people. Thus, do you need to be financed on output or per performance”.

Most of the stakeholders, in the context of prevention, prefer the focus on output. Because they consider themselves to have a prevention task, next to the task of diagnosing. They suggest for example a kind of regulation based on population management, including the corresponding risks in that population. But the practical interpretation should be in alignment with a health insurer. Menzis acknowledges the fact that there is limited attention to the idea of value-based healthcare. This certainly can be improved. At present, they only look at declarations, which mainly addresses the efficiency of the care that is carried out. Menzis rather prefers to steer on outcome measures, for example performances related to the amount and the approach of people carrying out phlebotomy. Menzis concluded that the reason for this limited attention is accompanied by the number of institutions with whom they have contact. Suggested by Menzis, this probably asks for a different organisation structure of the health insurer or the provider, or both.

Concluding, currently there are a lot of negative effects experienced by the stakeholders because of the focus on input, rather than output. Menzis did declare that diagnostics in primary care, because of the performance funding system, has a predictive value, and for that reason an added value for secondary care. However, the exact added value in concrete numbers is not available yet, but could be a helpful insight for both suppliers and insurers in their negotiating position. Further research is required to gain more insight in this added value. Moreover, a focus on input gives more assurance. Because if you describe specifications based on input, you know for sure what you get as buyer, it gives more clarity. With the disadvantage that innovation and prevention is harder to define, and probably less stimulated. And subsequently, measuring on the base of outcome can be complex.

The interviews confirmed what was already described in literature, namely that there is mainly a focus on input, because no sufficient output/outcome data is available (31, 32). Stakeholders acknowledged this was due to a lack of time and capacity, which is needed for this. This lack of information on the current situation can be seen as an obstacle to implement a change in the purchasing strategy. Suggestions to consider as a health insurer is to focus on gaining this data in long term collaboration with suppliers. Because suppliers of care can play an active role in stimulating and facilitating the coordination on patient outcomes (14).

Consideration 4 (Operational Excellence, Product Leadership or Customer Intimacy):

In conversations with different stakeholders the preference for different types of organisations was often mentioned. All of the stakeholders agreed on the fact that diagnostics in primary care, for example

requested by a GP, has a different function or purpose than diagnostics executed in a hospital. The following citation describes this difference:

“Diagnostics is carried out with the intention to exclude something else is going on. Excluding something, as a GP does, is really different from, trying to find out, down to the minutest detail, what is going on. Whenever you follow a treatment of specialist care.”

This different function is accompanied with the negative effect that hospitals see performing diagnostics as a ‘cash cow’, according to employees of EDC’s. Thus a way to easily earn money without giving the extra attention, which is needed by primary care providers. Especially primary care providers stated that this extra attention is essential for diagnostics carried out in primary care, which is not self-evident in a hospital environment.

What is described as an advantage in the organisation of primary care diagnostics in a hospital environment is the 24/7 availability of materials, because a laboratory is already present for operation rooms (OR) and intensive care (IC). In addition, a hospital already consists of a network of care providers working intensively together, with (in some organisations) one medical integrated record, which makes it possible that information of a patient is always available. This integration for both primary and secondary care, because a hospital can look across the different departments, gives a continuous and complete picture of the patients and prevents the appearance of double diagnostics. These factors contribute to operational excellence of laboratory services. The inflexibility of an EDC can be derived from this citation:

“So if a GP has a problem, you will notice this at EDCs, if they have carried out tests and you want to know something about a patient on Saturday morning, that is not possible because they are closed.”

Nonetheless, a disadvantage of a hospital environment is the experience of feeling like a ‘patient’. That indicates that a service point is more preferable than visiting a hospital. In addition, the actual knowledge of the needs in primary care, is more present in EDCs. With EDCs having primary care providers, like a GP, employed. This consideration between knowledge and availability is described with the following citation:

“Hospitals will all tell you the same, come down to us because we still run 24/7. In itself they have a point, but knowing the market, really understanding the needs in primary care, is far to be bound at hospitals.”

An EDC is described with other kinds of advantages and disadvantages. First of all, it is described as an advantage that an EDC has one clear goal, that all takes place in one location. This comes along with reliability and speed, which is not easy to find in a hospital, according to stakeholders. This would be accompanied with the knowledge of needs in primary care, which is present at an EDC, which provides a connecting role. On the other hand, the overall impression is that concentration of performing diagnostics is

further being implemented in the Netherlands. Hospitals are considering to dispose the laboratory, and privatise the laboratory services. Likewise, EDCs and hospitals are seeking collaboration and start up a combined diagnostic service point or laboratory.

Furthermore, the most distinguished feature of an EDC is that a patient takes centre-stage. In collaboration with a GP they want to guarantee an all-round advice for the patient. So, this focus on customer intimacy is priority. This drive is explained with the following citation:

"Above all, we want to ensure that this network of service points stays, guidance provided at the front about the application of proper diagnostics at the right time, and the interpretation of outcome at the end, is all well organised. Who actually performs the analysis in a factory, doesn't matter to us."

All of the stakeholders touched upon the matter of technological developments, which indicates adjustments in the current organisation of health care. Patients become more empowered, with developments in health care monitoring apps and tests provided by multiple suppliers. This requires extra guidance for professionals, as stated in this citation:

"At the same time, you see that technical possibilities are increasing, it is becoming more and more complicated for professionals to deal with this. Guidance in this preliminary phase about when to use which tool, becomes more important."

For the future the stakeholders suggest that further support for innovation is needed from health insurers. The current role of laboratories is partly disappearing, because the patient can do more things by himself. It seems that hospitals, overall, have more capacity to do innovation, instead of EDCs. And stakeholders indicate that shifts in this market will continue, probably in which organisations will specialise their services and/or products. Nowadays, there are organisations that only offer the front office services, for multiple hospitals in an area. But stakeholders suggest that EDCs could, in the future, be more specialized in particular innovation and tests that needs special attention and service, and hospital laboratories can assume the larger volume of regular tests.

In conclusion, for Menzis as a health insurer it might be beneficial to take these three factors into account, for selecting a supplier. As stated in theory, a strategy depends on factors like user preference, market conditions and corporate objectives, which all were addressed by the stakeholders in the interviews. Every respondent provided arguments and mainly advantages of the organisation's own business operations. For instance a GP highlighted the importance of customer intimacy, as well as the EDC's which also stated that the patient is the central focus. Furthermore, the respondents from hospitals stated being the most suitable partner for operational excellence.

Menzis should consider these aspects in selecting a supplier, and possibly could combine the different fields of excellence of suppliers, to gain a better overall service for the client. Because the interest

of a client is always put in as first, but Menzis is torn between meeting the interest of healthy clients, who want the best price, and ill clients who want the best quality.

Consideration 5 (Purchasing from local or national source):

Overall the stakeholders did not give a strong opinion on whether a local or national approach is preferable in the organisation of diagnostics. They did all acknowledge that there is consequent oversupply, which could be lowered.

Some of the suppliers did recognise a dilemma, between a regional or national approach. One respondent actually asked the question how sensitive carrying out diagnostics actually is to regional suppliers. Because blood samples could be collected in the north of the Netherlands, and easily transported and analysed in the middle of the country, the results will be send back digitally anyways. The main condition in such a case, as stated by the respondents, would be that agreements are made on how, which and in what condition patient material is being treated. But there is a difference between specialisms in diagnostics, as stated as followed:

“With blood analysis this would be easier, I think, a further concentration could be possible. As opposed to function tests and diagnostic imaging, that requires more regional parties that offer it.”

But on the other hand, stakeholders agreed that diagnostics need to be done where demand is present. In other words, things that are necessary to do in a GP practice, at home or in a hospital should still be possible to do there and should not be moved. Furthermore, regional differences are large, especially geographic differences in population. This is associated with the different specialisms, especially microbiology, that apart from diagnostics for an individual patient, also deals with a number of public tasks, like epidemiology and risks of disease outbreaks. In addition the stakeholders stated that a regional approach, with an integrated offer of health care (preferably collaboration between different specialisms of diagnostics), is preferable for the patients’ interests and creates added value. This added value is necessary to gain information for steering to the right treatment or no treatment at all.

In conclusion, there is consensus among stakeholders that further improvement of the concentration of blood analysis is possible. Nevertheless, they are not very eager to commit to such a plan, mainly because that will put their own business at risk. With the exception of the specialism microbiology, of which was established that the public task is important and should therefore also function at local levels. This corresponds with findings in literature, which stated that local sourcing is preferable when intensive personal communication is required in the supplier relationship (15). Of course this intensive communication is between care providers, health insurers facilitate that communication. In addition, all stakeholders agreed that the accessibility of care is more of a priority than the sort of supplier who provides the care, including Menzis. Menzis rather seeks for multiple national providers with the assumption that a scale up of activities yields a savings potential.

However the over amount of service points, a negative consequence of competition according to the stakeholders, was often mentioned. Collaboration in providing a service point is already pursued by some providers. Likewise collaboration is pursued to scale up the activities of diagnostics, under the pressure of health insurers.

The question arising, out of the dilemma of consideration 5, is what would be the optimal scale for a laboratory or front office provider to operate in. A health insurer is in favour of having limited negotiation partners, rather than over the 100, or just one in which affordability might be at stake. Stakeholders also see consolidation could be elementary for a more efficient business operation, which indicates they face the need to increase their scale of operations to guarantee quality without compromising on continuity and providing service. Besides, upscaling of operations increases the capacity of an organisation, that could carry and stimulate innovation in this market.

The main concern of upscaling the activities of providers would be that the patient's needs cannot be met adequately. This concern is expressed in the following assumption described by one of the respondents:

“Perhaps it is similar to a Media Markt versus a small trade store, they are handling their customer with a little more care, to find out what the problem is. While the anonymous, results in the fact that you can offer less in terms of service.”

By all means, this is an assumption, such a statement depends on the individual care provider, but respondents did want to make clear that there is a limit in upscaling health care activities.

In conclusion, the number of service points can be decreased, or at least providers could cooperate more in that area, and the performance of analysis can be scaled up. Possibly this can be accomplished by stimulating collaboration among providers (current situation), or by contracting more selectively (see consideration 7) if collaboration is not realised (possible new situation).

Consideration 6 (big or small supplier):

This consideration is barely mentioned in conversations with respondents or employees of the health insurer. Also purchasers of Menzis did not express a clear view on either of the two options. There is no objection to a small player, if it is comparable to a bigger one regarding price and quality. Except for the fact that in contract management it is more preferable to have negotiations with a low number of providers. This confirms the assumption that a few large suppliers would be most preferable to contract. Or at least a minimum number of suppliers with the option of expanding, according to Menzis. According to some of the stakeholders patients' needs should be main priority, as opposed to scale of operations. This assumes that a larger scale will decrease the ability to serve patients' needs. By all means, this depends on internal organisation. On a larger scale/capacity different specialists can be deployed, as opposed to a smaller scale in which one general care provider might be less able to gain in-depth knowledge.

In the literature review was found that size of supplier becomes an essential factor when one firm decides to purchase its service or product from only one or a few suppliers (16). Considering that the

supplier must have the ability to service multiple geographic locations (63). This could be a strategy if volume is bundled for the analysis in one or a few laboratories. This is in the current situation of blood analysis not the case, so not a relevant consideration for Menzis.

Consideration 7 (all or selectively contract suppliers):

Especially from a health insurers perspective this consideration is frequently addressed. Stakeholders indicate that, for carrying out diagnostics, or providing care in general, health insurers can be more critical towards health providers. This is pointed out by the following citation:

“Because, if I make a difference, and someone else does not, and eventually we both receive a contract, why should I make that difference? So, a health insurer should be able to help and steer in this.”

In addition, the majority of the respondents stated that the role of a health insurer is to decide where health care can be purchased, for the best price. Nowadays the focus is mainly on costs and less on quality, so to award or penalise the providers, they agreed that the idea of benchmarking laboratories for their services is desirable. Especially to stimulate innovation because that is something where you can benefit from together, as health insurer and provider.

The main difficulty in this case, raised by Menzis on different occasions, is that Menzis is obliged to the duty of care (in Dutch: ‘zorgplicht’). This is established in the Health Insurance Act, which states that it is an obligation of a health insurer that an insured person receives the care, or a reimbursement of the costs of care, which he or she needs and is legally entitled to (48). In the Netherlands, healthcare insurers are obligated to reimburse up to 75-80% of the cost of non-contracted care (56). So, the increase of costs for patients due the non-contracted care, and the duty to arrange and finance delivered care in the region, makes it difficult to purchase selectively. And is a reason for a health insurer to act reluctant regarding this consideration. Especially for the front office, in which different options and accessibility of care is priority. Back office, on the other hand, might be more suitable for contracting selectively.

In conclusion, this is not a consideration for Menzis which is feasible in the near future. To do so in conversation with organisations responsible for regulation, e.g. the government, should be established that this could of positive influence for the supplier market of health care. Or in agreement find other stimulus to direct patients or GP (with financial incentives), or cap further growth of organisations providing diagnostics.

Consideration 8 (Delegated sourcing strategy):

Menzis prefers to bring down the number of suppliers, with whom negotiations are planned. For that reason, contracting a limited number of parties and giving them the opportunity to subcontract other stakeholders, is a desirable idea for Menzis. From the insurers perspective a front office party would be preferable for being the so called first-tier supplier, because that party can be the link between applicants of diagnostics and a back office party.

Stakeholders suggested in the interviews that such agreements are already in practice for care groups (in Dutch: 'zorggroepen'). Through the introduction of integral funding, care groups have been created to organise and provide chain-based care, care for chronically ill patients. GP's play a key role in this, being a primary care provider (47). In practice this works as follows, the care group makes an agreement with the health insurer on what healthcare for diabetics in a GP office entails. Hence, the care group arranges the contract for the GP and receives the money for it. In turn the care group contracts the experts which are involved in the care programme of the patients, for example the individual GP, dieticians and/or podiatrists. GP's among the stakeholders appreciate this system, because in that way they do not have to negotiate with every insurer, and an insurer only has to contract one party instead of all individual GP's.

The main issue discussed is to relieve a GP of a considerable burden. GP's were very clear that they do not want to be involved in further negotiations or financial issues with insurers, and they prefer to outsource these kind of activities. This is revealed in the following citation:

"GP's have no further contact with health insurers about the organisation of blood tests. And we would rather not, we already have contact with enough people."

This confirms the general impression that a typical GP does not want to be burdened with (more) side-aspects, as named by the stakeholders and acknowledged by the GP's among the respondents. However, a GP or health care centre is considered as a possible main contractor by Menzis, being a front office party itself. This makes a GP in the lead of diagnostics in primary care. The question arises to what extent this is desirable among GP's, or possibly could be organised in collaboration with care groups. It is known, among stakeholders, that a GP is not easy to be guided, without meeting their individual needs, and not free of any compensation. Hence, Menzis needs to consider, preferably in agreement with GP's or other stakeholders, what would be an appropriate way to delegate purchasing activities. Especially possible difficulties, for example in distribution of power, or agreements on monitoring quality, need to be addressed.

Primarily this distribution of power might be an issue, according to stakeholders. Especially EDC organisations are rather hesitant of being completely dependent on a GP, for providing their service to their clients, because they prefer to meet the patient directly in the care they need. For example, serving a customer in providing an STD test, without interference of a GP, because the customer takes centre-stage. In addition, they know they cannot depend on one client or applicant of diagnostics, to survive in the business. Or in other words, stakeholders understand that it is important for diagnostics to be independent as an organisation. This seems logic, because it could be an advantage to serve customers directly, without interference, for being able to increase volume of activities. On the other hand, if an organisation want more certainty on volume, this can be established in an agreement. For example, patients have two options, and if one of the two provides better quality and is improving, extra volume/patients can be guaranteed. By all means, an individual GP or hospital always have their own interests at heart as well. Another possibility

could be, to combine volume in one independent cooperation, for example a diagnostic laboratory, in which different stakeholders are collaborating together, and making an equal and honest profit out of it.

This issue of distribution of power was illustrated in the literature review, in the form of ‘mega’ suppliers which are created. This might result in negative effects of increasing prices and a reduction in freedom of choice. According to Menzis this already occurs in some parts of the Netherlands, which results in a weak bargaining position for Menzis with monopolists in the region.

Finally, the idea of subcontracting might conflict with the Competition law (in Dutch: ‘mededingingswet’) that states that a free choice of care needs to be guaranteed for patients in the Netherlands. Previously a research is performed on the possibilities of excluding primary care providers from this Competition law, by order of the Ministry of Health. However it was concluded that this might lead to a reduction of the freedom of choice, and in addition, might create a disadvantage when competition is disabled and innovation not further encouraged (49, 50). The minister of health finally concluded that trust is the main issue in this situation, what in collaboration and conversation among providers and insurers should be further developed (50).

In conclusion, transparency and trust are the most important issues in considering the subcontracting strategy. It is feasible to arrange such a turnkey subcontract arrangement, as long as the freedom of choice is not in danger for the insured people of Menzis. The party which is most suitable for becoming a first-tier supplier is a primary care provider, preferably in a cooperation with different stakeholders. Together with the field, Menzis could design in detail what is needed and preferred in such a cooperation.

Consideration 9 (Preferred supplier):

Menzis already applies this method in the current purchasing strategy. In 2017 Menzis started to make a distinction between providers that meet all criteria in terms of quality, volume and price (so-called preferred providers) and providers that do not fully comply with these terms. As a result 30% preferred suppliers are contracted with a longer term, or multiannual agreement (maximum of 2 year), without a turnover cap. In contrast to regular suppliers, verifiable volume growth will be reimbursed for preferred health care providers only. In addition to the method of preferred suppliers, Menzis has set a minimum standard as condition for all contracted providers. For example tariffs cannot exceed the maximum standard of the NZa (30).

The assessment criteria cover the pillars of price, quality and customer. Described as a disadvantage, by respondents, innovation is missing as an assessment criterion. Hence, providers are currently not assessed on this, and thereby not stimulated. According to the stakeholders the emphasis could be more on innovation, or at least stimulation of innovation. Although suggestion of possible indicators to do so were not discussed.

In conclusion, Menzis should continue the strategy of selecting preferred suppliers, ideally make more of a difference among contracted suppliers, in which providers of care would like to be stimulated or awarded on innovation. The list of preferred suppliers could be a suggestion for selectively contracting the providers.

Consideration 10 (competitive bidding or partnership):

The option of competitive bidding, especially for the back office activities of diagnostics, is something that Menzis seriously considers, with the main aim to empower the bargaining power of Menzis towards, for them so called, monopolists. Menzis already applies this method for tools or standard commodities (in Dutch: 'hulpmiddelen'), in which Menzis submit a tender for the sourcing of these activities and/or products, where suppliers can apply for. To implement this, further concentration of blood analysis should be improved, or Menzis might find another way to stimulate the collaboration between suppliers, so that volume can be merged as a result.

On the part of a front office Menzis preferably wants to work in the form of a partnership with suppliers. Because this involves the service towards the direct client of Menzis, which requires a mutual commitment in long-term relationship and is about the willingness to share sensitive information, just as stated in the literature review. Particularly, the long-term contract gives a supplier of diagnostics certainty, and gives the opportunity and space to discuss future developments and prospects of an organisation, rather than only discussing money. A disadvantage, stated by buyers of Menzis, of this strategy is that there is less flexibility to respond to market changes. Otherwise, every year negotiating about the prices, does not provide certainty and gives a reason for a supplier to keep up his rates on a high level, according to Menzis. Stakeholders also prefer to do business with an insurer on the base of a partnership, both hospital as EDC employees stated this in the interviews. This is accompanied with the fact that every stakeholder considers its own business as most important, and does not want to put that at risk. Moreover, a partnership enhances the possibility for health care providers to expand their services.

In conclusion, this consideration is not something at short notice to examine as Menzis. Especially because the respondents in the interviews, naturally, prefer a partnership, but that is not possible due to the amount of time and capacity needed from a health insurer to realise that. But again, a health insurer could be less hesitant in enabling selective sourcing or implementing the strategy of competitive bidding, for it provides a lot of advantages as well. Considerations would be if the advantages of a partnership agreement outweighs current flexibility.

Consideration 11 (price or performance agreement):

Considering a price or a performance agreement is not clearly discussed in the interviews with the respondents. However, it does correspond with the earlier stated preference for a better focus on output rather than input. Another reason for focusing on performance rather than price is the coherence between primary and secondary care, as described in the following statement:

“Ideally, for organisation of healthcare overall, primary and secondary care would regionally and combined be contracted. In that way the effects of substitution can better be monitored and steered. Because this always has an effect on the other side”

The literature review illustrated that with the help of performance contracts targets can be established, and if they are met bonuses, or if not, penalties, can be used (15, 17). Disadvantage in this, according to Menzis,

is that reward or punishment is always retrospective, because you can only act in the following year, when all insights are available. While you rather act in the same year as activities take place.

In conclusion, it might be beneficial to further investigate the effects of performance agreements rather than price agreements in the purchasing of diagnostics.

Consideration 12 (Fixed-price or cost-based contract):

In the current situation the method of fixed-price and cost-based contracts are combined. The distribution amongst stakeholders is very clear, namely Menzis prefers to stimulate more on fixed price. Respondents of the interviews declared in general that costs based contracts is more preferable, assuming it will result in a form of financing based on population.

Menzis finds it important, in any kind of future strategy, that the variation in price among suppliers is further reduced. Or at least some agreements are made more generically, as stated in the following citation:

“You want to make at least some generic agreements, so that it is partially the same for all insured persons.”

The fact that there is any kind of variation now, is not something you can explain to your customers, according to Menzis. Moreover, fixed price agreements, especially on the part of analyses, results in less negotiation that is needed for setting up the agreements, if all the individual tariffs are fixed and you only need to discuss on two big tariffs and a lump sum amount, for example.

On the other hand, Menzis acknowledges the fact that some negotiable part is needed to make a difference between suppliers, and possibly reward suppliers for innovation, or other process optimisations. Moreover, the geographical variation of health populations, as discussed under the subheading of consideration 3, makes it difficult to set up a fixed price. This corresponds with findings in literature, which stated that the more uncertain or changeable the underlying factor, the less appropriate a fixed-price contract is.

Other disadvantages on setting up a fixed price is the absence of transparency of the actual expenses of the organisation, when for a package of agreements is settled. This is something a health insurer encounters in the so called ‘Segment 3’ agreements for general practice care. In this part free tariffs are applicable, for the purpose of health care innovation. Hence, Menzis can get no hold on this, as they declared.

Concluding, Menzis should have a clear overview of the suppliers including the corresponding health population to determine if a fixed price, cost-based or a combination of both, is most suitable for the base of the agreement.

Consideration 13 (Long-term or short-term contract):

The advantages and disadvantages of a long-term contract are to some extent discussed in the results of consideration 10. This is due to the fact that a partnership often goes hand-in-hand with a long-term agreement (16). Currently, Menzis already applies a multiannual agreement with their selected preferred suppliers (30). There are no other additions to this consideration, than has been discussed so far, found in the interviews.

Concluding, there is consensus between stakeholders and Menzis on the preference of a long-term agreement, this naturally seems the strategy for new agreements in the future with suppliers. As found in literature, and as earlier mentioned by Menzis, a disadvantage of a long-term contract, it might be harder to achieve a flexible response to the dynamics in the market, due to high switching costs (54). In addition, less incentive to improve as an organisation may be created through a decreased pressure of competition. This is something that Menzis should take into account, in evaluating if a long-term contract outweighs any reduction in the degree of flexibility.

5.2.4 Additional findings of the interviews

Alongside the individual considerations, some additional findings were revealed in the interviews. This is regarding future developments, which might have an influence on the organisation of diagnostics in the Netherlands. Moreover, the stakeholders illustrated some additional difficulties in the current organisation of primary care diagnostics (for overview see Appendix VI).

The main development in health care, overall, is the empowerment of the patient. Nowadays both the abilities of patients and developments in the general practice, keeps on growing. Especially the abilities for patients of doing diagnostics at home, provided by different suppliers (and new suppliers like Apple and Google), is seen as a positive development by stakeholders. Although, this possibly pushes up the demand, of which not every health care provider is prepared. And could have negative consequences, as stated in the following citation:

“If it leads to additional demand for care because of a slightly different result, and the GP performs additional diagnostics for that reason, it might result in extra costs.”

Nevertheless, especially GP's are very interested in such future developments, for example POCT, what makes it possible to gain results from a test through one finger prick, in a GP office. This generates a shift of diagnostics from a central laboratory to the GP office, and yields patient satisfaction. However these developments go hand-in-hand with logistical issues regarding training of personnel, monitoring the quality of equipment and sharing the corresponding results. Moreover, it might overload the activities that are already taken care of in a GP office, as stated by an EDC employee:

“It immediately gives a result, which is very customer friendly. But at the same time it results in more work at the GP office and for the GP's assistants.”

In particular, financing these developments is an issue among stakeholders. There is a need among the respondents to discuss these kind of changes with a health insurer. Due to such changes in the health care system, things arise that no one has thought about or do not know the impact of. This requires constant and intensive cooperation between providers and health insurers, as suggested by the stakeholders.

The issue of financing developments is accompanied by a discussion on the compulsory deductible, that must be paid out of pocket by the patients, before a health insurer will pay any expenses made for care. This deductible is not applied for diagnostics performed at a laboratory, but it does apply if these test are performed at a general practice. Since the introduction of this deductible, according to the stakeholders, more patients avoid health care, because it costs (too much) money. Which is illustrated as a negative consequence, because it interferes with the fulfilment of the duty as GP and often results in unnecessary or incorrect treatment. More important, this is an undesired discussion in a consultation hour, as stated below:

“How can I decide, if you have complaints, like feeling tired for a while, but you are a poor student. And then I have to decide, I will request for a test what will costs € 150 of your budget. I do not want to think about that at all. And neither do you, you should not worry about going to that GP or not, just because of the costs. These are not discussions to have in a practice.”

Initially, this is not something that Menzis can change or has an influence on. But it does indicate that Menzis, together with providers, can act upon this, in favour of the interest of the patient. Especially if it possibly results in a reduction of patients referred to secondary care, which is more expensive.

Other difficulties, like digitalisation of the request of diagnostics and duplication in diagnostics are acknowledged by the stakeholder and also tackled by them. Especially to make sure there is not just a request machine, but that preferably more providers work together on facilitating a connection and all-round advice with the corresponding result of the requested test. With the underlying objective that only useful diagnostics is performed. As example, one provider illustrated the idea of digitalising the request of diagnostics, and established with the stakeholders in the region that it would be even more preferable if a patient is in control of its own record and carries it with him/her to all the involved providers.

The difficulties of an integral approach or region-specific approach are discussed in the earlier explanation of the individual considerations. For an overview of the difficulties, see Appendix VI.

6. Discussion

This study investigated what factors in purchasing could be used to subsequently optimise the organisation of laboratory services. In this chapter the answer of the research question is presented, followed by a critical evaluation in which the conclusions will be discussed based on the results found in the literature review.

6.1 Main findings

The research question of this study was stated as followed: *“Which factors in health care purchasing, that influence laboratory services, can be used to optimise the organisation of laboratory services?”*. With the results of the literature research, interviews with stakeholders and data analysis, the five sub-questions can be answered.

Chapter 2 was aimed to give an answer on sub-question 1, *“In which way is the purchasing process of laboratory diagnostics, especially phlebotomy, organized in the current situation?”*. Based on literature research and data analysis of reports of Menzis the different roles of stakeholders are identified and an overview of the current organisation of laboratory services is provided. Based on this it can be concluded that the majority of primary care diagnostics is performed in hospital laboratories. In addition, the market of laboratory services is characterised by numerous stakeholders, in which the GP is the main stakeholder, having a ‘gatekeeper’ function in the health care system. Plotting the different blood collection locations of several providers in the main core work area of Menzis provides insights in the number and overlap of supply in diagnostics. From this data can be derived that many providers are concentrated in one place, with multiple phlebotomy locations in the same 4-digit postal code.

The second sub-question, *“What are the benefits and difficulties of the current situation regarding costs, quality and accessibility of care?”*, is not clearly answered in one particular chapter, but is addressed in multiple paragraphs (in chapter 2 and 5). Opportunities and difficulties of the current organisation are generated from the interviews. First of all, the stakeholders acknowledged the fact that the performance of diagnostics is complex and is characterised by a variation of organisations that carry out this service. Nevertheless, they all agreed on the importance of diagnostics, because diagnostics carried out at the right time and place can prevent extra treatment or hospitalisation.

A benefit of the current situation is first of all the overall well organised logistics of the individual organisations. With, in the majority of the Netherlands, one provider being responsible of the whole supply chain. This could be a hospital, EDC or other kind of organisations, as illustrated in Chapter 2. But the different organisations have their own benefits and difficulties, which will be described in possible scenarios later in this chapter. Second, the assistance of GP’s by clinical chemists, in for example quality control, is well received. Especially the evaluation by means of a DTO is something that is really helpful to maintain the quality standards, as stated by the stakeholders. Finally, the overall contact with insurers is experienced as positive, but is something that can still be improved. For example in a better and timely consultation on innovation and what is necessary or expedient in primary care.

Next to the benefits that are mentioned, difficulties are experienced in the current organisation. First of all, a high rate of mistakes is still applicable in pre-analysis, mainly by cause of human error. This includes labelling with a wrong sticker, the procedure of treating the tube is followed inaccurate, or the tube is too cold or too warm resulting in an incorrect outcome of the test. In addition, according to the stakeholders, the capacity of organisations performing diagnostics is reducing, due to still falling tariffs. This harms the provision of care nearby the patient, for example in the provision of multiple phlebotomy locations. Another difficulty, regarding financing of care, is the deductible. The fact that diagnostics, performed in a general practice, is covered by health insurance but the compulsory deductible applies, is followed by negative consequences. Namely, according to the respondents more patients avoid health care, because it costs (too much) money, which results in unnecessary, incorrect or no treatment at all. Next, the ICT applications are inconsistent and not widely used, hence accessible, for the applicants of diagnostics. Which is seen as a difficulty to provide one integrated all-round advice in diagnostics. For example, in some cases a specialist does not automatically have access to reporting of an EDC, what is considered as inconvenient and annoying. Hence, data preferably must be transferable, but the new legislation on privacy might create a burden in developments in this. Finally, according to Menzis, the varieties of prices in diagnostics is a difficulty, because it is hard to explain towards customers this varies nationally and even regionally.

Chapter 3 was aimed to give an answer on sub-question 3, *“What are possible purchasing strategy considerations to improve the organisation of laboratory services, and what are the implications of these possible purchasing strategies on costs, quality and accessibility of care?”*. By conducting a literature review possible strategies, with corresponding considerations, are outlined in this chapter. It provides thirteen considerations in purchasing that are applicable on the case of laboratory services. These alternatives are divided into three categories, corresponding the first three steps of the purchasing function, namely specification, selection and contracting. Chapter 5 examines in greater detail the different considerations, and are subsequently complemented with the results of the semi-structured interviews. Hence, to give an answer to the fourth sub-question, *“What are the effects and/or barriers of changes in the way of contracting laboratory blood analysis from the perspective of all relevant stakeholders?”*. An overview of the results are given in a summary table (see Table 7), illustrating a comparison of the current situation with a possible new situation, with related reasons for implementation or non-implementation. Interestingly, among the thirteen considerations both insurer and stakeholders are generally in agreement, with some exceptions.

The last sub-question, *“Which adjustments in the purchasing process can be valuable for Menzis in the procurement of laboratory services?”*, is answered in chapter 7 in which three scenarios are drafted. Namely, ‘non-full service sourcing (purchasing front and back office separately)’, ‘full service sourcing (local approach using a delegated sourcing strategy)’ and ‘current situation with focus on improvement’.

6.2 Relation with literature

The most interesting findings of this study are described below. Subsequently, the findings are compared with literature and recommendations are given.

First of all, to the best of the researcher's knowledge, this is the first study that investigated the possibilities in a purchasing strategy based on the experiences of stakeholders, specified for laboratory services. As result an overview of considerations are generated, specifically applicable for a health care product or service. This overview of considerations is not only relevant for this purchasing strategy, but it can be applied for the entire portfolio of Menzis. The model of Hesping & Schiele (2016), in which seven sourcing levers are distinguished, is originally developed from an industry sector. This study showed that it turned out to be suitable in the health sector as well. This model however, is more focussed on the result of a purchasing function and achieving strategic objectives, for example undertaking cost effectiveness. Table 7 in this research showed that the defined considerations are practical for a certain type of care product. This is done by indicating what is present and what can or needs to be done when change is wanted.

Opposed to literature, some considerations are not applicable in the case of this research, as outlined in the last paragraph of Chapter 3. For instance, the third sourcing lever described by Hesping & Schiele (2016), introducing new sources. This is not in line with the aim of Menzis to reduce the supplier base of providers that perform diagnostics. But this could be different for other products in the portfolio of Menzis, for example medical commodities.

On the other hand, some results of literature are in line with the findings of this study. First of all, as stated in literature offering an integrated solution to a customers' problem, gives a supplier the possibility to differentiate from competitors, with competitive advantage as result (53). This could be the reason why stakeholders preferably maintain the current form of organisation. While specialisation in one of the aspects of the supply chain might improve the quality of the overall product or service.

While literature shows several barriers towards selective contracting, e.g. insufficient transparency of quality (3), stakeholders are in favour of this idea feeling the need to be awarded if a difference is made. This complements the findings of Schäfer et al. (2010). However, as confirmed in the results of the interviews, health insurers are reluctant in directing patients to preferred care providers as they are worried about image, and possible loss of clients (3, 56). By all means, patients are given, by law, a freedom of choice and that needs to be guaranteed by the health insurers. On the other hand, this duty of care deliverance does not suggest that every provider must be contracted. The freedom of choice and duty of care can still be guaranteed with, for example, 80% of the best health care providers. Especially in the back-office, in front-office different options (e.g. hospital for more difficult phlebotomy procedures, and GP for standard) and accessibility of care should still be available.

6.3 Strengths and limitations

This study is characterized by several strengths and limitations. Which both should be considered when the results of this research are interpreted.

As stated before, to the best of the researcher's knowledge, this is the first study that investigated the possibilities in a purchasing strategy based on the experiences of stakeholders, specified for laboratory

services. This was achieved by conducting both an extensive literature research, as well as gaining qualitative results, in the form of interviews. A strength in this, is that all relevant stakeholders involved in this matter, are interviewed.

Although the number of respondents is limited (total of twelve), the researcher which conducted this study was convinced that data saturation was achieved. However, a limitation of this research is the representativeness of the stakeholders. Despite the effort to approach GPs as respondents, only a few participated in this study. While they have a key role in the organisation of diagnostics. Therefore, in further research, it could be preferable to gain more insights in this group of stakeholders. In addition, none of the respondents were ever part of the actual negotiations with health insurer. This does generate a new, and moreover somewhat unknown, perspective for Menzis. However, it could be preferable to gain more insights in this group of stakeholders as well.

It is important to note that in the semi-structured interviews, the stakeholders were not deliberately questioned about the considerations found in literature. Although this provided some new insights in the current difficulties experienced by the stakeholders, some considerations are not assessed and analysed in detail.

A second limitation is that in the recruitment of respondents selection bias might have occurred. Namely, the participants in this study did know that the research was done on behalf of Menzis, which might result in a bias of desired responses or in recruiting (because of the mail service/account of Menzis which is used for approaching stakeholders).

Finally, diagnostics carried out in integrated care (in Dutch: 'ketenzorg', e.g. chronic diseases), which falls within the so called 'M&I verrichtingen' of general practice care, is not taken into account in this research. The size of these kind of diagnostics, in comparison with overall diagnostics is not known.

6.4 Conclusion

To answer the research question, several factors can be influenced to optimise the organisation of laboratory services. This study shows that there is a possibility to make adjustments in a purchasing strategy, with the use of the previous mentioned thirteen considerations. Subsequently, with implementing any kind of change in the purchasing strategy of primary care diagnostics, the regional differences need to be taken into account. This due to the variation of practice and the complexity of the organisation of primary care, which results in interdependency between considerations. As a result, three scenarios are drafted based on the considerations and difficulties experienced by stakeholders.

7. Recommendations

The results of the scientific literature is assessed against the relevant findings of the research, and will, in this section, be converted into recommendations for further research/implementation. Especially an advice for Menzis on possible valuable adjustments on the purchasing process will be provided.

7.1 Practical recommendations for implementation

Based on the main findings and comparison with literature, trade-offs can be illustrated. Considering the trade-offs, three main scenarios are developed, and illustrated in this paragraph. Reasons for implementing, and related difficulties and/or effects are described in every scenario. An overview of the scenarios and corresponding changes per considerations are illustrated in Figure 7.

7.1.1 Scenario 1 'non-full service sourcing – purchasing front and back office separately'

For this first scenario the choice is made for non-full service sourcing. In this way Menzis contracts the providers of diagnostics separately for the front and/or back office, so that a difference can be achieved by contracting only a front office party or a back office party. In this way, quality of care might be better assessed and monitored. In addition, a national orientation is possible for a tender on the back office, instead of a regional approach of purchasing diagnostics. In which a preference could be on a big supplier, given the assumption that a big supplier has got more capacity and creates increasing economies of scale. This might result in a specialisation among providers, with preferably one or a few national supplier(s) for the analysis in a laboratory (back office) with whom a partnership relationship is established. By all means, Menzis needs to establish the necessary conditions which have to be fulfilled by the providers who are selected, and make sure they are generally known. The current criteria in terms of quality, volume and price, used for selecting preferred suppliers, can form the basis for this.

Effects of this scenario would be compared with the advantages of bundling volume. So especially focussed on cost and price management. Providers might bundle their capacity and collaborate to fulfil the service of analysis or phlebotomy facilities. By dividing the service of phlebotomy from the back office, possibly collects more insights in the aspect of costs and quality, however might require more time and attention in monitoring the contracted providers. Subsequently this requires a focus on input rather than output, and additionally a price agreement, with preference of a fixed prices set on analysis (back office). This means no change in comparison with the current situation.

Difficulties in this scenario are the rather long transition period and related transition costs, because the final users of diagnostics, the patients, need to be directed to the contracted providers. Finally, a lot of resistance from especially hospitals, according to the results of the interviews, might arise. They were not in favour of this, having already an optimised full-service product. Again, it should be acknowledged that laboratory services can never completely be removed out of the hospital, due to the 24/7 demand on critically ill patients in wards, OR and IC. The primary care diagnostic function can be located in a hospital. It depends per region, who would be the best partner for the analysis and/or the service of phlebotomy, depending on the existing networks (choice between EDC and hospital).

7.1.2 Scenario 2 'full service sourcing – local approach using a delegated sourcing strategy'

As opposed to scenario 1, in this scenario the focus will be on full service sourcing. Hence, nothing changes related to the current situation. However, in this case the option of subcontracting is possible, in which one provider is responsible for the contract, and might collaborate with other providers to cover and facilitate the full service. In this way efficiency is created by simplifying the suppliers base. The choice for the key-supplier could be based on market share, scale of activities or an already local supply cluster that is present. The findings of plotting the phlebotomy facilities in a core work area of Menzis confirms there is room for collaboration among providers and an efficiency benefit.

Important for primary care (and maybe for the choice of a key-supplier as well), as stated by the stakeholders, is that primary care concerns care in which a gatekeeper function takes centre-stage. The function of laboratory services is for the end-user, GP or medical specialist, different but that does not matter for the executing laboratories. The professional level of service for the general practitioner can vary, so a full service provider could be selected for this, but Menzis, as health insurer, should establish which criteria should be used for this.

In addition, in agreement with the key-supplier, corresponding to the area that the provider covers, an output based contract can be established. As a way to stimulate and monitor innovation and prevention. For example, could be based on a population (capitated payment), varying from a hospital with its patients taking centre-stage or a GP, or an integrated contract based on type of disease or treatment. Essential to accomplish this is good and timely consultation with stakeholders on innovation and what is necessary or expedient in primary care. Hence, could be time consuming to implement and asks for availability on sufficient data of current situation.

Advantages in this case are the use of the network that is already present, and that diagnostics can still take place in the place where it is needed. This was marked as important by some of the stakeholders. Hence, this approach can be characterised by a relational-oriented perspective, and focusses on improving the service provided towards customers, and a focus on stimulating prevention. On the other hand, it might be hard and take time to determine what organisation or provider in health care would be most suitable for the role of key-supplier. GPs, according to the interviews, were defined as not that suitable while having already a lot of responsibilities. In addition, it is important to establish as health insurer what defines quality, performing the combination of secondary and primary care diagnostics or a focus on performing mainly primary care and meet the corresponding needs of a GP.

7.1.3 Scenario 3 'current situation with focus on improvement'

In a last drafted scenario, the current organisation will be maintained. However, in consultation with stakeholders improvements on the difficulties described in the interviews can be achieved. For example, a better collaboration and consultation on implementation of innovation. Or making a better distinction between the providers by giving (more remarkable) rewards, for example long term contracts, establishing partnerships, or providing more privileges as preferred supplier. In this way, possible improvement of the current organisation can be accomplished, what eventually benefits the patients. Hence, the aim, of both

Menzis as the providers, to put clients first, can be achieved. In case of disagreement certain conditions can possibly be imposed in a contractual agreement.

Overall the question arising is what would be the optimal scale for a laboratory or front office provider to operate in. And how can further improvement of blood analysis be made possible. The effect of increases in volume, or suggestions for further improvement of the concentration of blood analysis is not answered in this research and therefore could be further explored. Therefore, a cost-benefit analysis should be performed to gain more insights in the current situation, and evaluate the possibilities for scenario 1 and 2 based on all the potential revenue and costs. This lack of information on the current situation can be seen as an obstacle to implement a change in the purchasing strategy.

7.2 Final advice on scenarios

Concluding, three scenarios are drafted based on the considerations and experienced difficulties by stakeholders. Namely, ‘non-full service sourcing (purchasing front and back office separately)’, ‘full service sourcing (local approach using a delegated sourcing strategy)’ and ‘current situation with focus on improvement’.

As seen from a health insurer perspective it would be most desirable to implement scenario 1. Because in this way costs possibly decrease as an advantage of bundling volume and quality might be improved. Most of all there is more control over quality of care, what insured customers and GPs have emphasised. However, seen from a stakeholders perspective it would be most suitable for Menzis to maintain the current situation for the upcoming year, with the aim to tackle the experienced difficulties without implementing rigorous modifications on short notice. As indicated in the interviews, stakeholders are reluctant in general for any kind of change. And they have been raising points of criticism on the absence of sufficient data whether and what the possible benefits are. Hence, preparation of more drastic changes, like scenario 1 and 2, need to be well prepared. This in order to build support among stakeholders and, in collaboration, organise this process for a successful implementation.

	Consideration	Current situation	Scenario 1	Scenario 2	Scenario 3
			Focus on costs and price management	Focus on customer service and innovation	Current situation with focus on improvement
1	Full or non-full service sourcing	Full service	non-full service	full-service	full-service
2	Appropriate mode of communication between supplier & insurer	Depending on size of supplier and being selected as preferred supplier			
3	Focus on input or output	Focus on input	Input	Output	Combination of both
4	Operational Excellence, Product Leadership or Customer Intimacy	No concrete division or balance between these three factors			
5	Local or national source	Local approach in purchasing diagnostics	National	Local	Local
6	Big or small supplier	N/A	Big supplier		
7	All or selective sourcing	All suppliers are contracted, given the duty of care		Selectively	More selectively
8	Delegated sourcing strategy	N/A		Primary care provider as key-supplier	
9	Preferred supplier	Applied, 30% of suppliers is selected as preferred			Better distinction between providers
10	Competitive bidding or partnership	N/A	Competitive bidding (back office)		Partnership
11	Price or performance agreement	Price agreement	Price agreement	Performance agreement	
12	Fixed-price or cost-based contract	Combination of both	Fixed (back office)	Combination of both	
13	Long- or short-term contract	Depending on being selected as preferred supplier	Depending on selected as preferred supplier	Short-term	Long-term

Figure 7: Flowchart per scenario

7.3 Recommendations for further research

Throughout this study several recommendations are already pointed out, which will be summarized and complemented in this paragraph.

As explained several times in this study, insufficient data is present on the exact added value (in terms of impact on overall health care costs, or referrals to specialist care) of primary care diagnostics. Knowledge on this starting point is essential for further research and implementation of a new strategy. Further research is required to gain more insight in this added value.

Menzis applies rewards towards preferred suppliers of a two year agreement and no turnover cap. This maximum of two years, applied for preferred suppliers, is very common among health insurers in the Netherlands (69, 70). Possible reason for this is that it might be harder to achieve a flexible response to the dynamics in the market, due to high switching costs (54). However, both Menzis and stakeholders in the interviews stated that a long-term agreement is preferable. But, a maximum of two year is not a long-term agreement in which innovation is stimulated and assurance can be given. Suggestion for further research could be, if a longer-term agreement or partnership is possible and desirable among stakeholders, in evaluating if a long-term contract outweighs any reduction in the degree of flexibility. And if further distinction among providers is needed and/or desired in this. This could be done by evaluating the contracts of the last couple of years and analyse any variation in market share, volume and price of the contracted providers, and a possible reduce or extension in the supplier base.

Next, it might be interesting to do research on what way a purchasing strategy is or can be defined by the organisational structure of a health insurer. In results this is barely mentioned, but distribution of responsibilities among the employees of Menzis and corresponding contract opportunities might have influence on the overall organisation of health care. For example, Menzis concluded that the reason for limited attention on outcome measures is accompanied by the number of institutions with whom they have contact. Suggested by Menzis, this probably asks for a different organisation structure of the health insurer or the provider, or both. Hence, to what extent are purchasers of health care specialised in segments (primary or secondary care), and to what extent is a purchasing policy of a health insurer adequate for these segments. This could be done by analysing the policies of the different health insurers in the Netherlands, and by conducting interviews with several health care purchasers employed at different health insurers about their experiences and difficulties.

Finally, this research was focussed on laboratory services in particular, but it might be interesting to see if applying the table with considerations on other care products is possible. Further research is needed to find out what care products can be taken into account for this, and subsequently in what way these products can be purchased.

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Appendices

Appendix I: Interview guide

Interview schema	
Datum interview:	
Naam interviewer:	
Naam geïnterviewde:	
Functie geïnterviewde (incl. organisatie):	
Naam andere aanwezigen tijdens interview:	
Functie van de andere aanwezigen:	
1. Functie	
1. Welke rol speelt u in	
a. eerstelijns laboratoriumdiagnostiek? <ul style="list-style-type: none"> • inhoudelijk • kwaliteit • logistiek • bekostiging 	
b. inkopen van zorg/diagnostiek?	
2.1. Huidige organisatie Huisarts/Frontoffice	
2. Hoe is in uw organisatie het prikken en eventuele point of care diagnostiek georganiseerd? (onderdeel van ziekenhuis, ander samenwerkingsverband of zelfstandige organisatie?)	
3. Wat heeft de huisarts/u nodig voor optimale organisatie van diagnostiek/prikken bloed?	
4. Wat is, volgens u, voor de patiënt belangrijk voor een optimale organisatie van diagnostiek?	
5. Voordeel/nadeel huidige situatie > Spreiding, voorzieningen, openingstijden	
6. Wat vindt u van prikken bij de HA/gezondheidscentra vs. prikposten? Voor/nadelen	
7. Welke factoren bepalen, volgens u, de efficiency/kwaliteit van eerstelijnsdiagnostiek?	
2.2. Huidige organisatie Laboratorium/Backoffice	
8. Hoe is in uw huidige organisatie diagnostiek georganiseerd? (met welke partijen samenwerkingen, HA-praktijken, ziekenhuizen etc.)	
9. Welke diensten en services leveren labs nu aan huisartsen en andere 1e lijns aanvragers?	
a. Wat vinden aanvragers hierin het meest belangrijk? b. Op welke manieren binden laboratoria de aanvragers van diagnostiek aan zich?	
10. Kosten; wat is de verhouding tussen de kosten voor de bloedafname, analyse en overhead van eerstelijns laboratoriumonderzoek?	
a. Hoe is de verdeling 1e/2e lijn? b. Wat zijn de effecten van concentreren of juist splitsen van laboratoriumdiagnostiek voor 1 ^e en 2 ^e lijn?	
3. Kwaliteit van zorg	
11. Welke factoren bepalen de kwaliteit van eerstelijnsdiagnostiek?	
12. Hoe ervaart u op dit moment het diagnostisch toets overleg (DTO)?	
a. Ziet u voordelen of nadelen? b. Hoe frequent vindt het plaats? c. Wie sluit hierbij aan?	

13. Hoe wordt de toegankelijkheid van de zorg gewaarborgd op dit moment?
4. Contact stakeholders
14. Met welke partijen heeft u tot nu toe contact voor de organisatie van diagnostiek?
15. Hoe verloopt dit contact?
16. Hoe verloopt het contact met zorgverzekeraars?
17. Wat vindt u van de rol die zorgverzekeraar hierin speelt?
18. Wat is, volgens u, de rol van verzekeraar in toekomstige ontwikkelingen of de huidige organisatie?
5. Contracteren/financiering
19. Wat is uw rol in het contracteren van deze zorg?
20. Met welke partijen heeft u contact voor het contracteren van zorg?
21. Wat vindt u van de huidige manier van contractering/financiering, door de verschillende zorgverzekeraars?
22. Zijn er perverse prikkels in het gehele proces? Zo ja, welke?
6. Beste scenario + effecten
23. Heeft u verbeterpunten voor de huidige organisatie van diagnostiek? Voor uw eigen organisatie of landelijk? En waarom?
24. Wat is nodig om deze punten door te voeren? Van aanbieders, of zorgverzekeraars?
25. Welke implicaties kunnen ontstaan op logistiek en priknetwerk bij uitvoeren van dit scenario?
26. Consequenties voor kwaliteit/toegankelijkheid indien ander proces?
27. Wat is het effect van nieuwe situatie op <ul style="list-style-type: none"> a. kosten van ELD? b. Effect op kwaliteit c. Effect op logistiek d. Effect op doorlooptijden e. Effect op competitie? op welke manier?
28. Zijn er ontwikkelingen, in de komende 5 jaar, waar in een nieuw scenario rekening mee gehouden moet worden?
7. Andere scenarios + effecten
29. Wat vind u van het idee om bloedafname en analyse financieel/logistiek te scheiden? <ul style="list-style-type: none"> a. Effect op kwaliteit b. Effect op logistiek c. Effect op doorlooptijden d. Effect op competitie? Op welke manier?
30. Welke risico's zijn er en welke mitigerende maatregelen zijn nodig?
31. Heeft u nog andere suggesties/informatie (websites, artikelen, etc.) voor het onderzoek? Zijn er nog vragen die u had verwacht, maar die ik niet heb gesteld? Heeft u nog suggesties voor anderen die ik echt zou moeten spreken in het kader v/h onderzoek?

Toestemmingsverklaringsformulier

Titel onderzoek: “Which factors in health care purchasing, that influence laboratory services in primary care, can be used to optimise the organisation of laboratory services?”

Verantwoordelijke onderzoeker: Sanne Bentum

In te vullen door de deelnemer

Ik verklaar op een voor mij duidelijke wijze te zijn ingelicht over de aard, methode en doel van het onderzoek. Ik weet dat de gegevens en resultaten van het onderzoek alleen anoniem en vertrouwelijk aan derden bekend gemaakt zullen worden. Mijn vragen zijn naar tevredenheid beantwoord.

Ik begrijp dat de geluidsopnames tijdens het interview uitsluitend voor analyse gebruikt zullen worden.

Ik stem geheel vrijwillig in met deelname aan dit onderzoek. Ik behoud me daarbij het recht voor om op elk moment zonder opgaaf van redenen mijn deelname aan dit onderzoek te beëindigen.

Naam deelnemer:

Datum:-....-.....

Handtekening deelnemer:

In te vullen door de uitvoerende onderzoeker

Ik heb een mondelinge en schriftelijke toelichting gegeven op het onderzoek. Ik zal resterende vragen over het onderzoek naar vermogen beantwoorden. De deelnemer zal van een eventuele voortijdige beëindiging van deelname aan dit onderzoek geen nadelige gevolgen ondervinden.

Naam onderzoeker:

Datum:-....-.....

Handtekening onderzoeker:

Appendix III: Interview scheme

Voorbereiding:

Informatiebrief opsturen

Printen:

- Interview
- Interview schema
- Toestemmingsverklaring

Meenemen:

- Opnameapparatuur
- Telefoon
- Opladers
- Interview
- Interview schema
- Toestemmingsverklaring
- Pen en papier

Introductie:

Voorstellen: Afstudeeronderzoek voor de master Gezondheidswetenschappen aan de Universiteit Twente, namens Menzis.

1. **Doel:** *Onderzoeken of Menzis, door het veranderen van het inkoopproces van eerstelijns diagnostiek, een hoger besparings- en of/kwaliteitspotentieel kan verkrijgen. Met als uiteindelijke doel het optimaal contracteren van eerstelijnslaboratoriumdiagnostiek in 2020*
2. **Procedure:** *Het interview zal 45-60 minuten in beslag nemen.*
3. **Geluidsopname:** *Toestemming vragen voor geluidsopname.*
4. **Toestemmingsverklaring:** *Toestemmingsverklaring tekenen.*
5. **Vragen:** *Mogelijkheid om vooraf vragen te stellen.*

Interview:

Onderdelen:

- Algemene gegevens
- Huidige functie en structuur organisatie
- Verdieping op front of backoffice (afhankelijk van functie/organisatie)
- Eventuele verbetermogelijkheden binnen het proces
- Ideale situatie

Afsluiting:

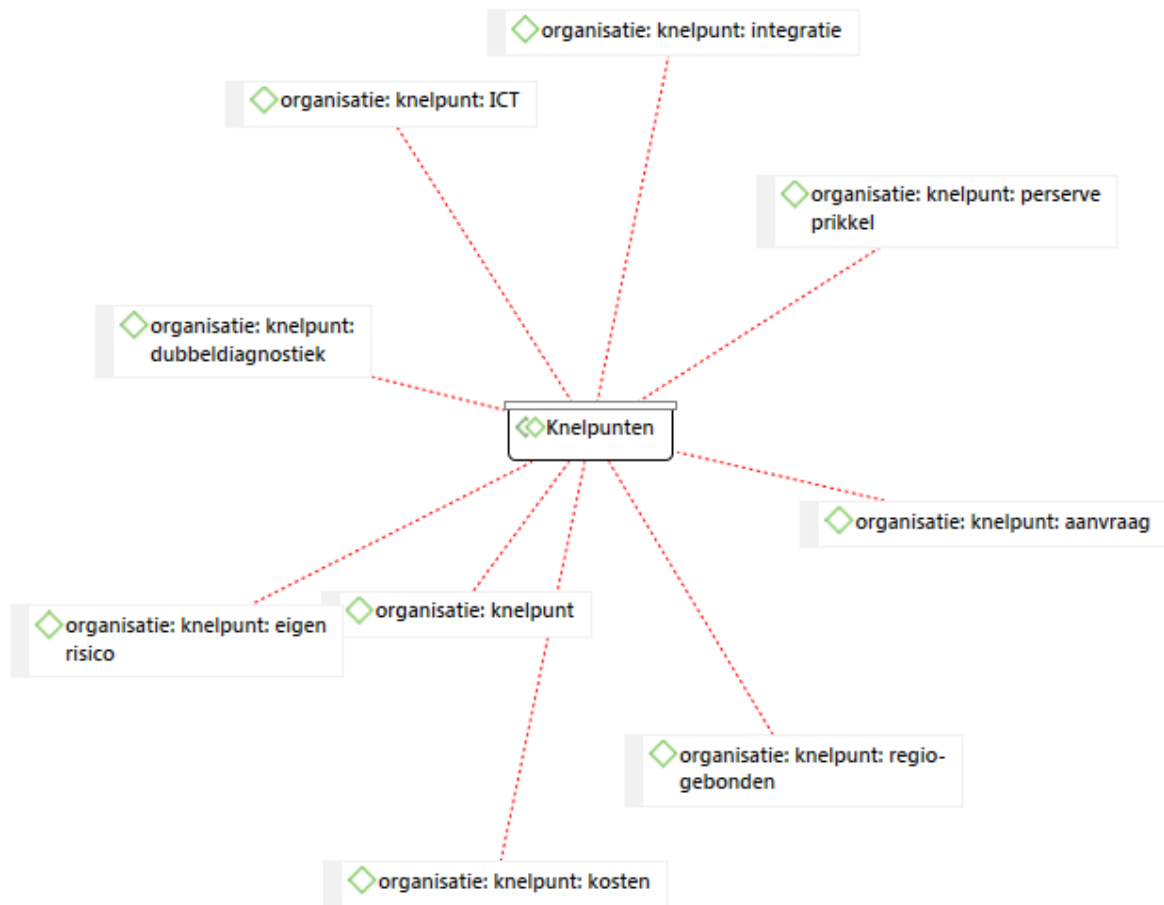
Vragen naar overige vragen en interesse in resultaten

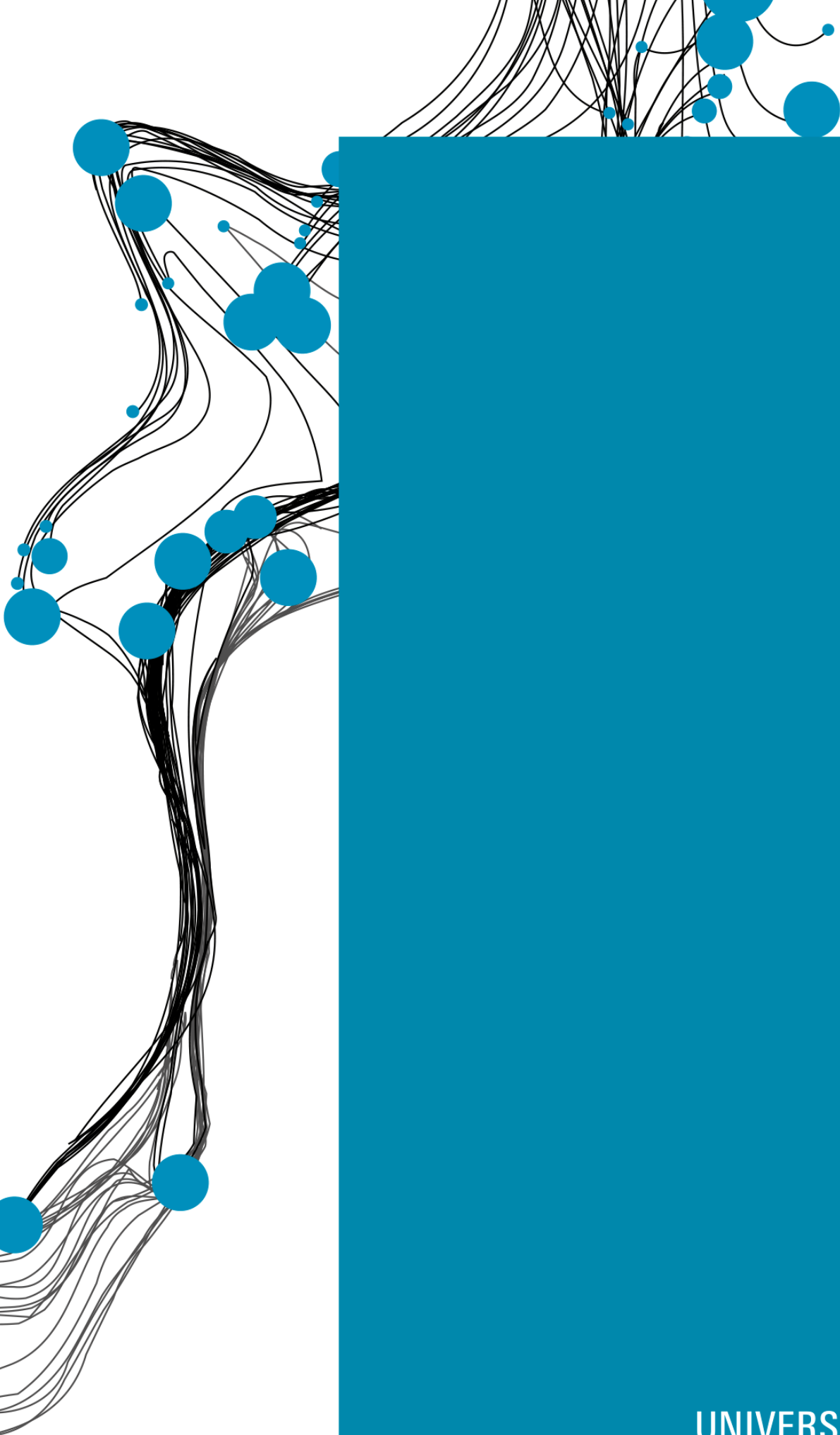
Bedanken voor medewerking

Appendix V: Code scheme – Code groups

- ▲ ◇◇ Code Groups (18)
 - ▷ ◇◇ EDC (2)
 - ▷ ◇◇ Eerstelijnsdiagnostiek (ELD) (3)
 - ▷ ◇◇ Huidig (2)
 - ▷ ◇◇ Huisarts (5)
 - ▷ ◇◇ Klinisch Chemicus (2)
 - ▷ ◇◇ Knelpunten (9)
 - ▷ ◇◇ Kwaliteit (2)
 - ▷ ◇◇ Laboratorium (1)
 - ▷ ◇◇ NZa (1)
 - ▷ ◇◇ Ontwikkelingen ELD (5)
 - ▷ ◇◇ Optimaal (2)
 - ▷ ◇◇ Organisatie (15)
 - ▷ ◇◇ Patiënt (2)
 - ▷ ◇◇ Prikposten (6)
 - ▷ ◇◇ Samenwerking (2)
 - ▷ ◇◇ Stakeholders (22)
 - ▷ ◇◇ Ziekenhuis (4)
 - ▷ ◇◇ Zorgverzekeraar (5)

Appendix VI: Code scheme – Network ‘Knelpunten’





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