Master thesis

Economic Evaluations in
Child and Adolescent Health Care

The use of the cost-benefit analysis to translate outcomes of treatments into monetary units

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Abstract

This study explains how benefits of child adolescent mental health (CAMH) care treatment can be translated into monetary units in order to execute a cost benefit analysis. The ultimate goal of this study is to exemplify how the use of CBA might contribute to a better understanding of the outcomes of CAMH care. Several valuation techniques are described which can be used to translate the benefits of CAMH care treatment into monetary terms. The results of this study are based on literature reviews and semi-structured interviews with municipalities and healthcare providers. Subsequently, a concise case study is executed in which the costs and benefits have been translated into monetary units recommended by municipalities and healthcare providers. This study requires further research to execute a cost benefit analysis based on the information derived from a longitudinal case study. From the results it became clear that there is a lack of knowledge and experience. This is unfortunate since the results of the study indicated that the execution of a cost benefit analysis is worthwhile in order to determine the budgets for CAMH care. It might prove beneficial when incorporated in our healthcare system.

Key words: Cost Benefit Analysis, Valuation techniques, Human Capital Method, QALY, WTP, Child and adolescent mental health care, (in)direct benefits, gain in health
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Introduction

This study focuses on the costs and benefits in mental health care (MHC) for youth and adolescents in the Netherlands. In the past decennium the expenditures in the Dutch health care sectors have increased significantly. In 2010, the Dutch government spend 6.1 billion euros on MHC services in 2010. Those costs have been increased in the past 10 years with 120% (Bijenhof, et al., 2012). Of this 6.1 billion euros, 682 million euro was spend on child and adolescent mental health (CAMH) care (Bot et al., 2013). The budget for 2015 in CAMH care is estimated at 988 million euros, that is 3700 euros on average per client (Van Rijn & Teeven, May 5, 2014). Patients in the age category 0-19 years require the lowest health care expenditures compared to other age categories. However, the costs for mental disorders are the fastest growing in the age category of 0-19 years (Bijenhof, et al., 2012). The costs of child and adolescent mental health (CAMH) care increased with an average percentage of 10% per year in the past ten years. As the prevalence of MH disorders in young people is still growing, it is questionable whether all children that need mental care can actually receive care treatment, due the cost savings of 3% in budgets (Van Rijn & Teeven, 2014; Bijenhof, et al., 2012.). Since the use for CAMH care increases in combination with smaller budgets for providing CAMH care, the question whether outcomes of treatment outweigh the costs needs to be answered.

The growing tension between municipalities, health insurances and care providers has led to the need of a better understanding of the costs, benefits and the effects of CAMH care (Crom & Kamminga, 2015). In order to get a better understanding economic evaluation techniques can be used. Economic evaluations can be used to denote any of a number of research techniques that have two essential components in common: they examine both costs and outcomes and they compare two or more ‘interventions’ (Romeo, Byford & Knapp, 2005). In the health economics field a commonly used economic evaluation technique is the cost-benefit analyses (CBA). A CBA values both costs and outcomes in monetary units. This allows for costs and outcomes to be combined, and the optimal choice is the one with the greatest net gain (Clemmer & Haddix, 1996). Assigning value in monetary units to outcomes in mortality (increase in years of life) and morbidity (quality of life) is hard to define. Economists attempted to use different methods to assign value to outcomes in mortality and morbidity; the human capital approach, the friction cost method, QALY method, and the willingness-to-pay method (Stone et al., 2000; Drummond & Jefferson, 1996). The methods will be described and discussed in more detail in the literature section and will subsequently be analyzed for their applicability in CAMH care.
only the useful methods will be used to translate outcomes into monetary units of CAMH care. The outcomes of CAMH care used in this study, in order to conduct a cost-benefit analysis, have been derived from a previous master student (Denice Eertink, Master Thesis, October 2014). In her thesis she discussed multiple economic evaluation techniques and identified the costs and outcomes, direct and indirect, that derive from providing care treatment.

The gap that will be filled by this study is how CBA can be used in CAMH care to translate outcomes of treatments into monetary units. So far, the literature has discussed several methods that are used to see whether care is worthwhile in terms of efficiency and occasionally in terms of monetary units. However, with regard to the latter type of methods, these are not specifically targeted at CAMH care. Moreover, the existing literature has not resulted in extensive use in the Dutch CAMH care system. If the outcomes of treatments in terms of costs and benefits can be expressed in monetary units, the suppliers of CAMH care are able to provide responsible authorities with a financial understanding of CAMH care and allow for them to make well informed decisions. Since costs are more straightforward, this paper aims at providing a better understanding of the most important outcomes in terms of benefits gained from treatment in CAMH care. Subsequently, those benefits will be translated into monetary units with the use of methods that have been found in the literature. Lastly, a cost-benefit analysis will be executed. The ultimate goal of this study is to exemplify how the use of CBA might contribute to a better understanding of the outcomes of CAMH care. The research question of this paper therefore is:

*How can benefits of CAMH care treatment be translated into monetary units in order to execute a CBA?*

**Sub questions:**

*What are the most important outcomes in terms of benefits of CAMH care?*

*Which types of valuation techniques can be used to translate outcomes into monetary terms of CAMH care treatment?*

This study can be divided into different sections. In the next section the relevant literature will be explained in more detail. The subsequent methodology section will explain how interviews and a concise case study will aid in answering the research question. The fourth section will
discuss the results that have been derived from the data. Finally, this study will conclude with a discussion in which a conclusion and recommendations will be discussed.
Theoretical framework
Since January 2015, the municipalities are responsible for the budgets of the MHC in the Netherlands. As a consequence of the savings in the budgets of MHC, the municipalities need to consider carefully whether a reimbursement will be provided or not. To allocate the resources that care providers need in order to treat their patients, multiple approaches have been advanced in the literature. In the literature mental disorders are commonly discussed with the use of the cost-of-illness (COI) studies. This approach does only quantify the costs of mental health problems and does not consider the outcomes into terms of benefits in MHC. For a full economic analyses several methods have been discussed in literature. Those full economic analyses are useful under the conditions where resources are limited (Hsia & Belfer, 2008). In this study I will shortly describe the main characteristics of these methods and describe some valuation techniques that can be used to translate outcomes into monetary units. Subsequently the outcomes in terms of benefits and costs will be described. In appendix 2 a more detailed description of the evaluation techniques is provided. Lastly, the choice for the perspective and time horizon to execute a CBA will be explained in more detail.

Full economic analyses
The ultimate goal of economic evaluation is to support decision makers to make efficient and righteous decisions by comparing the costs and benefits of health care interventions (Drummond et al., 2005). In the academic literature there are several methods described that meet the definition of a full economic analyses. The differences, that can be found in table 1, between the different types of economic analyses is mainly in the way how outcomes in terms of benefits are valued (Angevine & Berven, 2014).

<table>
<thead>
<tr>
<th>Table 1. Components of Decision Analysis Methods</th>
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<tr>
<td>Costs</td>
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<tr>
<td>Cost-benefit analyses (CBA)</td>
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<td>Cost-effectiveness analyses (CEA)</td>
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<td>Cost-utility analyses (CUA)</td>
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source: Angevine & Berven, 2014
Cost-effectiveness analyses (CEA)

The cost-effectiveness (CEA) is the most commonly used approach to determine whether a program should be implemented. CEA can be used to evaluate the outcomes and costs of interventions designed to improve health (Gold et al., 1996). The CEA compares the additional costs and health benefits of a specific type of health intervention to the old standard of care, and is expressed in a ratio where the denominator is a gain in health (e.g. extra life years) and the numerator is the costs associated with the health gain (Gold et al., 1996).

Cost-utility analyses (CUA)

A CUA is an economic technique for assessing the efficiency of healthcare interventions (Coons & Kaplan, 2006). It is considered by some to be a specific type of cost-effectiveness analysis in which the measure of effectiveness is a utility- or preference-adjusted outcome (Weinstein & Stason, 1977; Sloan, 1996). The quality of the health outcome achieved is incorporated in the CUA.

Cost-benefit analysis (CBA)

The CBA is able to translate the outcome of CAMH care into monetary units. This implies that the costs and benefits of all individuals affected by CAMH care treatment should be included (Johannesson, 1996). The (in)direct benefits of CAMH care treatment (saved costs) are subtracted from the costs in a CBA, which gives a clearer overview of the benefits of CAMH care.

Costs & benefits

In this section the costs and benefits of CAMH care will be provided. To conduct a reliable CBA it is important to provide a clear definition how costs are defined in this study. In healthcare a distinction is made between three categories of costs; health sector costs, productivity-related costs, and other costs (Pelham, Foster & Robb, 2007). Drummond et al. (2005) came up with a similar categorization of costs as; costs within health care sector, costs borne by the patients and family, and costs in other sectors. The costs borne by the patients and family and other costs can be seen as the costs that arise outside healthcare sector, for example productivity costs.

Besides, there can also be made a distinction between the direct and indirect costs in CAMH care in health economics it is common to refer to the health care costs as direct costs and the non-health care related costs as indirect costs (Hakkaart-Van Roijen, Tan & Bouwmans, 2011).
In table 2 a framework of the different type of costs is given which is created by Hakkaart-Van Roijen, Tan & Bouwmans (2011).

<table>
<thead>
<tr>
<th>Categories</th>
<th>Definition</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Direct costs inside the health care sector</td>
<td>All medical expenses that are directly connected to the care activities (i.e. prevention, diagnosis, therapy, revalidation and nursing)</td>
<td>E.g. diagnostic tests, and/or consults with psychiatrist</td>
</tr>
<tr>
<td>Direct costs outside the health care sector</td>
<td>Health care related costs carried by the patient or the family</td>
<td>E.g. travel costs</td>
</tr>
<tr>
<td>Indirect costs inside the health care sector</td>
<td>Medical costs that occur during the gained life years.</td>
<td>E.g. pharmaceutical costs in additional life years</td>
</tr>
<tr>
<td>Indirect costs outside health care</td>
<td>Non-health costs borne by other sectors</td>
<td>E.g. day care costs</td>
</tr>
</tbody>
</table>

Source: Hakkaart-Van Roijen, Tan & Bouwmans, 2011

In contrast to costs, benefits are much harder to explain, as it is difficult to value the direct benefit when a client has fewer psychoses. In literature a lot has been discussed about the costs of CAMH care and rather small attention is paid to the benefits that occur due to CAMH care. In this study the main question is to translate the outcomes in terms of benefits in monetary terms. Therefore, this study will discuss the potential benefits of CAMH care which are mentioned in the literature and that need to be considered in a CBA. A distinction is made between direct and indirect benefits. In case of conducting a CBA it is important to analyze the direct effects first. The health effects are then the so called derivative effects. Therefore, a distinction between the direct and indirect benefits is necessary in order to avoid double counting. When an indirect effect is directly derived from a direct effect it is not possible to sum up these direct and indirect effects, since that would result in double counting (Faber & Mulders, 2012).

Table 3 provides an overview of the (in)direct benefits. In the execution of economic evaluations, the indirect benefits (e.g. saved productivity costs in the future) will in practice be deducted from the costs (e.g. lost productivity on the short term) (Pomp, Schoemaker & Polder, 2014). The possible saved costs due to treatment are considered as indirect benefits in this thesis, in line with the perspective put forward by healthcare economists (Pomp, Schoemaker & Polder, 2014). Valuing the saved costs as indirect benefits is different from the RIVM guideline (Pomp, Schoemaker & Polder, 2014) in which other health effects are not automatically seen as indirect benefits but also could be seen as indirect costs. The perspective
of healthcare economists is applied as this allows for a better understanding of savings that occur due to treatment.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct benefit</td>
<td>Gain in (mental/physical) health and well-being of the individual under treatment</td>
<td>E.g. less anxious, or fewer psychoses</td>
</tr>
<tr>
<td>Indirect benefit</td>
<td>Any other effect not directly related to the (mental/physical) health of the patient</td>
<td>E.g. more productive, and/or prevented health care costs</td>
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Source: Pomp, Schoemaker & Polder 2014

**Direct benefits**

In this study the direct benefits can be seen as the effects on gain in mental- and physical health or in well-being for the persons that are narrowly involved in the treatment. Those are, children and adolescents that receive MHC and the parents of the children and adolescents. A better mental health might lead to less physical issues at a later stage of age according to Liesbeth de Vries (Congres ‘Jeugdhulp, kip met de gouden eieren’, 2014). Scott & Happell (2011) observed that individuals with severe mental disorders have unhealthy lifestyle behaviors such as smoking, alcohol abuse, poor diet, low physical activity and risky sexual behavior.

**Indirect benefits**

The indirect benefits that occur due to care treatment can be divided into short term and long term indirect benefits. Benefits that have been gained on the short term might also affect the indirect benefits in the long term, as long if CAMH disorders do not show up again. Besides, new indirect benefits may arise at the long term. For example, the level of graduation which could be influenced by CAMH treatment might impact the earnings at a later stage of life. In that case, there is the appearance of an indirect effect that could arise in the long term. To identify indirect effects on the long term, follow-up studies are needed to clarify whether indirect benefits showed up after treatment in childhood. Despite the fact that life-time studies do not exist, this study identifies cost items derived from mental disorders that might have been reduced due to treatment in childhood (period up to the age of 24), which are listed on the next few pages.

From the society perspective several actors can be distinguished; child/adolescents, parents, informal caretakers, and other members of society. Those mentioned actors in combination with cost items are described in more detail below.
**Child/adolescent**

- **Education**: the costs of education that are associated with mental health disorders might be lowered with CAMH care. This might be the case since ample evidence suggests that disabled children experience difficulties during their education. For instance, evidence by Broek, Muskens & Winkels (2013) indicates that dropout rates are higher for children with mental illnesses. In line with this several categories can be distinguished in order to identify the saved costs due to CAMH care.
  
  o **Categories**:
    - Years of education completed
    - Performance
    - Attendance

- **Economic participation**: due to a gain in health (and the induced effects of education) MHC can have a positive effect on paid and non-paid work. These benefits especially occur on the long term, when children have finished their education and look for a full time job. On the short term, when children have reached the working age of 16, a gain in part time jobs may play a small role. The patients’ chance of work, his productivity level and his wage level, determine his income. Bouwmans et al. (2014) determined that quality of life was associated with types of productivity losses, for example absenteeism. The income level is also an indirect effect that can be affected by MHI at the long term. The study of Kawakami et al. (2012) revealed that when children and/or adolescents experience mental health disorders this will negatively impact their employment rate and income level.
  
  o **Categories**:
    - Employment rate
    - Productivity
    - Income level

- **Social participation & quality of life aspects**: CAMH disorders are amongst others associated with lower social participation (e.g. sport activities), social exclusion from school and society, relationship difficulties with parents, friends and future partner resulting in for instance domestic violence and divorce (Scott et al., 2001). These aspects
have a negative impact on someone’s quality of life, and CAMH care may contribute to lower these costs.

- **Categories:**
  - Voluntary work
  - Informal care
  - (Sport) clubs
  - Relationships
  - Social inclusion

**Parents/informal caretakers**

- **Economic costs:** the time loss on paid and unpaid work, addressed as a cost item for parents on the short term, might become a benefit on the longer term (Romeo, Knapp & Scott, 2005). This is, when the improvement of their child’s health allows parent to increase their productivity instead. Not only the parents’ productivity, but also that of other important informal caretakers may improve, such as other family members and teachers. Further, any damage costs formally incurred by parents (especially relevant with external disorders) can lower the economic costs incurred.

  - **Categories:**
    - Productivity losses
    - Home damage

- **Quality of life & Mental health (as non-patient):** even when parents are not involved in the treatment of their child, having a child with a mental disorder still results in a substantial burden on parents (Angold et al., 1998). Therefore, parents’ mental and physical health can improve due to the spillover effects of CAMH care treatment.

  - **Categories:**
    - Amount of stress
    - Leisure time

**Other members in society**

- Lastly, other members in society are affected by the behavior of people with mental health disorders in multiple ways. Some of these factors are listed below, though one might imagine more ways in which other members of society could be affected.

  - **Categories:**
    - Substance abuse of alcohol, tobacco and drugs
To execute a precise CBA all cost items need to be considered and therefore the societal perspective has been chosen. However, this study considers only the items that have high cost savings, and the selected items that are seen as important based on the results that have been gained from the interviews with municipalities, care providers and/or care insurers.

**Valuation techniques**

To express (in)direct benefits into monetary terms several techniques as discussed in academic literature can be used. This study will explain several techniques which are recommended in this academic literature, that contribute to the translation of benefits of CAMH care treatment into monetary terms. The human capital approach and the friction cost approach can be used in order to translate the direct benefits into monetary terms. To translate the indirect benefits into monetary units the willingness to pay method and the QALY-method are useful techniques. In the results section these techniques will be used to translate the main (in)direct benefits into monetary terms.

*Human capital approach*

One approach that can be used to translate indirect costs and benefits into monetary units is the human capital approach. The human capital approach calculates the saved productivity costs due to care treatment, which occur when the productivity of individuals is affected by illness, treatment, disability or premature death (Liljas, 1998; Krol, Brouwer & Rutten, 2013). The use of the human capital approach can be seen as an approach of valuing parts of the benefits of health care interventions, using earnings data as a means of valuing productivity changes only (Drummond et al., 2008). For example, a person who is working only 20 hours per week due to a mental disorder can get MHC treatment. As a result of this treatment this person is able to work 32 hours per week instead of the 20 hours prior to the MHC treatment. One can now speak of an increase in productivity and is able to calculate the benefits of increased productivity. Consider, for instance, an average wage rate of €12,00 per hour and a time horizon of retirement at the age of 67. To calculate the total benefits of gained labor one has to multiply the average
wage with the increase in working hours for the period up until the age of retirement. Johannesson (1996) states that the human capital approach has been replaced to a large extent by economic evaluation techniques and only small components of the human capital approach are used in those evaluation techniques. These economic evaluation techniques consider more elements and therefore provide a more realistic representation of the case. Components that are still used include the change in healthcare costs and the change in production (Weinstein & Stason, 1976; Lindgren & Persson, 1989). This approach is fully economically based and does not consider personal feelings or the value of free time (leisure time), and is therefore not complete (Drummond et al, 2005). The human capital approach can be seen as having a theoretical foundation in cost-benefit analysis as a measure of the indirect costs (e.g. productivity losses) and benefits of health changes (Johannesson, 1996). In other words, the human capital approach can be used to measure the indirect benefits in monetary terms. Drummond (2005) states that the human capital approach has some measurement difficulties out of which one is relevant to this study; the value of gained health time. The value of gained health time that is not sold for a wage (e.g. leisure or volunteer time) needs to be considered in a societal perspective which is difficult to assess. Therefore, economists place shadow prices on non-marketed resources. For example, Drummond et al. (1988) state that market wage rates (e.g. unskilled wage rates) can be applied to non-market resources (e.g. volunteer time) in order to value those categories.

Friction cost method

The friction cost method (FCM) has been put forward as an alternative to the human capital approach as it allows more realistic estimates of productivity costs to be calculated for use in economic evaluations (Koopmanschap, et al., 1995: Brouwer & Koopmanschap, 2005). A fundamental premise underlying the FCM is the concept of worker replacement (i.e. employees absent due to illness for a long period will be replaced from the internal labor market or by an unemployed individual). The FCM limits costs to a friction period; the time required for the firm to restore productivity to the level prior to the occurrence of an illness (Birnbaum, 2005; Kigozi et al., 2014). Kigozi et al. (2013) state that to effectively estimate productivity costs (i.e. indirect benefits) during the friction period, information is needed on when the friction period occurs, the length of the friction period, an estimate of production loss, the costs of searching and training replacement workers, and medium-term macro-economic effects. A limitation of the FCM is that estimating the indirect costs (e.g. productivity losses) essentially means that the price of labor is set close to zero after the friction period has ended (Johannesson &
The FCM does also have some other limitations. Although this method was put forward as an improvement to existing methods to estimate societal productivity costs in economic terms, Brouwer & Koopmanschap (2005) argue that this method does not have theoretical underpinning and it treats leisure as having no value, because replacement would not be valued as its opportunity costs. Subsequently, Johannesson & Karlsson (1997) argue that the friction cost method is based on implausible assumptions which are not supported by neoclassical theory. They argue that consistently applying the FCM would mean that the method should also be applied in the estimation of direct costs, resulting in a substantial decrease in the costs of healthcare programs. This is their reasoning since when one only considers costs during the friction period and neglects the costs that ensue during later periods, the overall costs of healthcare programs would be significantly lower.

The FCM solely looks at the costs incurred during the replacement period once an employee of a company is no longer able to work and must be substituted. When replacement is settled, the FCM approach argues costs are reduced to zero. However, this implies that the FCM approach has no regard for the costs that the "fallen out" employee might still incur to society as a whole after replacement within the company is settled. The human capital approach does take on this broader societal perspective. It looks at (saved) costs throughout the lifetime of an individual by all entities involved. Due to this broader perspective this study will use the human capital approach in order to translate indirect benefits into monetary terms.

Quality adjusted life years (QALY)

A method that is seen as one of the greatest innovations in the sub discipline of health economics has been the development of a method in health economics as a summary measure of health outcome, which can inform healthcare resource allocation decisions (Whitehead & Ali, 2010; Brazier, 2007), named the QALY. The QALY method can be used at the social level to determine priorities between interventions, since the approach combines quality of life and length of life into a single number. The approach is therefore widely used in economic evaluations (Brazier, 2007). Whitehead & Ali (2010) state that to calculate a QALY you can simply multiply the duration of time spent in a health state by the quality of life (i.e. utility score). If a child is in a health state for the upcoming 30 years with an associated utility of 0.8, this would result in a QALY of 24 years. Figure 1 provides an overview of how treatment affect the quality of life. A distinction is made between a person that receives care treatment opposed to a person that receives no treatment (i.e. QALY’s gained from treatment).
The next step to incorporate the QALY in the CBA is to value the QALY into monetary terms. In academic literature a lot of discussion took place to determine the value of a QALY. However, the question; “What is a QALY worth in euro’s” is not easy to answer. One clear conclusion derived from academic literature, is that the exact value of a QALY does not exist (Brouwer et al., 2008). The value between individuals differs as one individual might be willing to pay more for his/her health state compared to another individual. Moreover, the value of a QALY is dependent on the chosen perspective (Pomp et al., 2007). In this study the whole social perspective is taken into account therefore all relevant events for the society are taken into account. As a consequence the total value will be higher compared to the individual perspective. Hansen (2003) found out that the monetary value of a QALY was worth around 12,000 euros. King et al. (2005) valued a QALY between 10,000 and 30,000 euros, dependent on the chosen method and patient population. Findings from the research of Pomp et al. (2007) suggests that the monetary value of a QALY is worth around 20,000 to 30,000 euro. Based on research from other articles the monetary value of a QALY (i.e. gain in health) is estimated at 20,000 euros per QALY. The value of the QALY in this study is rather low, because Smith et al. (2012) found that people were willing to pay significantly less to avoid mental illnesses than they were to avoid other medical illnesses. The monetary value of a QALY shows a very large bandwidth, therefore Pomp et al. (2007) suggests to use the estimates carefully.

*Willingness to pay method*

Another method that can be used to value the non-economic gains, such as the gain in health, is the willingness to pay method (WTP). This method determines how much an individual or the society is willing to pay for a gain in health in for example a QALY (Le Gall-Ely, 2009).
An advantage of the WTP method is that it is grounded explicitly in principles of welfare economics. Subsequently, WTP is able to provide means to quantify the benefits of difficult-to-estimate factors such as the psychic benefits of symptom relief. As it is useful in order to translate direct benefits, for example gain in health, into monetary terms. However, researchers have often found that the estimates of the WTP method are not reliable since they are highly subjective, which can be seen as a major drawback (Stålhammar, 1996; Kartman et al. 1996; Neumann et al. 2000).

In this study the WTP will be used in combination with the QALY method in order to translate the non-economic benefits (i.e. gain in health) into monetary terms. As earlier discussed in academic literature the WTP is useful in order to translate a QALY into monetary value which is helpful to conduct a CBA (Hirth et al., 2000; Shiroiwa et al., 2010; King et al., 2005; Gyrd Hansen, 2003). In academic literature there are several methods described to actually find a value that a person is willing to pay for a QALY. However, this is beyond the goal of this study and therefore I will not mention and describe them. Instead, this study takes an average value of 20,000 euros for a QALY into account to execute a CBA. This amount is a rough estimate of several figures in published academic literature.

In table 4 a clear overview is given to determine which techniques are used to translate the benefits into monetary units.

<table>
<thead>
<tr>
<th>Direct benefits</th>
<th>Indirect benefits</th>
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<tr>
<td>QALY in combination with the WTP</td>
<td>Human Capital Method</td>
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Source: Rozendal (2015)

**Perspective**

To conduct a CBA a perspective needs to be chosen in order to fulfil a good analysis. There are several perspectives that can be chosen in order to conduct a CBA. The perspective can be chosen from the provider of CAMH care treatment, the health insurer, the government, municipalities, etc. It is also possible to conduct a CBA that involves all affected parties, called the societal perspective. When applying a societal perspective, both medical costs and costs outside the healthcare sector are part of the analysis (Gold et al., 1996). Jönsson (2009) states that ignoring important costs and benefits in an economic evaluation will lead to an inefficient
allocation of resources, in the short term as well as from a long-term perspective. In other words a broad perspective is necessary in order for the study to provide the correct results for decision makers, such as the government or municipalities, about the allocation of reimbursements (Jönsson, 2009). Besides, the guidelines for pharmaceutical-economic research in the Netherlands and journals in health economics determined that the societal perspectives must be taken for an economic evaluation, for example a CBA (Bouwmans & Hakkaart-Van Roijen, 2013; Pelham, Foster & Robb, 2007).

For this study the societal perspective will be taken, since our main objective is to find out whether the outcomes of CAMH care treatment will outweigh the costs. Therefore all (in)direct costs and (in)direct outcomes in terms of benefits falling in the process of CAMH care treatment are considered to conduct a CBA. This means that not only the (in)direct costs and benefits derived from treatment are considered, but it also involves (in)direct costs and benefits from other areas such as employment, education etc. that might affect the result of the CBA, see tables 2 and 3. However, due to time constraints this study mainly focuses on the (in)direct benefits that derive from CAMH care treatment. Subsequently, the main (in)direct benefits that have been pointed out by the involved parties in this study are taken into account in combination with the benefit items with a relatively high value. In other words, the cost items with a relatively high value, seen as less important for CAMH care treatment and which are hard to define are more based on assumptions.

**Time horizon**
The time horizon is an aspect that needs to be defined before a CBA can be executed. To determine the time horizon it is important to consider the time period in which mental problems of children and adolescents emerge. As many mental problems are chronic, the costs and benefits are spread over a longer period of time. Besides, the effects of CAMH care treatment are not all immediately visible (Romijn & Renes, 2013), and therefore a life time horizon is desirable in order to find reliable results and that is why a life time horizon is applied in this studied. However, it must be noted that a life time horizon starting from the moment the client enters care until he or she dies, faces some insecurities which makes the execution of a CBA very hard. To deal with those insecurities on the long term Cater et al. (1987) stated that a bias effect of 25% will result in more reliable findings. For example, the lifetime earnings of U.S. males based on educational attainment. Based on the mean monthly earnings by age for high-school versus non-high-school graduates, the total lifetime wage differential is estimated to be...
$400,000 in 1997 dollars (Cohen, 1998). The estimated life time earnings differential of graduating from high school will be reduced with 25% to $300,000 in dollars.

To determine the present value of estimated life time earnings these earnings must be discounted. Since a dollar spent today is not the same as a dollar received 15 or even 30 years from now (Cohen, 1998). Following the recommendations of the Dutch guidelines for studies on costs, a discount rate of 4% was used for costs and health outcomes (Oostenbrink et al., 2004). As this study takes place in the Netherlands the recommendation of the Dutch guidelines for studies on costs will be used in order to interpret the results.
Methodology

In this chapter the methodology of this study will be discussed. In the first part the research method will be explained in detail. Then the research plan, selection of interviews, collection of data, the methods for data analyzing and a short description of the concise case study. The methodology section will conclude with a discussion of the validity and reliability of this research.

Research method
The purpose of this research is to provide a more comprehensive understanding how to translate the benefits of CAMH care into monetary units. The main research question that will be answered is: How can benefits of CAMH care treatment be translated into monetary units in order to execute a CBA? By providing a more comprehensive understanding in an immature literature field, the theory development approach is an adequate manner in order to fulfil the objective. In theory development the trigger for the research is a business phenomenon that is generally recognized in companies (van Aken, Berends & van der Bij, 2012). The business problem in this study concerns the new regulations in MHC and the cost savings in mental health care, therefore the care providers need to gain a better understanding of how the outcomes of treatments can be valued. The impact of these new regulations on the parties involved will be assessed by conducting interviews. Moreover, the results of these interviews are used in a concise case study with the hope to illustrate the use of a CBA in the field of CAMH care. A case study is seen as a strategy where research and theory are in an immature field (Inglis, 2008), and can be used to generate theory (van Aken, Berends & van der Bij, 2012). The cases give the opportunity to give some empirical insights about theoretical principles (Eisenhardt, 1989; Yin, 2014).

Research plan
This research will be performed by conducting interviews with multiple parties that are involved in the process of CAMH care. Those parties are municipalities and care providers. Rowley (2002) states that a higher amount of different organizations results in more robust research outcomes. However, interviews are very time consuming and therefore, due to time constraints, this study has to limit the amount of interviews. As this study is based on multiple organizations, Yin (2014) states that a guide for collecting data is necessary before actually
collecting evidence. Therefore, a protocol for executing an interview can be found in appendix 3.

**Interview selection**
Before gathering data, different organizations have to be selected. The selection is made based on several criteria. First of all, the organizations must be located in the north of the Netherlands (Groningen, Friesland, Drenthe, Overijssel). Second, these organizations have to be involved in different parts of the CAMH care process, as this will allow for a wider perspective on the topic. Based on these criteria, three healthcare providers and two municipalities were found from within the researcher’s network that were willing to participate in an interview.

**Data collection**
The primary sources of data collection are the in-depth interviews. The in-depth interview provides the opportunity for the release of feelings which under normal conditions people have little chance of expressing (Berent & Thompson, 1966). Yin (2014) states that interviews are an essential source of evidence since well-informed interviewees can provide important insights. The basis of the interviews that are used for this study consists of pre-determined questions, also called semi-structured interviews. To get a more comprehensive understanding an open interview structure is favorable, but in order to control the potential researcher bias the questions of the interview are semi-structured. The questions that are formulated in the questionnaire are related to the main research question and sub-questions. Before the interviews were executed, an e-mail was send to the involved parties to give them more background information about the stated business problem. Consequently, as they can prepare for the interview, it was expected to get more useful findings from their point of view.

The five interviews were conducted in the period April-May 2015 among a variety of involved parties with the employees that have insights into the business problem. This concerns:

- Municipality 1: policy-maker
- Municipality 2: policy-maker and councilor
- Healthcare provider 1: general director
- Healthcare provider 2: general director
- Healthcare provider 3: general director and financial director

All participants were interviewed once for approximately an hour, with the interview being recorded and afterwards transcribed. An example of one of these transcripts can be found in appendix 6.
In addition to the use of interviews, this study also focuses on the findings that can be found in academic literature. Several databases have been searched to find academic literature that were useful to this study. The main databases that were used are: Business Source Premier & Google Scholar. The terms that are used in order to find useful articles were narrowly related to the main question of this study. For example: benefits in healthcare, cost benefit analysis, human capital method, friction cost method, willingness to pay, quality adjusted life year, methods to translate benefits etc. I also used the references from the articles that were found useful to get a better understanding of a certain method or theory, this is also called the snowball effect. Lastly, material is used that was provided by my supervisor and other stakeholders. The articles that were used in my study are mainly focused on the most recent literature to be more consistent changes that have been occurred recently.

The use of primary and secondary data contributes to the improvements of the validity and reliability of findings (Welch, 2000), and contributes in order to control the potential instrument bias. The use of multiple sources of instruments (triangulation) can remedy the specific shortcomings and biases of these instruments by complementing and correcting each other (van Aken, Berends & van der Bij, 2012).

**Data analysis**
The process of analyzing the collected data consists of two steps. First, a within-case analysis is used to get familiar with the data (Eisenhardt, 1989). The within-case analysis can be executed by reading interviews, coding process of answers and lastly the interpretation of the results. Second, a cross-pattern analysis is executed to force investigators to look beyond initial impressions and see evidence through multiple lenses (Eisenhardt, 1989).

**Concise case study**
A concise case study will be conducted in order to illustrate the use of a CBA in the field of CAMH care. Academic literature and the results from the interviews provide the framework from which the case study will be discussed. Firstly, a fictitious scenario of a young adolescent with a mental disorder will be created. This scenario will be the starting point from which the possible benefits will be monetarized and subsequently used for the execution of a CBA. It should once again be noted that this concerns a fictitious scenario and solely serves as an example for future references.
It will be done by first making up a scenario than the benefits will be monetarized and with these benefits a CBA will be conducted. However, this is based on assumptions and therefore it can only be used as a sort of guideline to follow for municipalities and healthcare providers.

**Validity & reliability**
The quality of the study depends on the way in which results gained from the collected data has fulfilled the quality criteria that are set for research. The quality criteria of research are controllability, reliability and validity (Yin, 1994). These quality criteria form the basis for reaching inter-subjective agreement on research results, as it refers to consensus between the actors who deal with a research problem (van Aken, Berends & van der Bij, 2012).

Controllability is seen as a precondition for the evaluation of validity and reliability (van Aken, Berends & van der Bij, 2012). In order to make this research controllable, the question of how the study was executed needs to be answered. In this paper, in the research method, there is an extensive discussion on how the data is collected and subsequently how the research is conducted. Besides, the process of selecting respondents is explained.

The second quality criteria for research is reliability. The results of the study are reliable when they are independent of the particular characteristics (Yin, 2003). For a reliable study four sources of bias have to be controlled. The researcher bias can be controlled by using standardized coding that have been set by previous researchers. In order to minimize the researcher bias coding techniques used in other similar studies are used. In the paragraph “data analysis”, the coding techniques that are used in this study are explained in more detail. The instrument bias can be minimized by using multiple research instruments (van Aken, Berends & van der Bij, 2012), such as interviews, other literature studies, observations, questionnaires, and gathering data from archives. In order to reduce the instrument bias this study makes use of interviews with organizations that are involved in the process of CAMH care treatment and literature studies. The respondents’ bias can be controlled by asking different organizations, different people with different functions within the organization and asking people working on different departments within the organization. Therefore this study attempts to interview people from different organizations, as earlier explained in the “case selection” paragraph. The last bias that will be discussed is the situation bias. This bias can be controlled by making use of differences between the circumstances under which a measurement can be executed. For example, having appointments for interviews at various times during the day (van Aken,
Berends & van der Bij, 2012). The conducted interviews will all take place in one month and therefore it is difficult to minimize the situation bias.

The last quality criteria for research is validity. Validity refers to the relationship between a research result or conclusion and the way it has been generated (van Aken, Berends & van der Bij, 2012). Validity can be divided in three types of validity: construct, internal and external. Construct validity refers to the extent to which a measuring instrument measures what it is intended to measure, for example the interviews questions. Rowley (2002) states that the interview questions must be linked to the academic literature for a higher level of construct validity. Besides, the use of multiple sources of data might increase the level of construct validity. The questions that are questioned during the interviews are not completely linked to academic literature. However, besides conducting interviews in order to find results, this study also attempts to use academic literature to strengthen the findings that have been derived from academic literature. Therefore, the overall construct validity of this study can be seen as sufficient.

Internal validity concerns the conclusions about relationships between phenomena and external validity refers to the generalizability of research results to other organizations, groups etc. (van Aken, Berends & van der Bij, 2012). The conclusions about relationships that have been found in this study are based on five interviews. The total number of interviews is considerably low and therefore the suggested relationships are highly questionable. To explain whether the external validity is high or low is hard to define. The conducted interviews all took place in different organizations, but were related to the healthcare sector. The generalizability of this study is because of that reason is not seen as high.
Results

In this section the results derived from the interviews, off the record meetings\(^1\) and (academic) literature will be discussed. Firstly, the distinction between healthcare providers and municipalities will be discussed in order to analyze the results. The main part of this section will discuss the results from the interviews in more detail. Finally, based on the results from the interviews and findings from academic literature, a CBA in CAMH care will be outlined by means of a concise case study.

To be able to understand and analyze the results from the interviews, it is necessary to make a distinction between the two types of organizations that have been questioned; healthcare providers and municipalities. These organizations have different views and try to achieve different goals and objectives. The questions that were asked during the interviews to healthcare providers and municipalities slightly differ from each other. The municipalities got two more questions about evaluation techniques which healthcare providers did not get, since those techniques do not apply to healthcare providers. Therefore, the results from the interviews of both types of organizations are discussed separately. Overall, this study consists of three interviews held with healthcare providers and two interviews with municipalities. For privacy reasons this study will not mention the names of the organizations that have participated. Instead, abbreviations are used to give an overview of the results, such as P1 for a healthcare provider and M1 for a municipality. In the following, the results from the interview questions will be described in more detail by separate discussions of the most important topics, as indicated by separate headings. At the end of each topic a table can be found to see the results in a summarized fashion.

Quality of care treatment

Since January 2015, responsibilities for youth care have shifted from healthcare insurers to municipalities. To find out whether this transition has had an impact on the quality of care the following question was raised; “How does the new law in CAMH care influence the quality of providing care treatment?” This was an introductory question to establish whether the use of evaluation techniques such as a CBA is in fact desirable and helpful to relevant parties in

\(^1\) I had several conversations with people knowledgeable on this topic, who provided me with useful insights in conducting this research. This concerned Greet Vonk (General Director coaching centre), Trijn van der Meulen (Managing Director Kentalis), and Danielle Jansen (assistant professor at the University of Groningen).
adapting to changes. In other words, whether there is a need for the use of a CBA in CAMH care.

Healthcare providers

Healthcare providers in Friesland and Groningen are forced by municipalities to decrease their tariffs with at least 20%. As a consequence, some CAMH providers now feel pressure to work more efficiently in order to stay in business. The interviewee P1 stated: “Due to the cost savings of 20% forced by the municipalities we feel forced to treat more people in less time”. This trend might eventually result in a decrease of quality when children are not fully treated. Another suggested option is that CAMH providers treat the patient beyond the treatment period that is prescribed for a certain disorder. In other words, they take their losses in order to retain the quality of care treatment.

“If we start the treatment process we want to cure the child as much as possible. We are not going to say “I am sorry but time is up, and therefore you should help yourself now”. So in fact we pay money for letting our people treat children.” (P3)

The interviewee P2 explained that they had already changed their business model a few years ago. As a result they were already able to treat more children in the same period of time at the same quality level compared to other CAMH providers such as P3. However, despite the fact that they already did a good job several years ago, they are forced to decrease their tariffs as well. P2 stated: “It is easier for the traditional CAMH providers, for example P3, to overcome the cost savings of 20%. But we are punished for good behavior”. In order to stay in business, P2 feels forced to cut some services that are really expensive but can also be really valuable. A consequence of this trend is that the quality of CAMH care will be affected in a negative way.

“As a result of the cost savings we (healthcare providers) are forced to rethink our business process and figure out whether some of our services should be cut out of the process. If we have to decrease the services offered, the quality of treatment will be negatively affected.” (P2)

Municipalities

Since January 2015 the municipalities are responsible for the regulation of youth (mental) healthcare. The budgets that were provided by the government were decreased with 3% and therefore municipalities were already forced to change something in the field. Interviewee M1 stated that the transition towards the municipalities was and still is a huge task with some
difficulties. In addition to the 3% decrease in budgets, municipalities are less experienced in providing CAMH care compared to the healthcare insurers.

The municipalities in Friesland all agreed to reduce the treatment tariffs granted to healthcare providers with 20%. This was required in order to allocate the budgets in a proper way to the different healthcare providers. Secondly, it was done in order to stimulate the healthcare providers to work in a more efficient way and to rethink their business model.

“We did that to stimulate them to work in a more efficient way and think differently.” (M1)

The interviewee M2 stated that the cost savings of 20% are used for other activities in CAMH care. For example, the social working groups that work for the municipalities gained extra budget in order to pick up signals that might lead to heavier mental health problems at a later age.

“The new system that we are using is aimed at signaling mental health effects that occur at a young age. In other words, we want to take preventive action.” (M2)

Despite the cost savings of 20%, municipalities believe the quality of care treatment is not affected. The interviewee M2 stated that the quality of care is not negatively affected since the healthcare providers guarantee continuity. In other words, the quality level of care treatment is predetermined. However, interviewee M1 mentioned that it is hard to provide evidence on the quality of care treatment in CAMH and whether it has been affected due to the transition, since it has only been six months. The complaints that mainly derive from healthcare providers are seen as logical; every change will bring resistance.
Table 5: the quality of care

<table>
<thead>
<tr>
<th>Healthcare providers</th>
<th>Lower quality of care</th>
<th>Same quality of care</th>
<th>Higher quality of care</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Municipalities</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>M2</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Evaluation techniques

The question related to the topic of evaluation techniques was only raised during the interviews with municipalities as they are the party that would use such techniques in the healthcare process. This question and follow up question are raised in order to determine whether municipalities are familiar with these evaluation techniques and apply them. In the literature review several techniques, for example the CBA, were discussed and explained in more detail. To find out whether municipalities make use of evaluation techniques that contribute to determining whether care treatment is worthwhile, the following question was raised; “Which evaluation techniques are used to determine whether providing care treatment to children with mental disorders is worthwhile?”

The two municipalities that were questioned in this study both explained that they were not using any evaluation techniques in order to determine whether CAMH care treatment is worthwhile or not. The main reason that they both have provided is that they were not familiar with those techniques and they do not have the experience to use them. Surprisingly, they are both willing to use them in the near future because they now have the relevant data available. M2 is using an external organization, Fries Plan Bureau (FPB), that is able to execute measurements and provide some recommendations. However, M2 does not know which techniques are used nor on which data their recommendations are based. M2 also stated that their goal is to use only one technique relevant for all municipalities in Friesland and maybe for the whole of the Netherlands.
Table 6: evaluation techniques

<table>
<thead>
<tr>
<th></th>
<th>Used</th>
<th>Not used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Municipalities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>M2</td>
<td></td>
<td>X</td>
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</table>

The follow up question mentioned above is: “To what extent are direct and indirect benefits involved in the decision-making process about purchasing care for children with mental disorders?”. Both municipalities do not take the (in)direct benefits of CAMH into consideration before purchasing care. One reason that was mentioned by both municipalities is that, in their opinion, the measurements that can be used to identify benefits are based on assumptions and are therefore subjective.

“However, nowadays, the most techniques used base their findings pretty much on assumptions. And therefore we think the reliability is not high. Measures are merely subjective and moreover, it is difficult to precisely say whether expectations become reality.” (M1)

Table 7: benefits considered in the decision-making process.

<table>
<thead>
<tr>
<th></th>
<th>Considered</th>
<th>Not considered</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Municipalities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>M2</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Important benefits

In the literature review a description is given of the direct and indirect benefits that might result from CAMH care treatment. To find out whether these findings are consistent with the results from the interviews, the following question was asked; “If you take the outcomes in terms of benefits into account, which benefits are mainly important to you?” The main goal of this question is to find out which benefits are seen as relevant for a CBA and whether healthcare providers and municipalities share the same opinion. Before the question was asked, the terms
that are used in this question were explained in more detail to provide the interviewees with a better understanding of the question.

*Healthcare providers*

The effect of CAMH care treatment that is seen as valuable by all three healthcare providers is the gain in children’s health. The main goal of treatment is to cure the child and/or adolescent and let them participate in society as much as possible. P1 stated that, in their view, participation in society is the ultimate outcome of CAMH care.

*“The direct benefits of CAMH care, such as gain in health, is priority number one for us.”* (P1)

The indirect effects are seen as less valuable and therefore they are not deemed as important. One reason for that is the lack of knowledge. P3 explained that they are aware of the fact that indirect effects of CAMH care exist, but they are not taken into consideration because they simply do not know how to use them. Secondly, the indirect effects are seen additional side effects. P2 explained that saving money on the long term is wishful, but their aim is to heal the client as much as possible. All three healthcare providers explained that they were aware of the indirect effects, but they will not consider them since the effects are based on assumptions and are therefore considered unpredictable.

*“In our vision there are no ‘clear’ indicators that can prove providing good care will contribute to lower costs”.* (P1)

*Municipalities*

The results of the two interviews that were held with the municipalities show that the gain in health is the main priority in cases when CAMH care treatment is needed. The interviewee of M1 stated that the other effects that occur due to treatment can be seen as a bonus. M2 explained that participation in society as a result of gain in health is the number one priority. Similarly to healthcare providers, municipalities do not take indirect effects into account. These indirect effects are seen as unreliable and not precise. The interviewee of M2 said the following on indirect effects; *“The indirect effects that might arise are subjective and too much based on assumptions and are therefore seen as less valuable”*. 
Table 8: mainly important benefits

<table>
<thead>
<tr>
<th></th>
<th>Direct benefits</th>
<th>Indirect benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healthcare providers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>Participation in society</td>
<td>We do not consider the indirect benefits that might occur due to treatment</td>
</tr>
<tr>
<td>P2</td>
<td>Quality of life</td>
<td>We do not have the data to measure indirect benefits</td>
</tr>
<tr>
<td></td>
<td>Participation in society</td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>Gain in health</td>
<td>Indirect effects are not considered</td>
</tr>
<tr>
<td><strong>Municipalities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td>Participation in society</td>
<td>The indirect effects that might influence other budgets within the municipality</td>
</tr>
<tr>
<td>M2</td>
<td>The gain in health</td>
<td>Indirect effects that are related to one of our domains we are active in</td>
</tr>
</tbody>
</table>

**Top five**

In the previous question healthcare providers and municipalities were asked which benefits were taken into account. The next question can be seen as a sort of follow up question. The question that was raised towards healthcare providers and municipalities was the following; “Which types of benefits need to be considered in a CBA; what is your top five?” In order to be able to execute a CBA it is convenient to know which benefits are considered as most valuable by healthcare providers and municipalities.

**Healthcare providers**

Not surprisingly the healthcare providers consider the direct effects, for example gain in health, as the most valuable effects of CAMH care treatment. The interviewee from P2 stated that they only want to focus on the care treatment they provide and therefore, only the effects that derive from their care treatment are considered applicable. Moreover, the healthcare providers stated that they can only influence the direct effects and therefore the indirect effects are less valuable to them.
“We focus on the care treatment that we provide and the direct effects that derive from it. The other effects are less valuable to us because we cannot influence these effects.” (P2)

Another effect that is highlighted by P1 is the role of the parents in the process of care treatment. The effects that have an impact on the parents of the child need to be considered in a CBA. However, the other healthcare providers did not mention the role of the parents. Furthermore, all three healthcare providers mentioned that the effects that have an influence on the costs of municipalities need to be considered in more detail. The interviewee of P3 argued that “the effects that are less interesting for us as healthcare provider might be really valuable for municipalities and therefore they might be relevant for us as well, since we get the reimbursements from them.”

“For your research, it is important what the preferences of the municipalities are because they are responsible for the reimbursements.” (P1)

The healthcare providers were not interested to give a whole top five because they were not fully aware of the effects that might occur. P2 stated that considering these effects and translating them into monetary terms is a job for the municipalities and therefore less relevant for healthcare providers. P1 mentioned that creating a top five is not important because they do not consider the indirect effects in their treatment. For example, the increase in work productivity is something they cannot measure and that is why it is less interesting to them. However, municipalities now have the data to find out whether social welfare payments might decrease due to CAMH care treatment. This is a process that takes years but they have the opportunity to do so.

Municipalities

The gain in health of the patient is the number one priority which is stated by both municipalities. Another effect that both municipalities mention is the increase of labor productivity. The interviewee of M2 stated that an increase of labor productivity might result in lower social welfare payments, which in turn is really favorable for municipalities. However, to give this indirect effect the priority among other effects is not relevant in their opinion given the unreliability and underlying assumptions of the measurements. Compared to M1, the interviewee of M2 was able to give a top five of effects that need to be considered in a CBA. They mentioned that school drop-out is an effect that could be really interesting and related to
the level of education that a child achieves. The level of education is a good indicator to determine whether a person needs a social welfare payment in the future.

Lastly, the interviewee of M1 mentioned that the effects that arise on the short term are also really interesting for municipalities because every four year there are elections. Councilors are really interested in short-term effects since that might increase the possibility that they will be reelected.

“Effects that will occur after fifteen years are a really nice development, but it won’t help councilors to be reelected.” (M1)

Table 9: effects that have to be considered in a CBA.

<table>
<thead>
<tr>
<th>Healthcare providers</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four</th>
<th>Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>The gain in health</td>
<td>The role of the parents</td>
<td>Social welfare payments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>The gain in health</td>
<td>Social welfare payments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>The gain in health</td>
<td>School drop-out</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Municipalities</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four</th>
<th>Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>The gain in health</td>
<td>The increase of labor productivity for the parents</td>
<td>The increase of labor productivity for the children</td>
<td>Criminal behavior</td>
<td>The increase of labor productivity for the children</td>
</tr>
<tr>
<td>M2</td>
<td>The gain in health</td>
<td>The increase of labor productivity for the children</td>
<td>School drop-out</td>
<td>The level of degree</td>
<td>Costs of alcohol &amp; drugs abuse</td>
</tr>
</tbody>
</table>

Methods to translate direct benefits into monetary terms
The last two interview questions are aimed at gathering a better understanding of how healthcare providers and municipalities make use of methods or techniques in order to translate
the direct effects into monetary terms. The following question was raised; “Are there methods used in order to translate the direct effects into monetary terms?” Furthermore, information is provided to the interviewees in order for them to gain a better understanding of the methods and techniques that are available in the field. Lastly, the healthcare providers and municipalities were informed about the techniques that will be used in this study to translate the most important benefits into monetary terms.

Healthcare providers

All the questioned healthcare providers are familiar with methods that can be used in order to measure the quality of care. However they were not familiar with a technique such as the QALY with which the gain in health is measured with a ratio from zero to one. Instead they are using measures which are called “ROM-measurements”. Those methods use a different point of scale but in fact these methods both measure the same thing. Despite the fact that all three questioned organizations are familiar with methods that measure a gain in health, they were not familiar with techniques that can be used to translate the ratio’s into monetary terms.

“We as care provider are not familiar with the tools/methods that exist in order to translate benefits into monetary terms. We only use questionnaires to measure quality in terms of ratio’s.” (P2)

Two of the three healthcare providers definitely see the benefits of translating direct effects in monetary terms. The interviewee of P3 stated; “We think that such a method is really worthwhile in the future”. The method that P3 is referring to concerns the QALY after it has been explained to them how this method can be used in combination with the WTP to translate direct effects into monetary units. “With the use of such methods we are better able to convince municipalities that CAMH care is not expensive and is worthwhile over time.” (P3)

Municipalities

Like the healthcare providers, the municipalities were also not familiar with the techniques to translate direct effects into monetary terms. They both explained that there is a lack of knowledge in order to use those techniques. Secondly, both municipalities pointed out that the use of such techniques requires making assumptions. There is no guarantee that an expectation is actually going to happen. These two concerns are for municipalities decisive to be reticent with the use of such methods.
“The fact that the named methods are mainly based on assumptions is for us the main reason to avoid them.” (M1)

Whereas healthcare providers were mainly positive, the municipalities were more reticent concerning methods to translate effects into monetary terms. Instead of focusing on the benefits, the latter were more worried about the disadvantages of the methods. However, both municipalities are interested in reliable methods that can be used in the near future to translate direct effects into monetary terms. M1 pointed out that they are currently looking for methods that can be used as a sort of hand guide which does not exist yet in their opinion.

<table>
<thead>
<tr>
<th>Table 10: Methods to translate direct effects into monetary terms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Used</strong></td>
</tr>
<tr>
<td>Healthcare providers</td>
</tr>
<tr>
<td>P1</td>
</tr>
<tr>
<td>P2</td>
</tr>
<tr>
<td>P3</td>
</tr>
<tr>
<td>Municipalities</td>
</tr>
<tr>
<td>M1</td>
</tr>
<tr>
<td>M2</td>
</tr>
</tbody>
</table>

**Methods to translate indirect benefits into monetary terms**

This last question is asked for the same reason as the previous question. The only difference is that the indirect effects, instead of direct effects, are questioned. The question that was raised is; “Are there methods used in order to translate indirect benefits into monetary terms?“.
**Healthcare providers**

All three healthcare providers explained that they were not familiar and hence not using techniques that are able to translate indirect effects into monetary terms. The same reasons were named as mentioned in the previous question; the lack of knowledge and the fact that the measures are based on assumptions. Subsequently, P1 mentioned that translating indirect effects is more relevant for municipalities than for healthcare providers. Lastly, P3 mentioned that in addition to the lack of knowledge, there is also still a lack of data in order to use these methods.

“*Translating the indirect benefits into monetary terms is not relevant for us as care provider. Our primary task is to make sure we treat a client in such a way he or she is able to participate in society. Therefore the indirect effects are less important.*” (P1)

Despite the negative comments all healthcare providers mentioned that there is some potential for these techniques as the costs of CAMH care increase year over year. The HMC method is seen as a potential method that can be used in the future. However, M1 stated that in order to execute a CBA you always have to make certain assumptions and therefore it will not be a completely reliable method.

**Municipalities**

Both municipalities are not using techniques that are able to translate indirect effects into monetary terms. They were not familiar with the methods that were more elaborately explained to them. The same reasons that were given in the previous question apply here as well.

The interviewee of M1 explained that using methods to translate indirect effects is highly precarious even when discounting techniques are used. Therefore they are looking forward towards the implications that derive from this study. “*We are currently looking for methods we can use as a sort of hand guide in the future*”.

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### Table 11: Methods to translate indirect effects into monetary terms

<table>
<thead>
<tr>
<th>Used</th>
<th>Not used</th>
<th>Main reason</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healthcare providers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>X</td>
<td>Translating indirect effects into monetary terms is for us not beneficial. Our primary task is to heal our client and therefore we only consider direct effects.</td>
</tr>
<tr>
<td>P2</td>
<td>X</td>
<td>We have never heard about the methods that can be used to translate benefits into monetary terms.</td>
</tr>
<tr>
<td>P3</td>
<td>X</td>
<td>A lack of data and knowledge is the main reason we are not using methods to translate effects into monetary terms.</td>
</tr>
<tr>
<td><strong>Municipalities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td>X</td>
<td>Not familiar with these methods.</td>
</tr>
<tr>
<td>M2</td>
<td>X</td>
<td>These methods make use of assumptions</td>
</tr>
</tbody>
</table>

### Concise case study

Siebrand is a young man of 15 years old who has been diagnosed with a depression disorder. This disorder causes Siebrand to experience several problems such as mood swings, concentration problems, and the avoidance of social contacts. As a consequence of his mood swings, Siebrand has been arrested for several criminal offences that occurred over the last two years. He was, for instance, arrested for threatening people, fights, for using drugs and alcohol, and for destroying public and private goods. All of these charges resulted in a cost to our society of around 15,000 euros over the last two years. Subsequently, Siebrand was expelled from school because of his rebellious behavior and since he was incapable as a result of his
concentration problems. Lastly, Siebrand is afraid of engaging in social contacts since it is hard for him to trust people. Three years ago, Siebrand’s parents divorced after his father cheated on his mother with another woman. During that time, his father, a close family member, lied to Siebrand several times which damaged his ability to trust other people. The fact that he barely makes contact with other people is also one of the reasons that he is unable to attend regular lessons at school despite the fact that his results in the past showed that his school performance was above average.

After several conversations with responsible authorities, Siebrand was willing to accept treatment.

Consider the following assumptions:

- Before Siebrand was going into treatment, his QALY was 0.4. After two years, at the age of 17, his QALY increased to 0.7 due to treatment. With continued treatment Siebrand, will be able to maintain this QALY level.
- The Willingness to pay for a QALY is 20.000 euros per year for a ratio of 1.0.
- Siebrand went back to school and graduated for his HAVO certificate instead of VMBO
- Since 1.5 years he is no longer involved in criminal activities. If he had refused the offer for treatment, he would still most likely be involved in criminal delicts with average costs of 5000 euros until he would reach the age of 25.
- As a result of his treatment, the probability that Siebrand will need a social welfare payment is nihil. He is planning to study natural sciences, which offers a lot of job potential.
- Assume that Siebrand will die at the average age of 75 year.
- The life time horizon is used with a 4% discount rate. The total sum of the benefits will be decreased with another 25%. This can be seen as sort of risk minimizer.

Costs of treatment:
Intensive MHC was needed in order to cure Siebrand; he was treated in a psychiatric clinic for nine months. The costs for the whole nine months are estimated at 72.000 euros. After he finished the program in the clinic he received care on a regular basis for 10 hours each month. These costs are estimated at 15.000 euros in total for the 15 months afterwards he was released from the clinic. From now on, Siebrand will only visit the psychologists for two hours per month which will cost around 200 euros each month.
Overall, the total costs of treatment have been 87,000 euros over the last two years and from now on the costs for his treatment will be 200 euros per month (2400 euros on a yearly basis). The net present value of these regular costs of treatment is 49,304.33 euros. If we add up this amount to the 87,000 euros already incurred, the total costs of Siebrand’s mental care treatment amount to 136,304.33 euros.

Benefits of treatment:
The QALY of Siebrand increased with 75% to 0.7 after two years of treatment. He is able to maintain this level for the rest of his life with some mental treatment on a regular basis. The gain in health is a direct benefit that can be calculated in the following way: (QALY after treatment – QALY before treatment)* the stated amount for a QALY. Therefore the total amount of the direct benefit per year is (0.7-0.4)*20,000 = 6,000 euros. The net present value of the gain in health is 80,746.44 euros.

Because Siebrand was able to obtain his HAVO certificate instead of VMBO there are some indirect benefits that have been earned. Since Siebrand obtained a higher educational level, his average salary is on average 12000 euros higher per year (http://gemiddeldgezien.nl/meergemiddelden/201-gemiddelde-salaris-mbo). Assume that Siebrand is able to start his working career at the age of 21 and he will retire at the age of 66. He will pay around 30% income tax. The yearly cost saving of income tax for the government is 3600 euros for the length of Siebrand’s working life of 45 years. The net present value of that saving is now (at the age of 17 years) 63,761.68 euros.

Another indirect benefit that might reduce the total costs of CAMH care treatment are the saved costs as a result of Siebrand no longer committing criminal offences. This scenario assumes that Siebrand would have been involved in criminal activity for another eight years with an average societal cost of 5000 euros each year. The net present value of this saving due to mental care treatment amount to 33,663.72 euros.

The total value of benefits that is calculated is thus: 80,746.44 + 63,761.68 + 33,663.72 = 178,171.84 euros. In this scenario we have stated that the total amount of benefits will be reduced with 25% to minimize the risks of calculations that result from making assumptions. So from this scenario the potential benefits are 133,628.33 euros.
Subtracting the benefits from the costs of mental care treatment will give a net result of minus 2676 euros. In table 12 the total benefits are summarized in a clear overview and the calculations of the total amount of each benefit category are placed in appendix 7. The ultimate goal of this study is to exemplify how the use of CBA might contribute to a better understanding of the outcomes of CAMH care. This concise case study shows how the methods described earlier in the literature section contribute to the execution of CBA analysis. The net result is a negative amount but indicates that the costs of CAMH care are not that high as it is perceived by the municipalities and other involved parties. Taking the benefits of CAMH care into account will give a more adequate view of what the costs of CAMH care really are.

<table>
<thead>
<tr>
<th>Table 12: CBA analysis; overview of costs and benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs of treatment</strong></td>
</tr>
<tr>
<td>• Direct costs</td>
</tr>
<tr>
<td>Costs of treatment</td>
</tr>
<tr>
<td>• Indirect costs</td>
</tr>
<tr>
<td>Cost of treatment after care process</td>
</tr>
<tr>
<td><strong>Benefits of treatment</strong></td>
</tr>
<tr>
<td>• Direct benefits</td>
</tr>
<tr>
<td>Gain in health</td>
</tr>
<tr>
<td>• Indirect benefits</td>
</tr>
<tr>
<td>Criminality savings</td>
</tr>
<tr>
<td>Education level savings</td>
</tr>
<tr>
<td><strong>Net result of care treatment</strong></td>
</tr>
</tbody>
</table>
Discussion

The final section of this study starts with a conclusion in which the implications of the results will be discussed. Moreover, recommendations and further research that derive from this study are outlined. Finally, the limitations are put forward.

Conclusion

This study investigated how benefits of CAMH care treatment can be translated into monetary units in order to execute a CBA. Since January 2015 municipalities were given the responsibility over the budgets for the CAMH care. Both this transition and subsequent cost savings of 20% are developments that might suggest that the quality of care treatment is negatively affected. Therefore the need for a method, such as the CBA, becomes more and more important for relevant parties to indicate the overall effects of CAMH care. It might not be considered too expensive, but rather an investment, once all costs and benefits are taken into consideration.

The results of the first question suggest that the transition and the cost savings did not negatively affect the quality of care treatment. However, the interviewed healthcare providers all mentioned that money is less important to them than quality of care and therefore they guarantee the same level of care. Consequently, healthcare providers are forced to stay in business with less resources, e.g. money, compared to what they had in the past. In other words, they actually are paying money to cure their patients. For the upcoming year the budget for CAMH care will decrease another 5% so healthcare providers will experience even more pressure on their business model. Two things can be done at this point; either refine the business model and cut out services to decrease costs or make use of a CBA to convince municipalities that CAMH care is not expensive as it saves money in the future.

Furthermore, it was discussed which benefits have been taken into account when care is provided. Not surprisingly all participants mentioned that the ‘gain in health’ is the most important benefit that needs to be considered when care is provided. What was more surprising is that all three healthcare providers do not consider the indirect effects as important. The lack of experience and knowledge are the main reasons for them not to consider indirect effects as important. Moreover, both healthcare providers and municipalities argue that a major drawback
of considering the indirect effects of care is that it is mainly based on assumptions, which results in unreliable findings. Therefore, all participants are careful with considering indirect effects and so far only consider the direct effects.

To understand which benefits of CAMH care need to be considered in the execution of a CBA, healthcare providers and municipalities were asked to give a top five of the effects that might occur due to care treatment. It became evident that the gain in health is seen as the most valuable effect of care and therefore this needs to be considered in a CBA. This result is not surprising, since the gain in health is the primary goal of care. When taking a closer look into the results of healthcare providers, it is notable that not everyone was able to create a top five. The main reason for this is that in their opinion these effects are not important. In their eyes, only other parties such as municipalities, can benefit from these effects and therefore it is not worthwhile to make a top five for them. Nevertheless, they argued that aiming at the indirect benefits that are especially beneficial for municipalities might in turn indirectly benefit the healthcare provider. The top five that was given by the municipalities gave a clear indication that there is no exact guidance whether an indirect effect is seen as more important compared to others. Overall, it became clear from the interviews that participants were not familiar with the benefits that were known in the CAMH care sector, which could be the reason for the diversity of answers that were given. Consequently, based on the interviews it is not possible to give a clear top five of the benefits that occur due to care treatment which can be used for the execution of a CBA.

The last questions were aimed to find out whether healthcare providers and municipalities were familiar with methods that can be used to translate benefits that occur from CAMH into monetary terms. In the literature review it became clear that the QALY in combination with the WTP are useful methods to translate the direct benefits into monetary terms. The indirect benefits can be translated into monetary terms with the use of the HMC method. Despite the fact that a lot has been discussed in the academic literature about the use of such methods, the participants of this study were not familiar with these, and other, methods to translate benefits into monetary terms. The methods that have been discussed make use of assumptions in order to get findings. The fact that assumptions have to be made is one of the main reasons for the participants not to use such methods. Moreover, the lack of knowledge and expertise were named as arguments not to use these methods. Despite the reasons that were stated not to use them, all five parties were enthusiastic about the methods in this study which were explained to
them. Both municipalities mentioned that the use of a CBA in combination with the methods that can be used to translate effects into monetary terms provide an opportunity that all municipalities should consider. Indirectly, this opportunity might also positively affect the municipalities. For example, if it turns out that CAMH care treatment will lead to less social welfare payments in the future, municipalities may decide to increase the budgets for CAMH care.

The concise case study served as an example to illustrate how the costs, and direct and indirect benefits can be translated into monetary units. It indicates a way in which relevant parties can make use of evaluation techniques such as a CBA to gain a better understanding of the outcomes of CAMH care. The scenario outlined in this study showed that when considering several benefits, costs of treatment can be recovered to a large extent.

The ideas and techniques highlighted in this study provide CAMH care providers and municipalities with a toolkit for introducing the use of financial evaluation techniques in CAMH care. This toolkit can be used to offset the staggering lack of knowledge and experience in evaluation techniques of parties involved in the CAMH care process. The use of evaluation techniques such as the CBA allow for practitioners to gain more insights in ways to make indirect benefits of treatment more comprehensible. Fortunately, this study revealed that care providers and municipalities are receptive to the use of evaluation techniques as continuant budget cuts have them search for ways to improve their care process. However, even though involved parties have indicated their willingness to use evaluation techniques, they are hesitant to make the required assumptions inherent to such techniques. Such a way of thought is incompatible with a business perspective, in which assumptions underlie all day to day operations. For instance, an investment bank makes forecasts on exchange rates to ensure a profit. Businesses way of making assumptions to generate value is something particularly municipalities can learn from. In conclusion, as there are frequent changes in the healthcare sector and as academic literature continues to investigate the monetarization of indirect benefits from treatment, the challenge rests with municipalities and CAMH care providers to adopt evaluation techniques at a much greater rate than is being done today.
Limitations and recommendations

This study contains several limitations that are described in more detail. The first limitation concerns the rather low number of interviews that were held. In total there were five interviews with different people from different organizations aside from the unofficial meetings that have taken place with people involved in healthcare. Secondly, the concise case study considers only a few cost and benefit items that might occur due to treatment. As a result, the example CBA is not comprehensive enough to be used in practice. Moreover, the described situation concerns a fictional scenario which implies that the numbers and figures are not factual even though they have been estimated as good as possible.

From the limitations several recommendations for future research can be derived. Firstly, researchers should include more municipalities, CAMH care providers and other relevant parties in their research to strengthen the findings from this study. Secondly, more cost and benefit items that might arise from treatment should be taken into account to execute a precise CBA. Lastly, future research would benefit from replacing a fictional scenario by a real life situation (i.e. a real patient). A longitudinal study might be necessary to exactly measure the results that derive from CAMH care.

With regard to managerial implications, it became clear from the results that none of the interviewed organizations were familiar with evaluation techniques of care treatment such as the CBA, despite the fact that academic researchers already introduced these evaluation methods in the nineties. Therefore, it is important that both municipalities and healthcare providers gain more knowledge about the existing evaluation techniques so that they will be able to use them in practice.
Acknowledgements

In the last few weeks I realized that very soon I will start my career as a young professional in the business world. Writing the master thesis was an adventure for me personally with some ups and downs. Overall, I would say that I have learned a lot and gained some valuable insights that are useful for the start of my career in the business world.

I would like to thank the people who have supported me throughout the whole process of writing my master thesis. Firstly, I would like to thank Ben Crom, thesis supervisor of the MSc Organizational Management Control, for his support and feedback during the process of writing the master thesis. Secondly, I would like to thank my fellow students in the thesis group for providing feedback during each plenary session. I also would like to thank my family who have supported me during the whole process of writing my thesis.

Last but not least, I would like to thank the people who participated in the interviews, for providing information, insights and valuable knowledge on the subject of my thesis.
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Online reports & websites


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Appendices

Appendix 1: Budget 2015 CAMH care

Total budget and number of clients in youth health care which are transitioned to the municipalities in 2015

Home / Actueel / Nieuwsberichten / Van Rijn en Teeven: 3,9 miljard naar jeugd, 3 procent korting, verantwoord overgangsjaar mogelijk (inclusief meicirculaire 2014)
Appendix 2: Evaluation methods

Cost-effectiveness analyses (CEA)
The most commonly used approach to determine whether a program should be implemented is the cost-effectiveness analysis (CEA). CEA can be used to evaluate the outcomes and costs of interventions designed to improve health (Gold et al., 1996). The idea of using CEA is that it can be used as a cut-off point for resource allocation (Weinstein & Zeckhauser, 1973), and it assesses the impact of a treatment. The CEA compares the additional costs and health benefits of a specific type of health intervention to the old standard of care, and is expressed in a ratio where the denominator is a gain in health (e.g. extra life years) and the numerator is the costs associated with the health gain (Gold et al., 1996). A limitation of the CEA is that the most expensive and effective treatment will be selected if the budget will be large enough to finance the treatment (Sendi, 2008). To solve this, cost-effectiveness acceptability curves can be made to show the probability that a new intervention will be cost-effective for each pre-specified outcome improvement by the decision maker (Romeo, Byford & Knapp, 2005).

Cost-utility analyses (CUA)
A CUA is an economic technique for assessing the efficiency of healthcare interventions (Coons & Kaplan, 2006). It is considered by some to be a specific type of cost-effectiveness analysis in which the measure of effectiveness is a utility- or preference-adjusted outcome (Weinstein & Stason, 1977; Sloan, 1996). The CUA incorporates the quality of the health outcome achieved. The quality adjusted life years (QALY’s) is an outcome measure that is a commonly used approach to combine quantity and quality-of-life outcomes in economic evaluations (Drummond et al., 1997), it also incorporates the change in mortality and morbidity (Crom & Kamminga, 2015). Other outcomes measures that can be considered are, for example number of symptom free days, life years gained, or the disability adjusted life years (Eichler et al. 2004).

Cost-benefit analysis (CBA)
Another analysis that can be used to decide whether a program should be implemented is the cost-benefit analysis (CBA). In contrast to the CEA and CUA, the CBA is able to translate the outcome of CAMH care into monetary units. This implies that the costs and benefits of all individuals affected by CAMH care treatment should be included (Johannesson, 1996). The net
outcome of a CBA is expressed into monetary value, instead of a ratio. Besides the positive effects that have been expressed into monetary units also incorporates the saved costs and indirect benefits of the care treatment incurred in other sectors. The CBA subtract the indirect benefits of care (saved costs) from the costs, and therefore it gives a clearer overview of the benefits in CAMH care. Previous research has shown that CBA can be most helpful in cases when the non-health benefits are substantial (Hoa Le et al., 2013; Romeo et al., 2006; Rice, Kelman & Miller, 1992). The main advantage of the CBA is that it measures not only the saves in costs for health but it also measures the (in)direct benefits of the treatment in other sectors (Romeo, Byford & Knapp, 2005). In other words, CBA includes the whole social environment. The social environment incorporates the value of other social investments such as education, environmental quality and law enforcement (Gold, 1996). However, it remains difficult to express those (in)direct benefits into monetary terms which is the ultimate goal of this study.
Appendix 3: Interview protocol

In deze studie zullen verscheidende partijen worden geïnterviewd om een beter beeld
This study consists of multiple cases that are used to gain a better understanding of the business
problem. This study protocol can be seen as a hand guide for an interview. This protocol will
be written in English, but the interviews are in Dutch as people are more comfortable to speak
in their own language.

In general
- Every interview follows up this protocol.
- The parties that are involved in this study receive an e-mail with more background
  information about this study.
- The interviews are in Dutch, therefore I will write them down in Dutch.
- Interviews are recorded (if they agree) and worked out in detail.
- The parties that are involved in this study are familiar with the goal of this interview
- The transcription of the interview will be send to the interviewee for approval

The research
- Make use of follow-up questions during the interview to get a more in-depth interview
- The questions that are set-up beforehand can be used as a sort of checklist
- To make sure that all questions are asked make sure you handle the time that is left
  available
- Listen carefully and don’t judge on beforehand. The practical situation might differ from
  the theoretical.
- Only open questions in the interview
- Be prepared. Get to know as much as possible about the subject for a good discussion.

Before the interview (max. 5 minutes)
- Thank the interviewee for his time and cooperation to your study.
- Introduce yourself, the study and the intention of the interview before asking questions.
- Get permission to record the interview. Make clear that after the interview you will send
  the interviewee a transcript of the interview.
- Make it clear to the interviewee that you will manage the time and therefore you will
  guide the interview process.

Introductie vragen (Max. 10 minuten)
1. Hoelang bent u al actief in het werkgebied van de geestelijke jeugd zorg?
2. Hoe ervaart u de veranderingen die zich in het afgelopen jaar hebben voorgedaan? (Jeugdwet naar de gemeenten)

3. Kunt u mij iets meer vertellen over het proces van het inkopen van zorg?

_Hoofdvragen_ 

_Gemeenten/zorgverzekeraars_ 

4. Op basis waarvan wordt door jullie zorg (geestelijke jeugdzorg) ingekocht bij verschillende partijen?
   o Welke beslissingsvariabelen liggen hieraan ten grondslag?
   o Welke zijn voor jullie doorslaggevend?
   o Staat dit allemaal beschreven in het beleidsplan of wordt er gekeken naar elk individueel geval?

5. Welke evaluatie technieken worden door jullie toegepast om te achterhalen of het verlenen van zorg aan kinderen met geestelijke problemen het gewenste effect heeft gehad? (e.g. kosten-baten analyse)
   o Zo niet, waarom worden deze niet gebruikt?
   o Zo niet, zijn er plannen om deze in de toekomst te gaan gebruiken?

6. In hoeverre worden (in)directe baten betrokken in de besluitvorming voor het inkopen van zorg voor kinderen met geestelijke problemen?
   o Waarom worden genoemde (in)directe baten betrokken in de besluitvorming?
   o Zo niet, waarom worden deze niet betrokken in de besluitvorming?
   o Zo niet, Welke problemen ervaren jullie hiermee?
   o Zo niet, heeft u plannen om dit in de toekomst te veranderen?
   o Zo niet, wordt er puur gekeken naar de kosten?

7. Kijkend naar de baten die zich voordoen bij het verlenen van geestelijke jeugd zorg, welke zijn dan voor jullie dan het belangrijkst?
   o Wordt er geëvalueerd?
      ▪ Zo ja, volgens welke methode of op welke manier?
      ▪ Zo niet, waarom niet?
      ▪ Zo niet, zijn er plannen om dit in de toekomst wel te doen?
   o Wordt er gekeken naar de korte termijn of juist naar de lange termijn? (wanneer de effecten van het verlenen van zorg zich opdoen
      kort = tm 24 jaar, lang = vanaf 25 jaar tot moment van overlijden)
      ▪ Vanwaar deze keuze?

8. Ik heb een lijst met allerlei potentiële (in)directe baten van geestelijke jeugdzorg. Ik wil aan u vragen om een top vijf te maken en deze te prioriteren van “belangrijk” (1) naar “minder belangrijk” (5).
   o Waarom deze volgorde?
9. Welke methoden worden door jullie gebruikt om de **directe** baten als gevolg van behandeling te kwantificeren?
   - Hoe worden deze gebruikt en vanwaar deze keuze?
   - Zo niet, op andere gebieden? (e.g. ouderenzorg)
   - Zo niet, waarom niet?

10. Welke methoden worden door jullie gebruikt om de **indirecte** baten als gevolg van behandeling te kwantificeren?
    - Hoe worden deze gebruikt en vanwaar deze keuze?
    - Zo niet, op andere gebieden? (e.g. ouderenzorg)
    - Zo niet, waarom niet?

**Zorgaanbieders**

4. In hoeverre zorgt de nieuwe jeugdwet ervoor dat het invloed heeft op de kwaliteit van de zorgverlening?
   - Wat zou er kunnen worden verbeterd?
   - Tegen welke problemen loopt u aan?
     - Tijd
     - Aantal cliënten etc.

5. Kijkend naar de baten die zich opdoen bij het verlenen van geestelijke jeugd zorg, welke zijn dan voor jullie dan het belangrijkst?
   - Vanwaar deze keuze?
   - Wordt er geprioriteerd? Zo ja, waarom en hoe?
   - Wordt er gekeken naar de korte termijn of juist naar de lange termijn? (wanneer de effecten van het verlenen van zorg zich opdoen)
     - Vanwaar deze keuze?

6. Ik heb een lijst met allerlei potentiële (in)directe baten van geestelijke jeugdzorg. Ik wil aan u vragen om een top vijf te maken en deze te prioriteren van “belangrijk” (1) naar “minder belangrijk” (5).

7. Welke methoden worden door jullie gebruikt om de **directe** baten als gevolg van behandeling te kwantificeren? Om ze vervolgens te gebruiken om gemeenten te overtuigen dat het verlenen van jullie zorg geen geld kost, maar op termijn geld zal gaan opleveren.
   - Hoe worden deze gebruikt en vanwaar deze keuze?
   - Zo niet, op andere gebieden?
8. Welke methoden worden door jullie gebruikt om de indirecte baten als gevolg van behandeling te kwantificeren? Om ze vervolgens te gebruiken om gemeenten te overtuigen dat het verlenen van jullie zorg geen geld kost, maar op termijn geld zal gaan opleveren.
   - Hoe worden deze methoden gebruikt en vanwaar deze keuze?
   - Zo niet, waarom worden er geen methoden gebruikt?
   - Zo niet, zijn er plannen om in de toekomst methoden (e.g. human capital method) te gaan gebruiken? Zo ja, welke? Zo nee, waarom niet?
   - Zo niet, waarom niet?

Afsluitende vragen

- Heeft u nog documenten die van toegevoegde waarde zouden kunnen zijn voor mijn onderzoek?
- Heeft u nog vragen of opmerkingen?

Asluiten van interview

- Bedanken voor het interview
- Bevestig de gemaakte afspraken nogmaals.
## Appendix 4: Step plan for a CBA

<table>
<thead>
<tr>
<th>Steps of a Cost Benefit Analysis</th>
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<tbody>
<tr>
<td>Conduct problem analyses</td>
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<tr>
<td>Definition zero alternative</td>
</tr>
<tr>
<td>Definition project alternative</td>
</tr>
<tr>
<td>Determine the extra costs of project alternative compared to zero alternative</td>
</tr>
<tr>
<td>Determine the effects and benefits of the projective alternative compared to zero alternative</td>
</tr>
<tr>
<td>Present an overview of the extra costs and benefits of the project alternative</td>
</tr>
<tr>
<td>Present a distribution effect</td>
</tr>
<tr>
<td>Conduct sensitivity and scenario analyses</td>
</tr>
<tr>
<td>Present the results</td>
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</tbody>
</table>

Source: Faber & Smulders (2012)
Appendix 5: List of abbreviations

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<tr>
<th>Abbreviation</th>
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<td>CUA</td>
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<td>FCM</td>
<td>Friction Cost Method</td>
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<td>HCM</td>
<td>Human Capital Method</td>
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<td>Mental Health Care</td>
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<td>QALY</td>
<td>Quality Adjusted Life Year</td>
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<td>WTP</td>
<td>Willingness to Pay</td>
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</table>
Appendix 6: Transcript of an interview

Interview vragen voor gemeenten

Introductie vraag

1. Hoe ervaart u de veranderingen die zich in het afgelopen jaar hebben voorgedaan? (Jeugdwet naar de gemeenten)

Wij hebben er geen problemen mee gehad dat wij met deze jeugdwet extra verantwoordelijkheden hebben gekregen. Wij zijn zelfs van mening dat deze verandering in de toekomst zijn vruchten zal afwerpen. De reden hiervoor is dat wij naast de jeugdwet ook op andere terreinen verantwoordelijk zijn voor de mensen. We kunnen op deze manier beter monitoren wie wat nodig zal hebben. De transitie is een uitgelezen kans om het voor het kind beter te organiseren.

Daarentegen hebben we ook te maken gekregen met de bezuinigingen die vanuit de overheid zijn doorgevoerd en dat heeft wel geleid tot de nodige problemen. Welke we met veel samenwerken hebben kunnen oplossen. Een verandering op zich kost per definitie geld en als we tegelijkertijd ook nog gekort worden op het budget dan is dat inherent aan problemen.

De transitie is nu na veel tijd eindelijk goed gelukt maar de transformatie is een proces wat nog ingewikkelder is en we merken nu al dat we letterlijk en figuurlijk handen te kort komen om al het werk uit te voeren. Deze tekortkomingen zitten hem voornamelijk in het gebiedsteam. Het gebiedsteam wordt voornamelijk ingezet om de zware zorg te ontlasten. Het proces zal dus eerder in zijn werk gaan. Het kan worden gezien als een soort van preventie.

Het nieuwe systeem is voornamelijk gericht op preventie en signalering. Dus we willen aan de voorkant al meer mensen gaan inzetten om in de toekomst de zwaardere zorg te ontlasten of te vermijden.

Hoofdvragen

2. In hoeverre zorgt de nieuwe jeugdwet ervoor dat het invloed heeft op de kwaliteit van de zorgverlening?

Het eerste half jaar heeft de transitie weinig tot geen invloed gehad op de kwaliteit van zorg. De contracten zoals die er lagen moesten gewoon worden uitgevoerd. De continuïteit van zorg is gewaarborgd. Wij als gemeenten hebben ook een bezuiniging doorgevoerd met als gevolg dat zorgaanbieders hun tarieven naar beneden moesten aanpassen. We hebben in samenwerking met de aanbieders een lager percentage
afgesproken dan wat daadwerkelijk in de eerste instantie de bedoeling was. De genoemde 20% klopt in principe. Maar die 20% die we daarmee besparen wordt wel op één of andere manier aan zorg besteedt en komt dus niet terecht in andere potjes. Een voorbeeld, het bespaarde geld wordt aan de voorkant ingezet om de signalering van problemen eerder op te pikken. Wij verwachten dat we 20% besparing kunnen doorvoeren doordat de gebiedsteams (de voorkant) goed hun werk doen. Wel zijn we er ons van bewust dat het signaleren van problemen in een vroeg stadium niet altijd mogelijk is. We zijn ons daarom ook dermate van bewust dat specialistische zorg nodig is en daar maken we dan ook gebruik van.
Zodra een kind een bepaalde indicatie heeft gekregen zullen wij als gemeente niet eerst met behulp van onze eigen gebiedsteams deze problemen proberen te verhelpen. Wij schakelen in deze gevallen de hulp van instellingen die hierin zijn gespecialiseerd. “iedereen krijgt de zorg die hij of zij nodig heeft”.
Wij als gemeente proberen ook te achterhalen waar de oorzaak van problemen liggen. Dus naast de situatie van het kind te beoordelen zullen de ouders ook ondervraagd worden etc. “het hele plaatje wordt bekeken”.

3. Welke evaluatie technieken worden door jullie toegepast om te achterhalen of het verlenen van zorg aan kinderen met geestelijke problemen het gewenste effect heeft gehad? (e.g. kosten- baten analyse)
   - Zo ja, waarom deze techniek
   - Zo niet, waarom worden deze niet gebruikt?
   - Zo niet, zijn er plannen om deze in de toekomst te gaan gebruiken?

Wij gebruiken momenteel nog geen evaluatiotechnieken om in te schatten welke effecten het verlenen van zorg met zich heeft meegebracht. De verandering is voor ons ook een nieuw project en daarom hebben wij momenteel nog niet veel in kaart kunnen brengen. Het is in de toekomst zeker wel de bedoeling om met behulp van kwartaalreportages e.d. de effecten van zorg beter in kaart te laten brengen.
Vanuit Leeuwarden (centrale gemeente die de inkoop regelt) komen gegevens die wij in de toekomst zouden kunnen gaan gebruiken om te monitoren.
Het fries plan bureau is al heel hard bezig om in de nabije toekomst gegevens aan te leveren waarop de gemeenten het indelen van budgetten kunnen veranderen. Die zullen de data daadwerkelijk gaan verzamelen.
We proberen met andere gemeenten en beleidsmedewerkers tot één centrale aanpak te komen.

4. In hoeverre worden (in)directe baten betrokken in de besluitvorming voor het inkopen van zorg voor kinderen met geestelijke problemen?
   - Waarom worden genoemde (in)directe baten betrokken in de besluitvorming?
   - Zo niet, waarom worden deze niet betrokken in de besluitvorming?
   - Zo niet, Welke problemen ervaren jullie hiermee?
o Zo niet, heeft u plannen om dit in de toekomst te veranderen?
o Zo niet, wordt er puur gekeken naar de kosten?

Friesland heeft een bestek gepresenteerd aan alle zorgpartijen die actief in Friesland zijn. Het was voor zorgaanbieders mogelijk om zich hier op in te schrijven. En in dat bestek zit een bepaalde kwaliteitsmeting. Kwaliteitseisen worden er dus vooraf in opgenomen. De kwaliteit selecteer zich wel. Het is naar onze mening wel meer onzeker voor zorgaanbieders omdat ze ondanks een raamovereenkomst nog maar moeten wachten hoeveel cliënten ze kunnen krijgen. De metingen om kwaliteit te meten zoals de mening van de cliënten zijn in onze ogen wel degelijk subjectief en we moeten ons daarom daar niet blind op staren. Er worden indicatoren die suggereren dat de zorg op den duur goedkoper zal worden en deze indicatoren gebruiken we ook daadwerkelijk wel maar om exact te kunnen inschatten om hoeveel geld het gaat is naar onze mening niet goed mogelijk.

5. Kijkend naar de baten die zich voordoen bij het verlenen van geestelijke jeugdzorg, welke zijn dan voor jullie dan het belangrijkst? Welke worden door jullie in overweging genomen?
o Wordt er geëvalueerd?
  ▪ Zo ja, volgens welke methode of op welke manier?
  ▪ Zo niet, waarom niet?
  ▪ Zo niet, zijn er plannen om dit in de toekomst wel te doen?
o Wordt er gekeken naar de korte termijn of juist naar de lange termijn? (wanneer de effecten van het verlenen van zorg zich opdoen kort = tm 24 jaar, lang = vanaf 25 jaar tot moment van overlijden)
  ▪ Vanwaar deze keuze?

De winst in gezondheid is voor ons de belangrijkste baat bij het verlenen van zorg.

6. Ik heb een lijst met allerlei potentiële (in)directe baten van geestelijke jeugdzorg. Ik wil aan u vragen om een top vijf te maken en deze te prioriteren van “belangrijk” (1) naar “minder belangrijk” (5).
o Waarom deze volgorde?

De winst in gezondheid is voor ons de belangrijkste baat bij het verlenen van zorg. Het voorkomen van schooluitval is voor ons erg belangrijk. Het opleidingsniveau van kinderen.

In hoeverre kunnen we deze baten analyseren maar kunnen we deze ook daadwerkelijk kwantificeren en zijn deze ook daadwerkelijk representatief. Wij zijn zeker van mening dat deze baten op één of andere manier zullen gaan optreden maar er is nog te veel grijs gebied. Wij proberen zo vroeg mogelijk de signalen op te pikken.
in de samenleving met de gedachte om op vroege leeftijd problemen te behandelen om op langere termijn kosten besparen.

7. Welke methoden worden door jullie gebruikt om de directe baten als gevolg van behandeling te kwantificeren?
   - Hoe worden deze gebruikt en vanwaar deze keuze?
   - Zo niet, op andere gebieden? (e.g. ouderenzorg)
   - Zo niet, waarom niet?

Zijn we niet bekend mee.

We krijgen vaak onderzoeksresultaten toegestuurd van externe partijen. We gebruiken deze onderzoeken om onze werkwijze op aan te passen. Maar het daadwerkelijk hanteren van methoden doen we niet. Ondanks het feit dat er mooie onderzoeksresultaten naar voren komen maar desondanks is alles gebaseerd op aannames. Dit is voor ons de voornaamste reden om niet te werken met zulke methoden. Ook voor de toekomst zien wij voor zover hier nog geen toekomst voor weg gelegd.

Het budget dat wij krijgen wordt op een laag boven ons (regering) wordt al verdeeld op basis van inkomensniveau, werkloosheidspercentage etc. Er wordt dus al rekening gehouden met bepaalde effecten die een invloed zouden kunnen hebben.

8. Welke methoden worden door jullie gebruikt om de indirecte baten als gevolg van behandeling te kwantificeren?
   - Hoe worden deze gebruikt en vanwaar deze keuze?
   - Zo niet, op andere gebieden? (e.g. ouderenzorg)
   - Zo niet, waarom niet?

Kan ik helemaal niets over zeggen omdat we hier helemaal niet bekend mee zijn.
Appendix 7: Overview of calculations for NPV in the concise case study

Increase of tax revenues

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### Gain in health

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Yearly costs

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Discount rate

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Costs of treatment
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