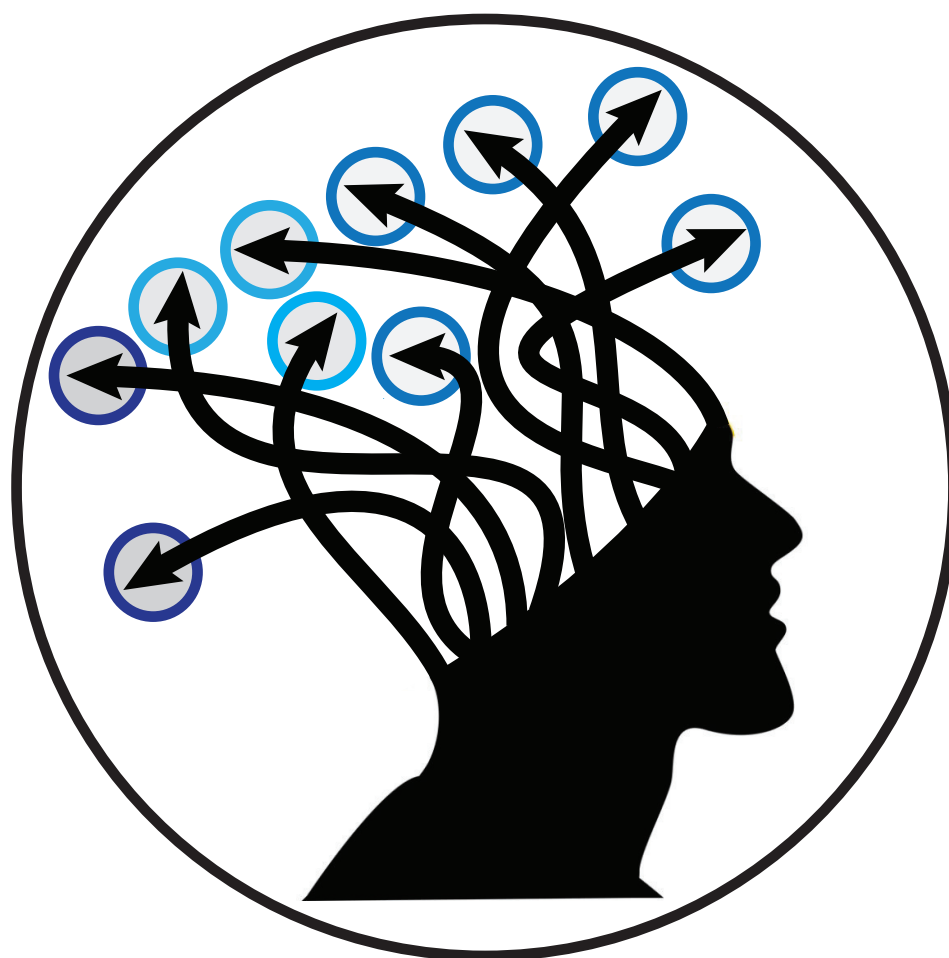


ADHD clinics in the Netherlands

*The characteristics and future perspective of ADHD clinics,
in view of the changes in the organization of mental health care.*



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TABLE OF CONTENTS

TABLE OF CONTENTS	4
PREFACE	6
EXTENDED ABSTRACT	7
1. BACKGROUND INFORMATION	10
1.1 INTRODUCTION TO ADHD	10
1.2 SHORT HISTORY.....	11
1.3 CURRENT CRITERIA FOR THE DIAGNOSIS AND TREATMENT OF ADHD	12
1.4 PREVALENCE.....	13
1.4.1 WORLDWIDE PREVALENCE.....	13
1.4.2 PREVALENCE IN THE NETHERLANDS	14
1.5 ADHD CONTROVERSIES	15
1.6 ADHD PATIENTS IN THE NETHERLANDS	16
1.6.1 HEALTH CARE UTILIZATION.....	16
1.6.2 HEALTH CARE COST.....	17
1.7 DEVELOPMENT OF ADHD CLINICS	18
1.8 FUTURE PERSPECTIVE OF ADHD CLINICS	19
1.8.1 CHANGES IN THE HEALTH CARE SYSTEM	19
1.8.2 QUALITY CRITERIA	21
1.9 AIM OF THE STUDY.....	22
1.10 RESEARCH QUESTION AND SUB QUESTIONS.....	23
1.11 CONTENT OF THE THESIS.....	23
2. RESEARCH DESIGN AND METHODOLOGY	24
2.1 INTRODUCTION.....	24
2.2 RESEARCH DESIGN	24
2.2.1 RESEARCH METHODS	24
2.3 STUDY SAMPLE	26
2.3.1 POPULATION	26
2.3.2. SAMPLE AND SAMPLE SIZE	27
2.4 SWOT ANALYSIS.....	28
2.5 OVERVIEW.....	29
3. THEORETICAL FRAMEWORK	30
3.1 INTRODUCTION.....	30
3.2 ORGANIZATION.....	30

3.2.1 ORGANIZATION TYPE	30
3.2.2 APPLICATION OF THE MULTIDISCIPLINARYGUIDELINE AND/OR PROTOCOL.....	31
3.3 PRACTITIONERS	33
3.4 PATIENT POPULATION	34
3.5 TREATMENT PROCESS.....	34
3.5.1 PHASE 1 REGISTRATION AND INTAKE	35
3.5.3 PHASE 2 INDICATION.....	38
3.5.4 PHASE 3 CARE ALLOCATION AND TREATMENT PLAN.....	38
3.5.5 PHASE 4 MONITORING AND ADJUSTING TREATMENT	39
3.6 APPLICATION	39
4. RESULTS.....	40
4.1 INTRODUCTION.....	40
4.2 ORGANIZATION.....	40
4.3 PRACTITIONERS	42
4.4 PATIENT POPULATION	44
4.5 TREATMENT PROCESS.....	44
4.5.1 IDENTIFICATION (REGISTRATION)	45
4.5.2 DIAGNOSTICS/CLASSIFICATION (INTAKE).....	45
4.5.3 INDICATION	45
4.5.4 TREATMENT (CARE ALLOCATION/DEVELOP TREATMENT PLAN).....	46
4.5.5 TREATMENT (MONITORING/ADJUSTING TREATMENT).....	47
4.6 FUTURE PERSPECTIVE.....	48
4.7 SWOT ANALYSIS.....	50
5. CONCLUSION.....	53
5.1 INTRODUCTION.....	53
5.2 SUB QUESTIONS	53
6. DISCUSSION.....	58
ABBREVIATION	62
REFERENCES	63
APPENDIX	70
APPENDIX 1 – DSM-IV CRITERIA FOR ADHD.....	71
APPENDIX 2 – CRITERIA OF MULTIDISCIPLINARY GUIDELINE TRIMBOS.....	72
APPENDIX 3 – QUESTIONNAIRE	76
APPENDIX 4 – ADHD CLINICS IN THE NETHERLANDS.....	85
APPENDIX 5 – FLOWCHARTS OF PARTICIPATED ADHD CLINICS	93
APPENDIX 6 – SWOT ANALYSIS	104

PREFACE

This research, which was developed during an internship at Eli Lilly and Company, is intended to complete my degree Health Economics Policy and Law at the Erasmus University of Rotterdam. The internship was from of August 2011 until March 2012. During my research, I have enjoyed the support of several of Lilly's employees. I am grateful for their help during the process. I would like to thank Jolanda Krijnen and Presto Weliani for the day they have taken me to several institutions and physicians. I would also like to thank Peter van Driel for his conversations about health insurers. In particular, I would like to thank my supervisor Dagmar Kuijpers-Bos for her support, advice and trust in the result. Furthermore, I would like to thank my supervisor at the Erasmus University Leona Hakkaart for her guidance and counseling. One but last, special thank for all participants of the involved ADHD clinics.

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EXTENDED ABSTRACT

Attention Deficit Hyperactivity Disorder (ADHD) is a common psychiatric disorder, which is often associated with co-morbidity. Last century the number of diagnosed children, adolescents, and adults with ADHD has increased significantly. However, lack of clarity and many controversies about the disorder and how to treat and diagnose people with a presumption of ADHD occur. Moreover, it has been indicated that many ADHD patients are not treated by the most adequate practitioners. Research has shown that untreated and unrecognized ADHD has a major financial impact and may result in high economic cost. However, waiting times could be up to several months before a medical specialist sees a child. For these reasons, there is need for appropriate diagnostic process and clarity in the classification of children and adolescents with a presumption of ADHD.

The development of ADHD clinics was one of the initiatives to reduce long waiting lists. The intention was to create a manner to include all the aspects of the diagnostic process in the shortest possible process, covering all relevant elements for the diagnosis. However, not much consistency between these ADHD clinics can be noticed since they all apply their own instruments, practitioners and techniques to achieve their goal. For that reason, an ADHD clinic in this research is described as an institution with a specific program or focus on the diagnosis and treatment of ADHD.

Since not much is known about the phenomenon ADHD clinic, this research is the first attempt to provide more insight and information about this topic. The objective of this research is the provision of an overview of the characteristics of ADHD clinics in the Netherlands in terms of type of organization, involved practitioners, patient population and the treatment process. The future perspective for these ADHD clinics is evaluated related to the current changes in the health care system. Based on the obtained results and information, a systematic overview of the strengths, weaknesses, opportunities and treats is created through a SWOT analysis.

The research design is descriptive in nature and consists of a qualitative research and a literature search. The literature search was focused on obtaining information about the characteristics of ADHD clinics, the current developments in mental health care and their relevance to the future impact on the ADHD clinics. The formulated characteristics of the ADHD clinics were the starting point of the semi-structured questionnaire, including 37 questions. The questions were divided into three parts: the organization, the ADHD clinic and the applied guideline and/or protocol. The qualitative search consists of interviews of about one hour with employees of the participating ADHD clinics. Several institutions were approached to obtain

participants. In the end, ten different persons were willing to participate in the research. All interviews were recorded and the treatment process of each clinic was elaborated in a flowchart. To verify and adapt the obtained information, an E-mail and a letter were sent to all participants to exclude potential miscommunications. Further, participants were contacted in the final stage to obtain their opinion on the future perspective of ADHD clinics. Also a care purchaser of an insurance company was contacted by phone to get information about his insight in the effects of the development in the health care system on ADHD clinics.

The result of the research includes information about the four defined characteristics. First, three different types of organization exist, namely those related to hospitals, those related to mental health institutions (GGZ) and independent organizations (ZBC). The purpose of each ADHD clinic was to create more efficiency in the process of diagnosis and treatment. In nine out of the ten participating institutions, the multidisciplinary guideline for ADHD is applied. Almost all institutions use some kind of protocol, which they have developed based on the multidisciplinary guideline. Secondly, the team of involved practitioners in each clinic varies between the types of institutions and may include child-and youth psychiatrists, paediatricians, psychologists, nurses, secretaries, and/or other professionals. In the mental health institutions more psychiatrists are active, while in hospitals more paediatricians are employed. Thirdly, the target group of the ADHD clinics is about the same as the ADHD guideline, which is based on the DSM-IV criteria (4 to 18 years). Finally, the treatment process is based on four phases: identification (registration); diagnosis / classification (intake); indication; treatment (care allocation/develop treatment plan); and treatment (monitoring/adjusting treatment). Each client generally goes through a similar process; however, the content differs among the ADHD clinics, as do the waiting times.

The secondary aim of the thesis was to discuss the future perspective of ADHD clinics. Recently, several changes have been implemented in the health care system, which have consequences for mental health care. Health insurance companies have generated more risk and will therefore contract health care providers based on strictly formulated requirements to stimulate efficiency and improve quality of provided mental health care. The set criteria can be seen as constraints for the diagnosis and treatment of ADHD in these clinics and are based on scientific research (Multidisciplinary guideline) and input of patient organizations.

In general, most mental health institutions employ qualified professionals but the organizational process may be inefficient. The diagnosis and treatment process should therefore be more streamlined. However, specific ADHD clinics are in generally directed to clients with solely ADHD, while ADHD is often associated with co-morbidity. This means that more research and

different kind of treatments are often necessary. Large mental health institutions are able to treat and diagnose patients with more complex problems. Patients should be treated in the right institution and unnecessary treatment should be prevented. Nevertheless such investments require time and adaption in the organization of mental health institutions. Currently, institutions are forced to provide the best attainable care for (ADHD) patients in the most efficient manner. Several clinics assume that they provide good care; however, these assumptions have not been investigated or confirmed yet. However, many clinics are currently not able to comply with the set criteria due to insufficiently available professionals according to health insurance companies. It seems that to develop a well running ADHD clinic, a clinic should act conform the set criteria of health care insurance companies since otherwise they probably will not be contracted.

Concluded, self-regulation is developing in this market. Changes in the financial system of care for ADHD clinics may have significant impact on the characteristics and absolute number of ADHD clinics. Inefficient clinics are forced to stop since health insurers will no longer contract them. Mental health institutions are in general in the best position to comply with the set criteria of health insurance companies. However, outside the criteria of health insurers it is not clear whether these ADHD clinics are in fact the most effective and the most profitable. It is shown that hospitals or independent health centres with an ADHD clinic often refer complex patients to mental health institutions since they do not frequently have the suitable professionals to treat these patients. This method seems inefficient since many children with a presumption of ADHD are referred to a specific ADHD clinic, while in many of the cases other disorders occur also which may in general result in another referral to a mental health institution. For that reason, it may be recommended to study the effectiveness of ADHD care. To stimulate efficiency it seems important to define the right group and refer the patient to the right place, for example by the general practitioner. Training and education may be a manner to stimulate better coordination of ADHD patients.

1. BACKGROUND INFORMATION

1.1 INTRODUCTION TO ADHD

ADHD or Attention Deficit Hyperactivity Disorder is a common psychiatric disorder (Harmanny, 2011). The disorder is generally described as a neurobiological disorder with a genetic component and environmental influences (Zuckerman, Diamond & Shuper, 2011) and is characterized by inattention (concentration, distractibility), hyperactivity, and impulsiveness that occur in various combinations across school, home, and social settings (American Psychiatric Association, 2000). "Overall, ADHD is one of the best-researched disorders in medicine, and in the overall data on its validity are far more compelling than for many medical conditions" (Goldman et al., 1998). However, lack of clarity about how to treat and diagnose ADHD still occurs. Despite these ambiguities, "there is no debate among competent and well-informed health care professionals that ADHD is a valid neurobiological condition that causes significant impairment in those whom it afflicts" (Pliszka et al., 2007). It impairs social, academic, and occupational functioning in people of all ages, both children and adolescents, as adults (Dopheide & Pliszka, 2009).

Last century the number of diagnosed children, adolescents, and adults with ADHD has increased significantly. Attention for the disorder has grown, both in the medical field as with the general public. Some researchers have pointed out that ADHD might be a 'fashion' disorder, often due to statements in the media (Nieweg, 2006). However, ADHD is strongly genetically determined and may cause lifetime symptoms and dysfunctions (Wilens & Spencer, 2010). Symptoms can be recognized in preschool age, may progress into functional impairment and behavioral problems in later childhood and may keep on during adolescence (Wigal & Wigal, 2007). Furthermore, co-morbidity of ADHD with other disorders occurs very often. It seems that 69% of children with ADHD can have one or more coexisting conditions, like depression, conduct disorder, oppositional defiant disorder, Tourette's syndrome, and learning disabilities. These conditions may complicate a diagnosis of ADHD (Jensen et al., 1990). Research has shown that children and adults diagnosed with ADHD perform below their intellectual level, and experience learning, working and relational problems (Kooij, 2009). The disorder is only noticeable in a child's behavior and when attention differs from age-matched peers (Wigal & Wigal, 2007), and when this behavior has formed into a recognizable and persistent pattern (Buitelaar & Kooij, 2000).

In different studies it has been shown that not or undertreated ADHD has social and economic impact. It is shown that people with ADHD have 50% more bicycle accidents (DiScala et al.,

1998), 33% more first aid visits (Leibson et al., 2001), and are involved in car accidents 2 to 4 times more often. (NHTSA, 1997; Barkley et al., 1993; (Barkley et al., 1996) in comparison with children and adolescents without ADHD. Further, 46% of children and adolescents with ADHD are expelled from school and 35% do not finish school at all. (Barkley et al., 1990). Children and adolescents with ADHD also run twice as a great risk to abuse substances (Biederman et al. 1997). Moreover, they start at a younger age and the chance of stopping the abuse is less likely in adulthood (Pomerleau et al., 1995). Moreover, in the family situation there are in general 3 to 5 times more divorces (Wilens et al., 1995) and 2 to 4 times more arguments with brothers and sisters (Mash & Johnston, 1983). Finally, people with ADHD have reduced productivity in their work, resulting in a negative economic impact for the employer and the employee and his/her family (Noe, 1995).

In short, research has shown that children and adolescents with ADHD are subject to significant short- and long-term academic deficiencies (Frazier et al., 2007), social impairment (Bagwell et al., 2001), and consequently high annual societal cost (Wigal and Wigal 2007). ADHD does not resolve during puberty for the majority of children (Biederman et al., 1996; Ingram et al., 1999). And, diagnosis is complicated due to frequently present co-morbidity of psychiatric disorders in the patient population (Biederman et al., 1991). For that reason, it is important to include several aspects and areas in the diagnosis and treatment of ADHD.

1.2 SHORT HISTORY

Until the 1970s, it was assumed that ADHD was merely a childhood disorder and that children (mainly boys) outgrew it in adolescence (Barkley, 2000). In 1902, the behavior of these children was described by British pediatrician George Still as ‘impulsive and extreme’. These children were seen as people with a lack of self-control (Berg, 2008). The enhancement and complication in current research, and understanding of the disorder are a result of the continuous changing of diagnostic criteria, the developing conceptualization, and international differences in diagnostic (Stubbe, 2000). Explanations for the behavior shifted therefore to the central systems in the brain which regulate behavior and are thus not solely based on parental influences ‘parent-blaming’ (Nieweg, 2006). For that reason, the name of the disorder has been changed several times since 1902 (*table 1.1*).

Data	Name
1902	Morbid Defect of Moral Control
1930	Minimal Brain Damage
1960	Minimal Brain Dysfunction
1968	Hyperkinetic Reaction of Childhood
1982	Attention Deficit Disorder
1987	Attention Deficit Hyperactivity Disorder
2006	Attention Deficit/Hyperactivity Disorder
2011	Attention Deficit/Hyperactivity Disorder

Table 1.1 – Names for ADHD since 1902
Source: Windt (2011)

The change in name is due to shifts in emphasis of the disorder. Minimal Brain Damage (MBD) is the predecessor of ADHD in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), which is developed by the American Psychiatric Association (APA). The DSM is used as the standard for psychiatric diagnoses and treatments. The 'D' of damage was changed into dysfunction since no supporting evidence existed for provable brain damage (Harmanny, 2011). In 1994, the fourth edition (DSM-IV-TR) was published, which is still applied. In the DSM-IV, a separation is made between the criterion 'inattention' and the criteria 'hyperactivity' and 'impulsiveness'.

The DSM-IV provides diagnostic criteria to enlarge the reliability of the diagnosis (American Psychiatric Association, 2005). Moreover, the DSM-IV is the most applied classification system for mental disorders, mainly used in second line. In first line, the ICD-10 is more often applied (Vink & Wamel, 2007). In addition, the multidisciplinary guideline for ADHD maintains the DSM-IV to classify children and adolescents with behavior problems (Trimbos-Instituut, 2005).

Before the development of the DSM-IV, ADHD was seen as a typical child disorder. In the DSM-IV, the criteria (*Appendix 1*) for ADHD are focused on children, adolescents and adults. Currently, different criteria for physicians and parents are being developed for the assessment and treatment of children with (a presumption of) ADHD (Lannelli, 2011). The DSM-IV is intended to be applicable in a wide array of contexts and can be used as a tool for clinicians and researchers for education and research. Only people with sufficient education and practical experience (e.g., physicians, nurses, social workers, psychologists, occupational and rehabilitation therapists, and counselors) have the authority to apply the DSM-IV.

1.3 CURRENT CRITERIA FOR THE DIAGNOSIS AND TREATMENT OF ADHD

The applied criteria for the diagnosis and treatment of ADHD in children and youth, like the DSM-IV, in the Netherlands are based on scientific evidence. The most common directive currently in use is the multidisciplinary guideline for ADHD in children and youth, which was developed in 2005 (Trimbos-Instituut, 2005). This guideline is based on evidence derived from published scientific research. Relevant articles were sought after by systematical search actions. Databases from PubMed, Cochrane, Embase and PsycINFO (from 1995 up until half 2003) were used (Trimbos-Instituut, 2005). Next to the guideline the "Kenniscentrum" for child-and youth psychiatry is an important and up-to-date source of information concerning mental disorders for parents, teachers and professionals. Information provided on the site is partly based on the Trimbos multidisciplinary guideline of 2005 and on more recent research and publications

about ADHD diagnosis and treatment possibilities (Elling & Minderaa, 2010). Next to the website of the “Kenniscentrum” the theme file ADHD in the database of the Nederlands Jeugdinstituut (Dutch Youth Institution) also offers background information and treatment options (Elling & Minderaa, 2010).

The guideline is developed to support caregivers and offers several recommendations for the diagnosis and treatment of children and youth with (a presumption of) ADHD (see Chapter 3). The most important aspects of the criteria for the diagnosis, the involved practitioners and the treatment of ADHD in children and youth can be found in *Appendix 2*. For more detailed information, the recommendations of the guideline (Trimbos-Instituut, 2005) can be referred to.

The recommendations from the Trimbos guideline are based on publications from 1995 up until half 2003. It might be clear that professionals apply new and more recent publications. However, this guideline is still the guidance for many practitioners for the diagnosis and treatment of ADHD in children and youth.

1.4 PREVALENCE

1.4.1 WORLDWIDE PREVALENCE

It seems that worldwide prevalence of ADHD is increasing (Kelleher et al., 2000; Mandell et al., 2005). A recent study showed that the prevalence of ADHD was estimated at 5.3% (Dopheide & Pliszka, 2009). It showed that 3–5% of all children and 1–4% of all adults of the total population have ADHD. Moreover, the ratio of boys to girls diagnosed with ADHD is approximately 4:1 in the general population (American Psychiatric Association, 2005). The combined inattentive and hyperactive-impulsive ADHD type appears mostly in children, respectively 60-70%. It seems that 20-30% of the children have primarily the inattentive type and 5-10% has primarily the hyperactive-impulsivity type. It is shown that the prevalence of the inattentive type increases in adolescence and adulthood (Faraone et al. 1998).

Unfortunately, different study methods between countries are cause of the variability in ADHD prevalence among geographic locations (Dopheide & Pliszka, 2009). Methodological differences may be explained by the application of the ICD-10 or the use of the DSM-IV. Both classification systems can be used as standards for the diagnosis of ADHD. “These criteria provide very similar lists of symptoms but recommend different ways of establishing a diagnosis” (Polanczyk et al., 2007). ADHD prevalence rates based on DSM-IV are expected to be higher than those based on ICD-10 (Polanczyk et al., 2007). In addition, the ICD-10 is mainly applied in first line health care, while the DSM-IV is used in second line health care (Vink & Wamel 2007). In other words,

variation in diagnoses may exist due to the use of different methodological tools, which may provide other insights and results. Moreover, practitioners of all types vary in the degree to which they apply the criteria for the diagnosis of ADHD (Committee on quality improvement, 2000).

1.4.2 PREVALENCE IN THE NETHERLANDS

In 2010, the number of children and adolescents up to 23 years in the Netherlands was 4.5 million. From this group 15% had psychological problems and 7% of these children had severe problems and needed mental health care (Hollander et al., 2006). However, only 3% of these children actually received care (Bogt, Dorsselaer & Vollebergh, 2003). While psychological problems in young age are a generic risk in adulthood for mental disorders (Rutter et al., 2006) and have much impact on daily functioning (Willems et al., 2011). In the period up to 2007, youth mental health care faced an increasing demand for care. Aim was to help as many as possible clients. Focus is therefore on improvement of the (in)-flow and efficiency (Willems et al., 2011). In 2009, 267,500 clients were treated in youth mental health institutions. The majority of these clients were provided with an ambulant treatment, respectively 96% (Willems et al., 2011).

The prevalence of ADHD is unknown in the Netherlands, for that reason the number of diagnosis is mainly based on foreign research (Elling, 2008). However, figures on medication are available from registration of ADHD medication through pharmacists (Stichting Farmaceutische Kengetallen, 2011). Though, not every person with ADHD is using medication (Pereira, Kooij & Buitelaar, 2011). According to figures of the first half-year of 2009, 75,000 children and 38,000 adults were prescribed ADHD medication. Based on a prevalence of 5% in children and a total of 4 million children in the Netherlands from 0 to 19 years (CBS, 2009), 200,000 children may be diagnosed with ADHD. Based on these estimates, 37.5% (75,000) of these children is using ADHD medication (Pereira, Kooij & Buitelaar, 2011).

According to the Dutch Health Council, the prevalence of ADHD in the Netherlands of children below the age of 14 is 2-8%. Two percent of this population has severe symptoms of ADHD (Loo-Neus, 2006). Also the authors of the Dutch multidisciplinary guideline for the treatment and diagnoses of ADHD (Trimbos-instituut, 2005) are assuming that 3-5% of the children under 16 have ADHD (Berg, 2008). In 2003, Schoemaker et al. assumed that approximately 1 to 3 % of the adolescents are diagnosed with ADHD (Berg, 2006). They claimed that data of the scope of adolescents (13 to 17 years) is available in the Netherlands only (Berg, 2008). Based on this sample, approximately 13,000 adolescents have ADHD (Meijers & Verhulst, 2006).

In contrast to what is assumed in the previous paragraph (1.4.1 Worldwide prevalence), Dutch research has shown that the number of children with ADHD has not increased the last twenty years (Gezondheidsraad, 2000). The disorder is becoming more recognizable by health care givers, teachers and parents. For that reason, only the number of treated children is increased but not the number of children with ADHD (Schoemaker et al., 2003; Buitelaar, 2001).

1.5 ADHD CONTROVERSIES

From the moment ADHD was stated as a mental disorder, much controversy about the topic has existed. On the one hand, some experienced clinicians and specialists believe that many children are not being diagnosed since the condition is not sufficiently recognized. On the other hand, some claim that ADHD is over diagnosed due to parents who are trying too hard to label their children (Steer, 2010). The problems are based on several aspects and influences of the environment, which may lead to controversies in people about the emergence and growth of ADHD (Steer, 2010).

The diagnosis of ADHD is ambiguous. This means that no physical tests – like a blood test – to proof the presence of ADHD, exist (Steer, 2010). This may result in incorrect diagnosis since clinical judgement may vary per specialist resulting in different interpretations of tests or symptoms. Moreover, ADHD is often associated with other (behavioural) problems, which can complicate the assessment process by the professional. In addition, other disorders – with similar ADHD symptoms – can cause behaviour problems, too (Steer, 2010).

However, some have suggested that ADHD is diagnosed too fast and that ADHD is over diagnosed (DeGrandpre, 1999). Furthermore Dijk et al. (2008) showed that the number of children with ADHD and ADHD medication has increased significantly in the last few years. However, the opposite is promoted in a recent article by Pereira, Kooij and Buitelaar (2011) that over diagnosis is not the case. Pereira et al. argued that the increased number of diagnosis is associated with increased knowledge and treatments. Due to this development, also predominantly under diagnosed groups, like girls, ethnic minorities and adults, ADHD may be recognized and treated.

Nevertheless, many children have, to some extent – especially when they are young – problems with self-control. The question might be what the difference is between normal and difficult behaviour (Steer, 2010). The DSM-IV is used as a manual and as a tool for professionals for the diagnosis of mental disorders, like ADHD. However, different psychologists have claimed that

too much 'normal human behavior' is seen as a disorder, which may result in over diagnosis. Social aspects are not always considered, which has resulted in a lowering of the threshold for existing disorders and added new conditions (Otten-Pablos, 2011c). Controversies about ADHD also rise due to different articles and documentaries. The high media attention sometimes gives rise to unsubstantiated ideas and arguments about ADHD (Roobol, 2009).

In sum, ADHD does not resolve with puberty for most of the children, and, in addition, symptoms occur differently during various periods in life. In other words, children, adolescents and adults have all different lifestyles. Symptoms of ADHD manifest themselves differently throughout the lifecycle. To overcome problems and misunderstandings in their environment, early recognition, assessment (Baumgaertel et al., 1996) and treatment of symptoms of ADHD are essential to an effective long-term management of the disorder (Wigal and Wigal 2007). Different issues may result in both over- and under diagnosis (Abikoff et al., 1993; Schacher et al., 1986) and may create controversies about the disorder in society.

Due to these controversies, the increase in the number of diagnosed cases ADHD and increasing waiting lists, there is demand and need for an appropriate diagnostic process and clarity in the classification of children and adolescents with a presumption of ADHD.

1.6 ADHD PATIENTS IN THE NETHERLANDS

1.6.1 HEALTH CARE UTILIZATION

Children and youths with mental disorders are mainly treated in youth mental health care (Ploegmakers et al., 2005). Youth mental health care includes approximately 25% of all care. Other sectors in youth mental health care are youth care and judicial youth care. Youth mental health care includes (ambulant) youth departments of youth mental health institutions, the child- and youth psychiatrist, and (outpatient) clinics for child- and youth psychiatry. In more than two third of the registrations a specific diagnose is not defined in youth mental health care. For that reason is it not possible to provide information about specific care utility in ADHD patients. Youth mental health care is in general ambulant in nature. In 2003, 96% of the children and youths in mental health care received ambulant care (Ploegmakers et al., 2005). Since ADHD often goes along with characteristics of behavior disorders, children with ADHD often reside in an institution for juvenile offenders (Meijer et al., 2008).

According to the European guideline the determination of ADHD symptoms is the responsibility of the General Practitioner (GP) (Taylor et al., 2004). If ADHD is diagnosed, the child or youth should be referred to specialist care, like youth mental health care. In youth mental health care a

complete diagnostic research should be conducted and a treatment plan should be established. In formal terms a GP should not treat children with ADHD without an advice of a specialized practitioner. In addition, ADHD medication may only be prescribed after a diagnostic research by a specialist (Meijer et al., 2008). However, in practice children and youths with ADHD are often treated with medication by the GP, without advice of a specialist (Klasen & Verhulst, 2005).

So, on the one hand many ADHD patients seem not to be treated by the most adequate practitioner. On the other hand, it seems that many youths with emotional problems and behavior problems (including ADHD) are not seen by the GP or specialist. Research has shown that only 13% of the children and 15% of the youths with emotional or behavior problems have had contact with a GP (Zwaanswijk, 2005). Moreover, only 16% of the children with clinical relevant emotional or behavior problems in the research have used mental health facilities (Meijer et al., 2008).

In general, all referrals of youths to specialized care should be via the GP. However, in 2003 only 43% of the referrals of youth mental health care were through the GP (Van 't Land et al., 2005). Next to GPs, practitioners at school (like school doctors, school psychologists and school support facilities) seem to be important referrers to mental health institutions (Zwaanswijk, 2005).

1.6.2 HEALTH CARE COST

The cost for mental health care (excluding mental disability) in children and youths between 0 to 19 years old is 687 million Euros per year (Poos et al., 2008). This number is 4.9% of the total health care cost for mental disorders and 6.5% of the total cost of care for children and youths between 0 to 19 years in the Netherlands. Respectively 62% of the cost for mental health care is for boys and respectively 38% of the care is for girls (Meijer et al., 2008).

In general, most of the total care cost is for children and youths between 0 to 19 years of age with mental disorders. About 57% is for mental health care and 21% is for social care (Meijer, et al. 2008). In addition, it seems that costs for mental health disorders within the age group of 0 to 19 years increased with age. Respectively 37% of the total costs are caused by youths between 15 to 19 years, 24% in children between 10 to 14 years, 21% in 5 to 9 years, and 17% in the age group 0 to 4 year (Meijer et al., 2008).

A recent research calculated the annual cost of ADHD based on four cost items, namely: medication, education and support, out home placement and absenteeism of parents. The costs were calculated based on a group of 40,000 children with ADHD, who needed care and treatment in a period of 10 years. Based on the research the average costs of children with

ADHD is estimated at 14,000 euro per child per year in the Netherlands. The annual costs are 546 million Euros and the costs per 10 year are 5.6 billion Euros (Waelen & Boer, 2011). Based on these figures it may be noticed that ADHD has a major financial impact on society (Waelen & Boer, 2011). However, the economic costs of untreated or unrecognized ADHD may even be higher to society (Kooij, 2004).

1.7 DEVELOPMENT OF ADHD CLINICS

The standard intake and treatment for children and youths with a presumption of a mental disorder starts with a referral of the GP or Bureau Jeugdzorg (Youth Healthcare Office) to a youth mental health institution. Of all registrations, ADHD patients are a large proportion in many institutions. However, parents often have to wait for several months before their child is seen by a medical specialist, is diagnosed and receives treatment advice and treatment (Groot, 2009).

There seems to be a discrepancy between the moment of registration and the provision of care (Groot, 2009). Some health care institutions do not comply with the standard regulations for the maximum attainable waiting time, which is defined by health care providers and health insurance companies (Busch, 2005). One initiative to reduce the long waiting lists is the introduction of the national project 'Versnelling in de Jeugdzorg' (acceleration in Youth Care). The project is based on the so-called 'Breakthrough' method, which is developed by the American Institute for Healthcare Improvement (Diephuis et al., 2009). The Breakthrough method implies that good examples of institutions by different teams will be implemented in other institutions (Psy, 2011). In youth care there are several examples of good methods, which have resulted in a reduction of waiting time and turn-around (Hollander, 2004). The objective of the project was a better, faster and more efficient care for patients (Psy, 2011).

One element of 'Versnelling in de Jeugdzorg' is the implementation of one-day diagnosis for children with a presumption of ADHD (Schouten et al., 2007). The multidisciplinary guideline for ADHD states that several areas should be questioned (Trimbos-instituut, 2005). According to the guideline it is important to define the context of the child's environment. This information is used to create a clear overview of the child's functioning (Groot 2009). Problems may be located in different levels; therefore it is essential to assess the child in a somatic, individual, social and on society level (Onderwater et al., 2005).

The development of ADHD clinics is described as a client friendly answer to the long waiting lists and waiting times in the youth mental health care (Peeters, 2009). It is the intention of the ADHD

clinics to create a manner to include all the aspects of the diagnosis in the shortest possible process, covering all relevant elements for the diagnosis. The participated institutions in the above described project have shown that it is possible to organize diagnosing ADHD in a more efficient manner (Peeters, 2009).

However, not much consistency between these specific ADHD clinics can be noticed since they all apply their own instruments, practitioners and techniques to achieve their goal. In other words, one clear definition does not exist (yet) since some organizations indicate their ADHD ADHD clinic as an one hour consult (Bronovomagazine, 2008; St. Elisabeth ziekenhuis, 2012), a specialized ADHD center for diagnosis and treatment (The Busy People, 2012) or an academic clinic for ADHD (InGeest, 2010). Overall, if an ADHD clinic may be defined, it may be described as an institution with a specific program or focus on the diagnosis and treatment of ADHD. This can be an independent clinic, a clinic in a hospital or an applied program in a mental health institution. To create more consistency in this research, the here for described definition of an ADHD-clinic will be applied.

1.8 FUTURE PERSPECTIVE OF ADHD CLINICS

1.8.1 CHANGES IN THE HEALTH CARE SYSTEM

Recent years several adaptations in the health care system are introduced and implemented (Rijksoverheid-zorgverzekering, 2012). In 2005, the introduction of the Diagnosis Treatment Combinations (DBC) took place, which is implemented, in Dutch hospitals by the Government to create more transparency over price and performance in health care. Further, it was the intention to make patients more aware of health care cost. The DBC systematic provides insight in cost of treatments and the use of care. As a result, health care institutions may work more efficiently and deliver good care for a reasonable price. The DBC systematic is the basis for declarations of provided care and offers insight in the actual use of care. DBCs are for that reason used for negotiation between health care providers and health insurers over the offered and provided care (DBC – onderhoud, 2012).

In 2008, the DBC-systematic was implemented in second line mental health care. The implementation was the result of a transfer from the AWBZ (The Exceptional Medical Expenses Act) to the ZVW (Health Insurance Law). The Government intended to stimulate the health care market in mental health care (see chapter 3.2.1). In other words, also mental health care providers must negotiate with health insurers about price and quality (DBC – onderhoud, 2012).

Recently a change has been focusing on first and second line mental health care. First line health

care is able to treat general health problems and is, in addition, much cheaper than hospital care. The Government stimulates, for that reason, that people are treated in first line (Schippers, 2011). Treatments for mental problems are always reimbursed via the health insurance or via the AWBZ. Patients must always pay a contribution (cost sharing) for each treatment, both in first and in second line. However, there are some exceptions. One of the exceptions is that patients younger than 18 year do not have to pay a contribution (Rijksoverheid–zorgverzekering, 2012). In this way financial incentives are created for patients with mild problems to choose for a cheaper alternative to reduce growing costs (Schippers, 2011). The changes in the contribution in mental care are summarized in *table 1.3*.

Changes in compensation in first and second line in mental health care		
Compensation	Until December 31, 2011	From January 1, 2012
First line psychology*	-First 8 sessions are reimbursed. -Per next session people pay a contribution of € 10.	- First 5 sessions are reimbursed from the basic benefit package from the health insurer. - Own contribution of € 20 per consult. - Own contribution for E-health of €50.
Second line mental health care. Treatment by health psychologist, clinical psychologist, clinical neuropsychologist, psychotherapist, psychiatrist.*	Compensation for more complex mental problems, like ADHD, depression or anxiety. - Compensation of the treatments, if referred by a first line professional. - Own contribution for some specific treatments.	- Compensation for the second line treatment from the basic benefit package, but with own contribution. - Own contribution of €100 per year for a treatment (DBC) of < 100 minutes. - Own contribution of €200 per year for a treatment 100 > minutes. - Own contribution for treatment in second line mental health care per calendar year is never more than €200.
Table 1.3 Changes in compensation first and second line (Ministerie van VWS, 2011) *Patients younger than 18 years of age, do not have to pay own contribution		

These changes may also have an impact on the organization of ADHD clinics. Before the adjustments, the largest part of the total expenditures in children and youths in mental health care from 0 to 19 year was financed via the AWBZ (Meijer, 2010). Since the role of the ZVW has become larger, health insurers run more risk over their insured. But some differences occur between types of costs. Health insurance companies receive 100% compensation for the cost made by insured younger than 18 for mental health care, like a psychiatrist. However, the health insurer does not receive full compensation afterwards for all made cost for somatic research, like a pediatrician. Moreover, costs of ADHD medication are not compensated which means that the health insurance company is fully risk bearing for these cost (Ministerie van VWS, 2011).

Next, all youth health care facilities will be included in the WMO (Social Support Act) before 2016. The underlying thought of this decentralization is that more customized care for children and youths may be provided in the communities (Veldhuijzen van Zanten-Hyllner, 2011). The Centres for Youth and Family (CJG) will play an important role in this organization for health care (OOGG foundation, 2011). The strength of the local centres is the low threshold for parents and caregivers. The local centres should offer information and advice or refer to other places where people can find answers to their questions (Dijk & Prinsen, 2009). However, the transfer from the youth mental health care to the municipalities has some opponents. Mental health institutions, patients and psychiatrists turn against the plan of the Government to move youth mental health care to municipalities. They argue that the rights of this new type of organization will diminish the freedom of choice for patients. However, it is unclear what the consequences will be for these organizations and specialists when youth mental health care is decentralized to municipalities (Psy, 2011).

Another effect is the change in the personal budget (PGB). The personal budget is an extra budget for parents of children with a mental or behavior disorder to purchase care, which may be necessary for the functioning of the child, like support or guidance. However, guidance and support will be removed from the AWBZ and becomes the responsibility of the municipalities, based on the WMO (Rijksoverheid, 2011). In other words, only children who stay in a care institution can still make use of the PGB while the majority of this patient group is only using outpatient care (Veldhuijzen van Zanten-Hyllner, 2011). This means that in general ADHD patients have less to spend, and reduced choice for practitioners and available treatments.

1.8.2 QUALITY CRITERIA

Further, intention in the changes in the health care system is to create more transparency in care. However, it seems that mental health care is in general not very transparent (Robben & Tietema, 2005) and it is therefore difficult to measure quality and efficiency of provided care. Recently, health insurers were fully compensated afterwards for all delivered mental health care. However, since the changes in the health care system the incentive for competition in mental health care between health insurers has increased due to the implementation of DBC systematic and the transfer from parts of mental health care to the ZVW. The result is stricter requirements about quality and efficiency of mental health care for providers and mental health.

Currently, health insurance companies must be more critical about the purchase of mental health care since transparency about the most efficient price/quality ratio is became more important for clients in the health care market. The emphasis on efficiency and quality by insurers is therefore increased. It may be known that health insurance companies maintain

specific criteria for good care in hospitals already. In general these are criteria based on scientific research (guidelines) and conversations with interest groups, like patient organizations. Health insurers are able to define their own quality criteria to strengthen their competitive position in the market. In this way it is possible to distinguish from other insurers. Moreover, they can make contractual arrangements about price, volume, quality and the organisation of care with care providers (Dorresteijn, 2011).

To develop a well running ADHD clinic, a clinic should act conform the criteria of health care insurance companies since they probably otherwise will not be contracted. The set criteria can be seen as constraints for the diagnosis and treatment of ADHD in these clinics. However, no specific data about quality criteria is known concerning ADHD clinics. It is already mentioned that health insurers include scientific research and the input of patient organizations into their quality criteria. At the moment health insurers are doing research about the possible applied criteria to compare the quality of treatments in mental health care. Hospital care has maintained quality criteria for several years already, so health insurers are using hospitals as a reference. It seems that multidisciplinary teams enhance the quality, and institutions whose work with interim evaluations and supervision generate better results (Psy, 2012). For that reason, it may be essential for ADHD clinics to include at least the recommendations of the guideline in the diagnosis and treatment in order to function up to standard.

1.9 AIM OF THE STUDY

In the previous paragraphs a description is provided of occasion of the development of ADHD clinics and the (planned) changes in the health care system. The Netherlands has several ADHD clinics; but there is no overview of the general characteristics of these treatment centers. The organization of youth health care will change in the near future. However, there is a lack of information on how this change will affect the development of the ADHD clinics. So, the aim of this study is to provide an overview of the characteristics of ADHD clinics in terms of type of organization, involved practitioners, the patient population and the treatment process. The future perspective of ADHD clinics will be evaluated based on the current changes in the health care system. However, these changes may have a different impact on ADHD clinics and their future. To provide more insight into the strengths, weaknesses, opportunities and threats of ADHD clinics in the Netherlands, a so-called SWOT analysis is carried out. This analysis can be used by organizations of institutions to create an overview of the elements of these four components that may be relevant for the future perspective of their ADHD clinic.

1.10 RESEARCH QUESTION AND SUB QUESTIONS

According to the previously described study, the following research question and related sub questions can be formulated.

Research question

What are the characteristics of the ADHD clinics in the Netherlands in term of type of organization, practitioners, treatment, patient population and treatment process and what is their future perspective in view of the changes in the organization of mental health care?

Sub questions

1. *What are the characteristics of ADHD clinics?*
2. *How is reimbursement of health care (with regard to ADHD patients) regulated in the Netherlands?*
3. *How will contemporary policy developments concerning health care reimbursement affect the ADHD clinics and their patients?*
4. *What advice may be given to the Dutch government concerning their policy on ADHD clinics?*
5. *What may be the strengths, weaknesses, opportunities and treats of ADHD clinics?*

1.11 CONTENT OF THE THESIS

In the next chapter, the Methodology describes how the research is performed. In chapter three an overview of the theoretical framework is provided, which contains all relevant background information for answering the research question. In the fourth chapter, the results of the study are described. In the fifth chapter the conclusions, based on the results are summarized. Finally, in the last chapter, the discussion and recommendations are described in more detail.

2. RESEARCH DESIGN AND METHODOLOGY

2.1 INTRODUCTION

The relevant aspects in this research are based on the objective of this research: the potential differences between the participating ADHD clinics and their future perspective based on the characteristics. Since no clear definition of an ADHD clinic is defined, the characteristics are based on literature and several conversations with experts, like employees of Eli Lilly and Company, child- and youth psychiatrists, pediatricians, the supervisor of the Erasmus University and a consultant. The formulated characteristics of the ADHD clinics were the starting point for the interview questions and are based on the following three aspects: the organization, the ADHD clinic and the applied guideline and/or protocol. In a later stage, after the interviews and during studying literature, it became clear that the distinction between the aspects was inadequately specified to cover the research question. Based on the obtained information it was decided to choose for the following four sections: the organization, the practitioners, the patient population, and the treatment process.

In order to answer the research question, information was obtained by means of a literature search and interviews with professionals, involved employees in ADHD clinics and a health care purchaser. In this chapter it is explained how the research was conducted. First, the research design is described, which includes the different research methods. The study sample is the second part of this chapter and includes more details about the population, the sample, and the sample size. Third, more insight is provided about the verification of the interviews. Finally, the application of the SWOT analysis is explained in more detail.

2.2 RESEARCH DESIGN

The research can be seen as a descriptive research (Creswell, 2003), which focuses on the characteristics of the organization, involved practitioners, patient population and the treatment process of the ADHD clinics. Another point of interest is the future perspective of ADHD clinics, based on the current developments and changes in mental health care in the Netherlands. To investigate the characteristics and the future perspective of the ADHD clinics, two different research methods are applied.

2.2.1 RESEARCH METHODS

Due to the described aspects of the research design a qualitative research (Creswell, 2003) has been chosen combined with a literature search. The literature search focuses on the current

developments in mental health care and their relevance to the future impact on the ADHD clinics. The qualitative search consists of interviews with employees of participated ADHD clinics. Next, these two methods will be described in more detail.

2.2.1.1 LITERATURE SEARCH

The literature search consists of two parts. The first part focuses on general information about ADHD, ADHD clinics, patient population, the health care system, changes in the health care system, organization types, recommendations for treatment and diagnostic and available guidelines. The other part includes a market research to determine the number and location of ADHD clinics in the Netherland (see 3.3 *Study Sample*). Based on these figures, ADHD clinics were contacted to participate in the research.

Relevant literature was searched in Pub med, via grey literature (Google), and in recently published magazines and articles. The focus was both on English and Dutch literature.

Applied search terms in Pub med were:

- ADHD, Attention Deficit Hyperactivity Disorder, child, children, adolescents, prevalence, incidence, the Netherlands, guidelines, protocols, treatment, therapies ADHD, ADHD clinic.

Applied search terms in Google were:

- English: ADHD, Attention Deficit/Hyperactivity Disorder, child, children, adolescents, prevalence ADHD, incidence ADHD, the Netherlands, guidelines, protocols, treatments ADHD, therapies ADHD, psychiatry, ADHD clinics, mental health care, SWOT analysis.
- Dutch: Kinder-en Jeugdpsychiatrie, ADHD, incidentie ADHD, prevalentie ADHD, Nederland, behandelmethodes/behandelingen ADHD, protocollen, richtlijnen ADHD, multidisciplinaire richtlijn ADHD, zorgprogramma ADHD, ADHD poli, ADHD kliniek, GGZ, gezondheidszorg, DBC, DOT, GGZ DBC, PGB, WMO, AWBZ, ZVW, zorg verzekering, zorg verzekeraar, SWOT analyse.

The literature search was conducted using the snowball method. This means that referred literature in relevant articles are applied in the research.

2.2.1.2 INTERVIEWS

The second element of the research includes interviews with employees of the participating institutions. Several institutions were approached to obtain participants. Finally, ten persons were willing to participate in the research. The interviews were used to obtain more information about the organization, the maintained program for ADHD in the institutions, and the applied

guideline/protocol. Several interview methods are possible. However, in this research a semi-structured questionnaire was chosen. A semi-structured questionnaire is a mix of closed and open-end questions with fixed subjects (Creswell, 2003). In total, 37 questions were asked and these are divided into three subjects (*Appendix 3*). The first part asks for some general information to obtain insight in the organization. Example: What was the reason for the establishment of the ADHD clinic and the involved practitioners? The second part focuses on the treatment process of the ADHD clinic gaining information about the treatment process, waiting times, number of intakes, and the patient population. The last part includes questions about the applied guideline and/or protocol in the treatment process.

The duration of each interview was about one hour. During this conversation, the three subjects were discussed. The interviews were recorded. All interviews were processed in a word file wherein the obtained information was organized. Furthermore, to provide a clear overview of the second part of each interview, a flow sheet from each treatment process was created. The flow sheet includes all steps that patients make during the treatment process.

To verify the elaborated records, the flow sheets, and to complete the missing questions the interviewees were contacted for a second time. Each participant received a letter and an email with a detailed file of the elaboration of the interview, including some missing and relevant questions. The interviewee was asked to correct and, if needed, add information to exclude potential miscommunications. Furthermore, participants were contacted in the final stage about their ideas and thoughts about the future perspective of ADHD clinics. For this part of the study a care purchaser was also contacted by phone to obtain information of health insurance companies about the effects of the current changes in the health care system.

2.3 STUDY SAMPLE

2.3.1 POPULATION

The study population is based on institutions with a specific focus on children and adolescents with (a presumption of) ADHD. In the introduction chapter it is stated that in the Netherlands several initiatives to improve ADHD diagnostics and treatment have developed in recent years. The exact number of specific ADHD clinics seems to be over 10 in 2009 (Peeters, 2009). To define the population for this research, a market research was done through an Internet search and telephone contact. At first the focus on the market research was based on institutions with a one-day clinic. However, during the research it became clear that a broad variation of ADHD clinics exists, something which is already quoted in chapter 1. It seems that some clinics have a

one-day clinic, while others only have a specific program for ADHD patients.

An overview of the – so far – founded ADHD clinics is provided in *figure 2.1*. As many as possible clinics are included in this figure, however, it might be possible that some ADHD clinics are not shown. Based on this study it may be concluded that over 50 ADHD clinics have been set up in the Netherlands in recent years. A list of the founded ADHD clinics is added in *Appendix 4*.



Figure 2.1 Overview ADHD clinics
In red: participating ADHD clinics

2.3.2. SAMPLE AND SAMPLE SIZE

The selection of participants was performed during the market research. Different institutions were contacted by email or telephone with the question whether they wanted to participate in the research. It was attempted to create geographical spread of the participants as much as possible. However, the sample was dependent on the willingness of the approached people in the institutions. Focus during the approach was primarily based on psychiatrists and pediatricians. But, finally, also other employees were involved since physicians had often no time to participate in the research. In total ten different employees of ten different institutions were willing to participate in the research. In *table 2.1*, a summary is showed of some features of the interviewed. It can be noticed that in total ten different institutions have participated in the research. The function/profession and gender of the interviewed are also shown in the table.

The type of clinic is initiated with a specific color. **Red** represents hospitals, **blue** mental health institutions (GGZ) and **green** independent treatment centers (ZBC). In the end, the participants will receive a copy of the final report by mail.

Number	Institution	Function/profession	Gender
1	A	Nurse specialized in ADHD	Female
2	B	Pediatrician	Male
3	C	Pediatrician	Male
4	D	Pediatrician	Male
5	E	Psychotherapist	Male
6	F	Treatment manager	Male
7	G	Pediatrician	Male
8	H	Team leader of the ADHD clinic	Female
9	I	System therapist	Male
10	J	Physician society & Health	Female

Table 2.1. Function and gender of interviewed per ADHD Clinic

2.4 SWOT ANALYSIS

The SWOT analysis is a method, which may be used as an evaluation tool to evaluate or define strengths, weaknesses, opportunities and threats of an organization. This method focuses on the purpose of the organization and on the identification of internal and external factors that may have a positive or negative impact on the realization of the goal (Scienceprogress, 2012).

This research is focused on generating more insight in the future perspective of ADHD clinics. ADHD clinics are intended to create a manner to include all the aspects of the diagnosis in the shortest possible process, covering all relevant elements for the diagnosis. However, the changes in the health care system have different effects on ADHD clinics and their future perspectives.

The outcome of the interviews will be used to create an overview of strengths and weaknesses of the four characteristics. Further, the opportunities and threats of ADHD clinics are based on the changes in the health care system. The assessment of the internal strengths and weaknesses and the external opportunities and threats provide insight in the future perspective and feasibility of ADHD clinics. The strengths and weaknesses are the characteristics of the organization, and are explicitly based on internal elements. The opportunities and threats are the developments, occurrences and influences to which the organization is subjected. The two

aspects in this case are explicitly based on external elements.

First, the strengths of an organization are the elements that might be helpful to realize the objective. Secondly, the weaknesses of the organization may have a negative effect on the goal. Negative elements should be improved if the organization wants to succeed. Thirdly, the opportunities are based on the aspects which could be improved by the ADHD clinics. Finally, threats may be potential blockades that may have a negative influence from the (health care) market on the organization (Scienceprogress, 2012). A schematic overview of the four aspects is shown in *table 3.2*.

		Goal of the organization	
		Helpful	Harmful
Organization	Internal	Strengths	Weaknesses
	External	Opportunities	Threats
<i>Table 3.2 - Schematic overview of the SWOT analysis</i>			

Via the SWOT analysis, an overview of these four aspects for ADHD clinics will be developed.

2.5 OVERVIEW

In the next chapters, the obtained data will be described in more detail. First, the relevant literature based on the research question will be revealed. Next, the results of the interviews, illustrated in tables, include data about the organization, participants, patient population and treatment processes.

3. THEORETICAL FRAMEWORK

3.1 INTRODUCTION

In this chapter, the relevant aspects of the research question are described in more detail. The first element provides more insight in the organizational structure of the ADHD clinic. The description is based on what types of organizations exist, possible forms of funding, explanation of the multidisciplinary guideline and protocols. The second element provides information about the involved practitioners in the ADHD clinics. The third element is based on the patient population of the ADHD clinics, which includes insight in: the size, number of new registrations per year, type of patient and the target group. The fourth element provides more information about the process in the ADHD clinic, based on the content of the intake and the different offered treatments. Each section will be explained and illustrated by relevancy for the research in this chapter. Moreover, it will be considered to what extent the clinics act conform the multidisciplinary guideline for the diagnostic and treatment of ADHD in children and youths (Trimbos-instituut, 2005).

3.2 ORGANIZATION

The organization section consists of different elements, which may provide insight in the differences between the ADHD clinics and their future perspectives. In this paragraph the relevant items are described in more detail. First, the organization type is described, followed by more information about the guidelines and protocols that might be applied in the ADHD clinics.

3.2.1 ORGANIZATION TYPE

Chapter 1 describes that due to increasing waiting lists, several initiatives have been taken by different institutions (1.7). These initiatives might be conceived by either mental health institutions, hospitals or independent treatment centers (ZBC) (Psy, 2008). The difference is that each type of organization is funded differently. Since 2005, all hospitals and ZBCs apply the so-called Diagnose Treatment Combinations (DBC), which includes all cost of the provided care. This means that each defined DBC has a specific and fixed price (NVZ, 2011). Since 2012 health care insurers are responsible for 70% of the health care purchasing, i.e. free prices (Aartsen, 2011). Health care insurers have a care budget, which they may divide over hospitals and ZBCs, which means that these institutions may grow, or not (Aartsen, 2011). Health care insurers therefore want more insight in the possible risks. Hospitals and ZBCs want, on the other hand, insight in the running DBCs, instead of an ex post calculation. The system makes it possible to create more transparency and that health insurers may select only the institutions with the best

performance and care products (Aartsen 2011). However, the need for a more uniform and less complex declaration system was increasing and for that reason the DBC system has been developed to DOT and implemented in 2012. In other words, more than 30,000 DBCs have been replaced by 4,400 improved DBC care products (Nederlandse Zorgautoriteit, 2011).

Mental health institutions, on the other hand, are financed from several sources: AWBZ, ZVW, WMO and by The Ministry of Justice. Furthermore, DBCs and Care Burden Packages (ZZP) are introduced for the curative mental health care in 2008 (Slabbers, 2008) and different changes have been implemented in recent years. Health care insurers became responsible for the purchasing and payment of curative mental health care due to the shift from AWBZ to the ZVW. This means that mental health care providers must negotiate with health insurers about the provided care. As a result, health insurers control the care purchasing process and have generated greater responsibility in the new system. The problem may be that health insurers have insufficient insight in the quality of care, though. Collection of data about the quality and efficiency of care is for that reason very important (Sambeek, 2009).

Another change is based on the fact that second line care, covered by the ZVW, is financed through DBCs on a systematic basis, while first line care is financed based on the number of transactions. The financing of all intramural medical mental health care is based on ZZPs.

Independently from the previous is the WMO. Municipalities negotiate with health care providers about the financed amounts (Slabbers, 2008). However, it is already mentioned that health care insurers are only fully compensated afterwards for mental health cost for insured younger than 18 years since 2012. Hospitals and ZBCs may result therefore in increased risk for health care insurers.

3.2.2 APPLICATION OF THE MULTIDISCIPLINARY GUIDELINE AND/OR PROTOCOL

Guidelines and protocols have been systematically developed to assist practitioners and patient decisions about appropriate health care in specific circumstances (Bukstein, 2010). They are established for health care providers to be knowledgeable about the profession and to create uniformity in daily practice. They contain arrangements, which are made within the profession and are referring to evidence based professional activities (Franx et al., 2002)

Guidelines and protocols both have another function. In general, “guidelines are systematically established statements or recommendations to assist the health care provider and patient in making the most appropriate and suitable decision based on a clinical problem” (Grol & Wensing, 2001). Guidelines can be seen as important documents, but only if they are used by

self-judging professionals. In other words, guidelines are both based on decision making, as on decisions focused on guidance and diagnosis of professionals. A protocol, on the other hand, may be seen as “an instruction for professionals for the performing of a diagnostic or therapeutic procedure. It is a description of subsequent steps in a diagnostic process, guidance or a treatment” (Tiemens et al., 2010)

Multidisciplinary guideline

The Multidisciplinary Guideline for ADHD in children and youths is established due to advice about the diagnosis and treatment of ADHD in children and youth of the Dutch Health Council (2000) to the Minister of Health (VWS). The guideline is developed according to the principles of the *Landelijke Stuurgroep Multidisciplinaire richtlijnontwikkeling* in mental health care and the *Commissie Clientenparticipatie* and established by a multidisciplinary group of people (Trimbos-instituut 2005). The methodological and organizational support and guidance are provided by the *CBO* (quality institution in health care) and the *Trimbos-instituut* (Trimbos-instituut, 2005). The guideline is able to describe the coherence between different professionals and the incremental steps in the care pathway whereby the patient is central. The multidisciplinary guideline provides several evidence-based recommendations about the elements in the process of identification, diagnosis, classification and treatment of ADHD in children and adolescents. However, the applied literature and researches date from before 2005 (publication year). It might be clear that after 2005 more research about ADHD has been conducted with new results.

Kenniscentrum (Knowledge Centre)

After the publication of the guideline, more research about the diagnostic process and attainable treatments is done. These studies are not included in the current guideline; however, they are published in magazines and/or websites so health care professionals can apply new research in practice. An important foundation is the Dutch Knowledge Centre for child and adolescent psychiatry, known as “Kenniscentrum”. The centre offers information for professionals, adolescents, and parents. Information for professionals includes recommendations about possible diagnostics and treatments, as well as more general information about protocol treatment forms. Information and recommendations are based on formulated criteria of evidence-based practice, evidence-based medicine and clinical experience (www.kenniscentrum.nl). Many health care professionals use the website of this foundation for the latest developments on ADHD diagnosis and treatment.

Protocols

The guideline for ADHD should be seen as a multidisciplinary basic instrument. The guideline can offer starting points for local protocols because it provides recommendations for many

professionals and in different situations. It describes the best attainable care; however, the final decision is the responsibility of the individual professional. If justified, deviation should therefore be possible since the guideline is designed as a tool for professionals (Trimbos-instituut, 2005).

In the Netherlands, several so-called basic programs for specific disorders are developed. A basic program contains the main elements, which are necessary to establish a health care program in a specific region and may be comparable with a protocol. In a basic program, the content of a specific care program is described for a specific defined target group, based on recent scientific knowledge and evidence (Vink & Wamel, 2007). In 2007, a basic program for children and adolescents with ADHD was provided. The basic program gives a description of the possible content of an ADHD program for children and adolescents (Vink & Wamel 2007). The program distinguishes four phases, which include different steps. The phases are: 1. The registration or/and intake; 2. Indication; 3. Care allocation and establishment of the treatment plan; 4. Monitoring and adjusting the treatment plan (Vink & Wamel 2007).

3.3 PRACTITIONERS

In the ADHD clinics, different health care practitioners may be active. The type of specialization and the number of practitioners may be different due to the type of organization. In the multidisciplinary guideline for ADHD some considerations described are based on the experiences of practitioners in care institutions which are involved in the registration and diagnosis of ADHD. However, the considerations are no recommendations since no evidence-based information is available about this subject (Trimbos-instituut, 2005).

It is indicated that practitioners in (youth) health care often are important in the registration of characteristics related to ADHD. They should ensure that a child ends in the correct care path. This registration is essential to create access to further health care. A correct alignment among practitioner, parents and school is hereby of great importance (Trimbos-instituut, 2005).

Suspected ADHD related problematic behaviour will often be signalled by parents/guardians and teachers. The referral to diagnostic will often be done by internal supervisors, physicians working in youth health care, GPs, paediatricians, paediatric neurologists, Bureau Jeugdzorg or the Education Advice Facility.

The diagnosis should be made by mental health psychologists and/or child and youth psychiatrists, often in a multidisciplinary context and with a physician who can do a somatic assessment. The involved practitioners in the diagnosis of ADHD must be qualified based on

knowledge and experience as described in the competition matrix (Trimbos-instituut, 2005). However, it should be taken into account that there is a shortage of child- and youth psychiatrists in the Netherlands: there are approximately 120 vacancies in this field of expertise. This means that many mental institutions fulfill the vacancies with basic physicians who are not specialized in children and youth problematic (Pennarts, 2008).

In mental health care, some quality requirements for the practitioners are established by the profession (Wet BIG). In general, only psychiatrists, clinical psychologists and independent psychotherapist's should be main practitioner in second line mental health care (Psy, 2009). However, in many institutions the so-called "extended arm construction" is applied. This means that specific tasks are delegated to other practitioners to make the provided care more efficient (Nieuwsuur, 2012).

3.4 PATIENT POPULATION

ADHD clinics focus on both children and adolescents. In the multidisciplinary guideline and the basic program for ADHD a specific target group is defined. This target group is derived from the DSM-IV criteria for ADHD in children and adolescents, which is verified for children from 4 to 16 years old. It is indicated that children younger than 5 years old are more difficult to diagnose. Moreover, the symptoms decrease with age (Trimbos-instituut, 2005).

The DSM-IV makes a distinction between three subtypes of ADHD. The subtypes are: the Combined Type, the Predominantly Inattentive Type and the Predominantly Hyperactive-Impulsive Type. An overview of the criteria of each subtype is provided in the *Appendix 1* (Trimbos-instituut, 2005).

3.5 TREATMENT PROCESS

The treatment process for children and adolescent with a presumption of ADHD includes several steps, which are described in the multidisciplinary guideline and the ADHD basic program. The ADHD basic program is based on the multidisciplinary guideline and is developed as a tool for institutions and organizations for diagnosis and treatment of ADHD. For that reason, these instruments have many similarities. The phases of the ADHD basic program are compared to the guideline. *Figure 3.1* provides an overview of the overlap between the guideline and the ADHD program. In *Figure 4.1* the different steps, related to the overlap are shown. In this section the four phases, related to the guideline, which are relevant for the ADHD clinics are described in more detail.

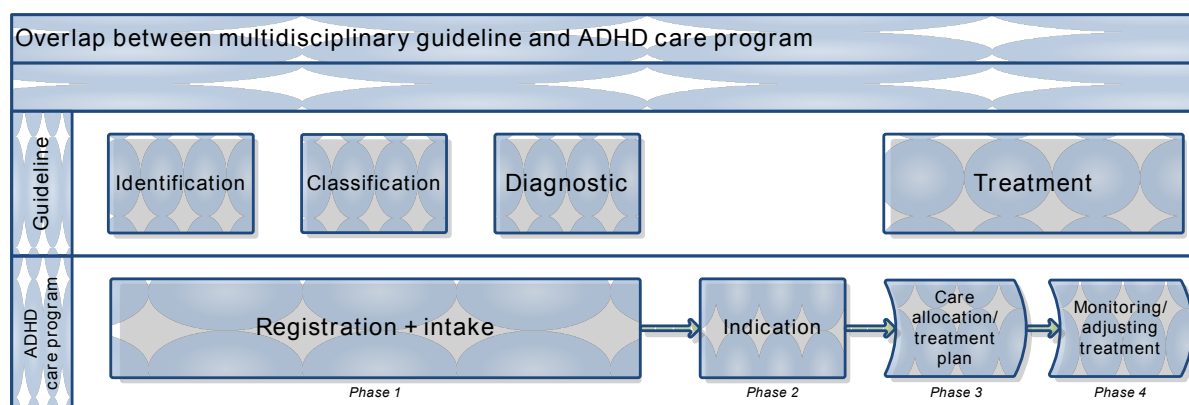


Figure 3.1

3.5.1 PHASE 1 REGISTRATION AND INTAKE

The first phase covers six different aspects, namely: the registration and recognition of complaints in the first line and in school, referral, application of screening equipment, diagnosis, classification of instruments, determination of severity and progression. It may be noticed that the identification, diagnostic and classification of the multidisciplinary guideline includes phase 1. These three items will be described next.

3.5.1.1 IDENTIFICATION

First, a presumption of ADHD in children by parents or teachers, often in consultation with the GP or school doctor, must occur. During the identification parents/guardians and teachers notice some striking characteristics in the behavior of the child and have the presumption that these characteristics differ from the normal, cognitive, social-emotional and/or didactic development (Trimbos-instituut, 2005).

If more diagnostic is necessary than solely the first line, the child is often referred to second line care. Registration for diagnostic in second line (e.g. an ADHD clinic) is primarily done by: Bureau Jeugdzorg, a physician, Youth Health Care, a GP, a first line psychologist, a teacher or a psychologist by Education Support Facility.

After registration, the health care provider will collect information about the client and the problems. Based on a conversation, and if needed, more diagnostic research (see 3.5.1.1), the practitioner may determine a provisional diagnosis. It is a possibility to apply existing questionnaires in the intake to determine or exclude ADHD (Vink & Wamel, 2007).

3.5.1.1 CLASSIFICATION

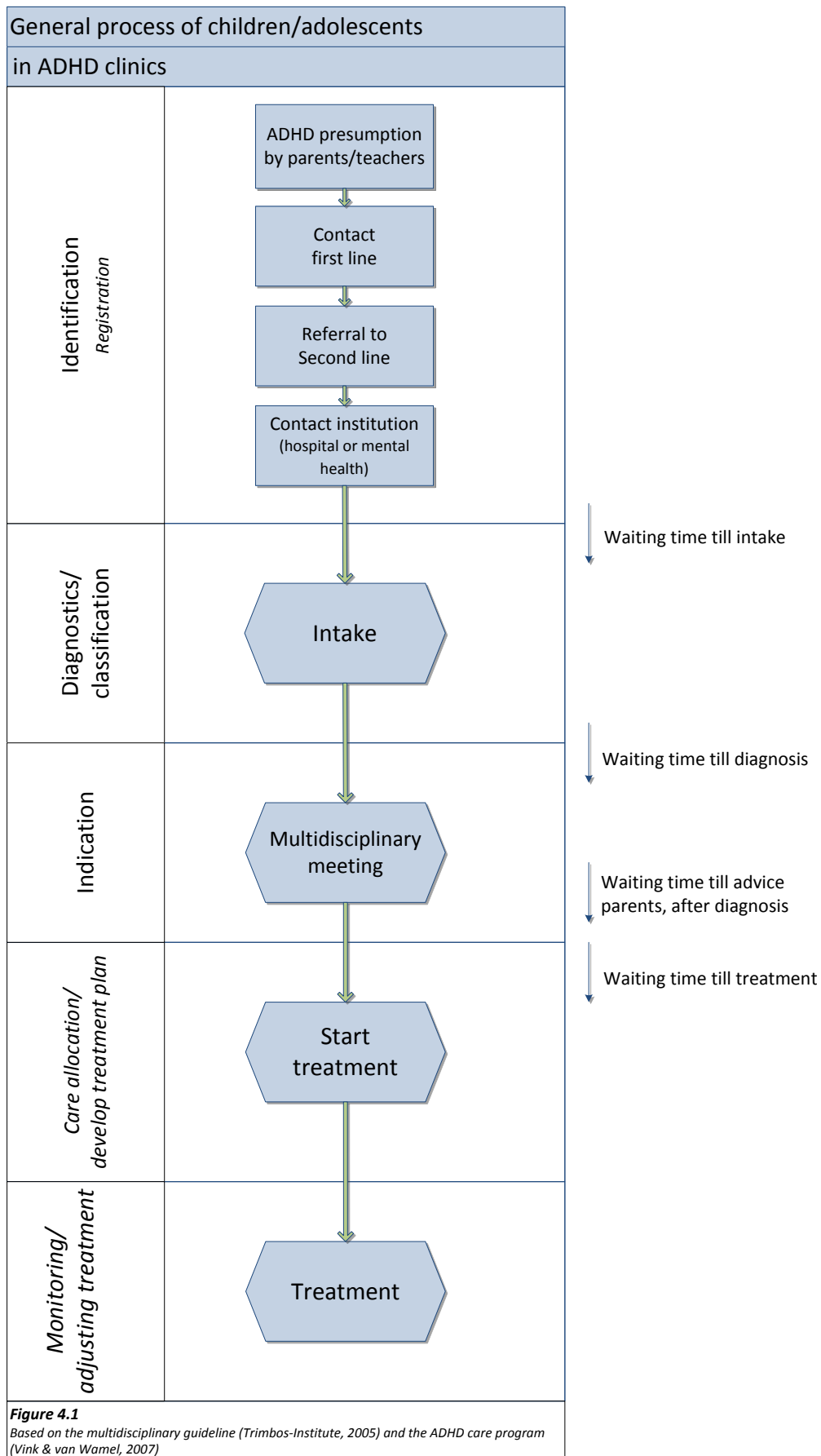
The problem description will be verified based on formal criteria of a classification system so the problem can be classified in ADHD solely, or in more categories (Trimbos-instituut, 2005). The first chapter describes that the DSM-IV classification is used for the diagnosis of ADHD. "The criteria require either six or more symptoms of inattention or six or more symptoms of hyperactivity-impulsivity, persisting for at least 6 months, inconsistent with developmental level, and producing significant impairment" (American Psychiatric Association, 2005). Significant impairment includes high risk for serious accidents, problems in relations and family functioning, and below average academic achievement (Lahey et al., 1994; Schachar et al. 1997). It is also required that evidence exists of the fact that some symptoms causing impairment before 7 years of age. In addition, impairment should be occurring in at least two settings (e.g. school and/or work and home) and symptoms cannot be related to another psychiatric disorder (American Psychiatric Association 2005). In addition, two-thirds of the children and adults with ADHD also experience other psychiatric disorders, such as behavioral disorders, dyslexia, depression, anxiety, addiction and sleep problems (Elia, Ambrosini & Berrettini 2008).

3.5.2.2 DIAGNOSTIC

It is recommended that the diagnosis is, in most cases, performed in a multidisciplinary context according to the described steps in the guideline. The involved practitioners should be qualified based on knowledge and experience as described in the competency matrix (Trimbos-instituut, 2005).

During the diagnostic process, all problem areas in the functioning of the child are investigated to create a clear overview of the problems. Essential features in the complaint inventory are: an interview with the parents, information from school, observation/interview with the child in a study setting, and screening instruments, like behavior questionnaires (Vink & Wamel 2007).

After the complaint inventory, several other elements should be discussed as part of the anamnesis. Possible elements are: problem inventory, somatic research if necessary, (neuro)-psychological research, didactic research and family diagnostic. The application of the elements for more diagnostic depends on individual problems and is not required (Trimbos-instituut, 2005).



3.5.3 PHASE 2 INDICATION

The indication takes place after the diagnosis. In this phase, the following aspects are relevant: determination of the severity of ADHD symptoms; the individual care demand is central and linked to the care offer; the care offer should exist of all treatments and activities which may be relevant for the child; the indication should be demand-orientated, objective and independent.

Further, it is important that the practitioner, who performs the indication, must have the right contractual skills and knowledge over the possibilities in the client system to lead/refer the client to the most suitable program elements (Vink & Wamel 2007).

3.5.4 PHASE 3 CARE ALLOCATION AND TREATMENT PLAN

In phase 3 a treatment plan is established and a health care provider or team is allocated. The provided care should connect to the abilities and desires of the child and patient and to the ideas of the health care provider. In the treatment plan the treatment goals, frequency of the treatment and the duration are indicated. If both provider and client are satisfied, a treatment agreement can be made (Vink & Wamel 2007).

In *table 3.1* an overview of all possible interventions is provided. This overview shows which evidence based interventions for which person may be performed. The interventions with an asterisk * in the first column are not discussed in the multidisciplinary guideline. The blue tones indicate the level of effectiveness. The darker the colour, the more the intervention is scientifically funded (Vink & Wamel 2007).

		Parents/family	Child	Teachers/ other caregivers
Crisis intervention				
1	Crisis intervention	X	X	-
Minimal intervention				
2	Psychoeducation	X	X	X
3	Self-care	X	X	-
4	Supportive and structured guidance	X	X	-
5	Pharmacotherapy	-	X	-
Psychosocial interventions				
6	Behaviour therapy			
A	Parental training	X	-	-
B	Teacher training			X
7	Cognitive behaviour therapy	X	X	-
8	Social skills training	X	X	-
9*	System therapy	X	X	-
10*	Aftercare / relapse prevention	X	X	-
Additional intervention				
11	Motor interventions	-	x	-

12	Creative therapy	-	X	-
13	Support groups / peers groups	X	X	-
14	Alternative interventions	-	X	-
Semi mural help				
15	Day care	X	X	-
16	Indicated reside facilities	X	X	-
Interventions outside mental health care				
17	Education guidance	X	X	X
18	Diet interventions	-	X	-
<i>Table 3.1 – Overview of ADHD treatments</i>				
<i>Source: Vink & van Wamel 2007</i>			* Not discussed in the guideline	

The treatment of ADHD rests in general on two pillars: medication and behaviour therapeutically/psychosocial treatment. The health care provider may base the treatment on the guideline and the involved practitioner decides how and when the intervention(s) is (are) applied. Good coordination between practitioners, school, and parents is therefore very important (Vink & Wamel 2007).

3.5.5 PHASE 4 MONITORING AND ADJUSTING TREATMENT

In the final phase the treatment plan is monitored and evaluated. Depending on the problems it will be decided whether and to what extent other treatment forms will be applied. E.g. more intensive care or reduction of the number of treatments. Since ADHD is a chronic disease, relapse may occur after one or more years. Information to schools may stimulate a quick referral when new health care demand occurs in child or parents/guardians (Vink & Wamel 2007).

3.6 APPLICATION

To apply the steps in the treatment process of the ADHD clinic, the phases are classified in five different groups: identification (registration); diagnostics/classification (intake); Indication; treatment (care allocation/develop treatment plan); treatment (monitoring/adjusting treatment). In the next chapter, the results of the interviews are described in more detail. These results can be seen as an internal analysis, which contains the differences between these steps in the ADHD clinics. Next, the future perspective (external analysis) due to the changes of the health care system is described. Finally, an overview of the described results is provided in a SWOT analysis.

4. RESULTS

4.1 INTRODUCTION

In this chapter, the data obtained from the interviews will be described in more detail and is divided in three parts. In the first part, the following four elements are described: the organization, the practitioners, the patient population and the treatment process. Relevant information about the elements is shown in several tables. The tables in each section can be seen as a summary of the data, which is necessary to answer the research question. Furthermore, the treatment process of each ADHD clinic is shown schematically in a flowchart. The elaboration of the flowcharts is added in *Appendix 5*. The second part includes a description of the changes in the health care system. These changes can be seen as an external analysis and is focused on the future perspective of the ADHD clinics. In the last part, an overview of the results is provided through a SWOT analysis.

4.2 ORGANIZATION

In this section the content and related aspects of the organization are described in more detail. The relevant findings of the interviews about the organization are summarized in *table 4.1a* and *table 4.1b*.

Firstly, it is identified that nearly all ADHD clinics were established and developed between 2005 and 2010. The clinic of institution B has been gradually developing since 1990, though. The reason for the establishment of the clinics varies slightly, however. Increasing supply of ADHD clients and inefficiency of the already existing institutions were one of the most important arguments. Intended was to offer a compact package for clients to create a more structured process. It is indicated in paragraph 1.6 that more structure in the process of ADHD is possible since these patients have many similarities in complaints and may as a result be more easily identified as one specific group. Such groups make it easy to develop one program that is suitable for the majority of ADHD clients. According to most participants the control and improvement of efficiency of the process of this specific group made attending the clinic for that reason very attractive. In other words, the aim of the founders of the ADHD clinics was relatively similar, namely: creating more efficiency in the process of diagnostic and treatment, including focus on support and guidance of the client.

The multidisciplinary guideline is applied in nine out of the ten participating institutions. To what extent the guideline is applied, varies between the institutions but in most interviews it was indicated that the guideline offers sufficient freedom to treat the patient adequately,

although several interviewees argued that the guideline is somewhat outdated. For most institutions the guideline is a tool and suitable for all patients, both children and adolescents. The interviewees stated that the guideline gives substance to different situations and problematic since it is a 'guideline'. However, professionals should always use their common sense when they apply the guideline according to the interviewees.

Almost all institutions apply some kind of protocol, which they have developed based on the multidisciplinary guideline. A protocol could be a specific flowchart, a care program or care pathways for the diagnostic process and treatment of ADHD. The interviewees have indicated that the protocol is applied in case of all patients, both children and adolescents. However, the protocol describes different steps in more detail. This means that for each client different methods and treatments are available. The interviewees have indicated that the protocol they apply offers sufficient freedom to treat the patient adequately. Health care providers often have a voice in the development and adjustments of the protocol. However, in one clinic the treatment is exact conform the guideline, strict compliance of the practitioners is demanded.

Organization				
Objective of ADHD clinic development	Type of organization	Funding	Number of locations with ADHD clinic	Providing of education/courses/training
A Support and guidance	Dependent. Part of the hospital	DBC	1	Yes
B Satisfaction and understanding of treatment	Dependent. Part of the hospital	DBC	1	Yes
C Better care, earlier diagnostic, treatment at a competitive price	ZBC	DBC	2	Yes
D Better functioning of children in their environment	Dependent. Part of the hospital	DBC	1	No
E Demand-orientated and stepped-care	Dependent. Part of the mental health institution	GGZ DBC	1	Yes
F Efficient, transparent and client focused	Dependent. Part of the mental health institution	GGZ DBC	3	No
G Appropriate diagnostic and efficient diagnosis	ZBC	DBC	1	Yes
H Efficiency and expertise	Dependent. Part of the mental health institution	GGZ DBC	2	Yes
I Effective and efficient care	Dependent. Part of the mental health institution	GGZ DBC	2	Yes

J	Efficient treatment	Dependent. Part of the mental health institution	GGZ DBC	2	Unknown
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Table 4.1a

Red: hospital. Blue: mental health institution (GGZ), Green: independent treatment center (ZBC)

Organization				
	Application of the Trimbos guideline	Application of a specific protocol	Adaption/update of the applied protocol	Application of recommendations of "kenniscentrum"
A	No	Use of flowcharts/script	Occasionally	No
B	Trimbos	Use of flowcharts	Occasionally	Yes
C	Trimbos	Treatment only based on guideline.	Annually	Yes
D	Trimbos	Description of the procedure	Annually	Yes
E	Trimbos	Some aspects are protocolled, based on the guideline. Use of a development model	Growth model	Yes
F	Trimbos	Description of an ADHD pathway	At least once or twice per year	Yes
G	Trimbos	Script/scheme and flowcharts	Occasionally	Yes
H	Trimbos	Protocol is based on the ADHD guideline	Every two year	Yes
I	Trimbos	The guideline is processed in the ADHD pathway. Diagram which contains different steps	Occasionally	Yes
J	Trimbos	Care program ADHD, based on the guideline.	Once in a while (one or two years)	Yes

Table 4.1b

Red: hospital. Blue: mental health institution (GGZ), Green: independent treatment center (ZBC)

4.3 PRACTITIONERS

In this section a summary of the involved professionals and professions in the institutions and clinics is provided. These people include psychiatrists, paediatricians, psychologists, nurses, secretaries, and other possible disciplines, which vary per institution. The findings of the interviews are summarized in *table 4.2*.

In the table it can be noticed that from the ten institutions, institutions B and G do not have an involved psychiatrist. In institution A and D the psychiatrist visits the clinic, but is not full time present. The three psychiatrists of institution F are part-time active in the institution. Further, it can be indicated that hospitals have more often a nurse employed compared to mental health institutions. Mental health institutions have, on the other hand, more psychologists. Psychologists often do guidance and research in the institution, while nurses often assist the physician. Furthermore, in general the founders or initiative takers of the ADHD clinic are predominantly paediatricians.

Practitioners Involved in the ADHD clinic						
	Psychiatrist	Pediatrician	Nurse (practitioner)	Psychologist	Administration	Others
A	1	5	1 nurse practitioner	1	3 in total	1 orthopedagogue
B	0	2	2	1	4 in total, 1 for ADHD	None
C	1	3	0	7	4 persons in total	Medical secretary
D	1	2	0	3	3 persons, 1 for ADHD	Testers (via psychology)
E	1	0	1	1	Not specific for ADHD	1 social psychiatric nurse
F	1	0	1 Nurse practitioner per location	20 over 3 locations	2 persons for ADHD	4 basis physicians
G	0	1	0	4	1 secretary	Outsourcing salary, PR
H	3	1	1 nurse practitioner 1 clinic nurse	6	4 secretaries, 1 person for ADHD	Doctor-assistant, Social psychiatric nurse, Behavioral scientist, Therapist
I	2	1	0	3	2 persons are partly focused on ADHD	2 youth physicians, doctor in training, 4 social psychiatric nurses, 4 TIC nurses, 1 system therapist, 1 prevention employee
J	2	0	0	4	6 persons in total	2 youth physicians, 3 social psychiatric nurses, 2 social workers.

Table 4.2
Red: hospital. Blue: mental health institution (GGZ), Green: independent treatment center (ZBC)

4.4 PATIENT POPULATION

In this section obtained information related to the patient population is described in more detail. The relevant findings of the interviews of the patient population are summarized in *table 4.3*.

In general, the ADHD clinics focus on more or less the same age, namely: children and adolescents between 4 and 18/20 years old. According to some of the interviewees primary school is the problem area, while other argued that the start of secondary school ensures problems for some children.

Patient population <i>Of the ADHD clinic</i>					
	Number of ADHD patients	New registrations per year	Target group (in age)	Ratio < 12- 12 > (age)	Type of ADHD
A	150	Unknown	4 – 18	50 – 50	Elementary and multiple
B	1000>	750	4 – 23	60 – 40	Elementary and multiple
C	1050	500	4 – 18	70 – 30	Elementary and multiple
D	800 (p/y)	250	4 – 18	60 – 40	Elementary and multiple
E	50	45	6 – 18	60 – 40	Elementary and multiple
F	1200	250	4 – 22	65 – 35	Elementary and multiple
G	199	150	4 – 20	70 – 30	Elementary
H	897	180 – 200	4 – 21/24	60 – 40	Elementary and multiple
I	549	Unknown	0 – 22	40 – 60	Elementary and multiple
J	40 - 45% has ADHD	Unknown	4 - 20	Mainly primary school	Elementary and multiple

Table 4.3
Red: hospital. Blue: mental health institution (GGZ), Green: independent treatment center (ZBC)

4.5 TREATMENT PROCESS

In this section, the information obtained from the different phases in the treatment process is described in more detail. The relevant findings are summarized in *table 4.4 and table 4.5*. The representation of each institution shows similar steps in the process, nevertheless in a somewhat different order. It has been found that in general all ADHD clinics maintain the same structure, based on the four phases described in the theoretical framework. However, two settings differed from the remaining eight ADHD clinics. In one clinic the diagnostic/classification phase occurs twice, before and after the indication. In the other clinic, the indication was prior to the diagnostic/classification. An overview of the flowcharts of all

ADHD clinics is illustrated in *Appendix 5* (Institution A to J). The waiting time per step is summarized in *table 4.7*.

4.5.1 IDENTIFICATION (REGISTRATION)

All ADHD clinics are second line health care institutions. This means that clients, before they are referred to the ADHD clinic, have had contact with another (first line) health care provider. However, some institutions have indicated that in some cases, parents directly contact the ADHD clinic.

The next step is in general that the ADHD clinic sends several questionnaires to the parents who must fill out the lists. Some institutions require that parents hand in the questionnaires at the beginning of the first appointment, while in other situations parents must send the questionnaires back to the clinic before the first appointment. The questionnaires are used as part of the classification if they must be sent back to the institution prior to the first meeting. In this case, the child is mostly classified in a specific care path within the institution, depending on the problematic based on the results of the questionnaires. In the other situation, the questionnaires are used as a tool during the intake.

4.5.2 DIAGNOSTICS/CLASSIFICATION (INTAKE)

The structure of each intake is very different per institution, including different elements. Some intakes are very extensive with a variety of researches or tests, which may be conducted in one day or may be spread over several days or weeks. An intake starts in general with an introductory conversation with the parents and the child in the presence of multiple practitioners. This may be one paediatrician or a specific team consisting of a psychologist, a therapist or a behavioural scientist. The exact steps differ per institution (see *table 4.4b* and the flowcharts in *Appendix 5* for more details).

4.5.3 INDICATION

In most ADHD clinics, a meeting with the involved practitioners to discuss the obtained information of the questionnaires and the intake takes place. In one hospital, the indication is based on the questionnaires and is established prior to the intake, while in the other institutions the indication is generally done after the intake. In the one-day clinics this meeting is often the same day, while in other institutions the multidisciplinary meetings sometimes take place only once a week when new registrations are discussed. So, the intern meeting depends on the organizational structure and is independent of the organization type. During the meeting, a treatment proposal is provided which will be discussed with the parents in phase 3.

4.5.4 TREATMENT (CARE ALLOCATION/DEVELOP TREATMENT PLAN)

The practitioners discuss the findings with the parents and give advice for further steps after an internal discussion. The waiting time for this meeting differs from one institution to another (see *table 4.7*). In some institutions the advice meeting takes place the same day, while in other institutions parents have to wait at least one week. After the meeting with the parents including advice and treatment proposal, the treatment may start. In most clinics the treatment starts immediately. However, in some clinics the severity of the problems may have impact on the waiting time since clients need to refer to a mental health institution for further research. In general is this referral done by hospitals or less specialized ZBCs.

Treatment process					
<i>In the ADHD clinic</i>					
	Specific day for ADHD intake	Number of intakes p/w	More clients at the same time	Referrals	Involved practitioner(s) in intake/diagnostic
A	Yes, One per week	2	No	GP, mental health institutions, private clinics	Pediatrician, psychologist, ADHD nurse
B	Yes, Twice per week	5 – 10	No	GP, mental health institutions, self-referrals	Nurse, pediatrician, psychologist
C	No	10	No	GP, mental health institutions, self-referrals	Pediatrician
D	Yes, One per week	5 – 10	No	GP, schools, mental health institutions	Psychologist, pediatrician,
E	Yes, Once per week	1	No	GP, medical specialist, school doctor, first-line psychologist, Bureau jeugdzorg	Treatment team with 4 practitioners (psychologists, therapists)
F	Yes, Three times a month	6	Yes	GP, mental health institutions, Bureau Jeugdzorg, pediatricians, psychiatrists	e.g. psychologists, orthopedagogues, nurse, parent coaches)
G	No	3	No	GP, pediatrician, second opinions	Psychologist, pediatrician, possibly another specialist
H	No	8	No	GP, pediatrician, specialists,	Duo intake (main practitioner and psychologist/psychiatrist)
I	No	Unknown	No	GP, mental health institutions (youth doctor/school doctor)	Social worker/behavioral scientist
J	No	2	No	GP, youth doctor, Bureau Jeugdzorg	Pair of practitioners (dependent of problematic)

Table 4.4
Red: hospital. Blue: mental health institution (GGZ), Green: independent treatment center (ZBC)

Treatment process							
<i>In the ADHD clinic</i>							
	Assessment of questionnaires	Questionnaires are part of the classification	Standard parental interview/meeting	Standard psychological research/tests/observation	Standard somatic research	Intern meeting to discuss results after intake	Diagnosis /intake classified in (age) groups
A	Deliver the day of the intake	No	Yes	Yes	Yes	Yes	No
B	Prior to the intake	Yes	Yes	No	No	No, before intake	No
C	Prior to the intake	Yes	Yes	No	No	No	No
D	Prior to the intake	Yes	Yes	No	No	Yes	No
E	Deliver the day of the intake	No	Yes	Yes	Yes	Yes	No
F	Prior to the intake	Yes	Yes	Yes	No	Yes	Yes
G	Deliver the day of the intake	No	Yes	yes	Yes	Yes	No
H	Deliver the day of the intake	No	Yes	Yes	No	Yes	No
I	Prior to the intake	No	Yes	Yes	If necessary	Yes	No
J	Deliver the day of the intake	No	Yes	No	No	Yes	No

Table 4.5
Red: hospital. Blue: mental health institution (GGZ), Gteen: independent treatment center (ZBC)

4.5.5 TREATMENT (MONITORING/ADJUSTING TREATMENT)

If the treatment plan is expanded it may occur that children have to wait for several weeks before the treatment starts. In general, psycho education is the first step in the treatment, individually or in a group. The following steps of the treatment are based on the individual problematic and possible co-morbidity. It seems that the mental health institutions often have a wider offer of different types of treatment than the ADHD clinics. Hospitals are more focused on pharmaceutical treatments and refer children with more and complex problems to psychologist's instructions or mental health institutions for more research. In some cases, children are referred back to the hospital if the research is completed.

Monitoring of the children depends on the problematic. If a child is only put on medication, they have a check occasionally (see flow charts). One institution has indicated to work with ROM (Routine Outcome Measurement).

Treatment process					
<i>In the ADHD clinic</i>					
	Treatment conform guideline	Type of treatment	Diverse range of treatments groups/individual	Referral to other institution by multiple problematic	Focus on medication
A	No	Individual	No	Yes	Yes
B	Partly	Individual	No	No, only if necessary	Yes
C	Yes, completely	Individual	Yes	No	No
D	Partly	Individual	No	Yes	No
E	Partly	Individual/groups	Yes	No	Yes
F	Yes, completely	Individual/groups	Yes	No	No
G	Unknown	Individual	Yes	No, only if necessary	No
H	Unknown	Individual/groups	Yes	No	No
I	Partly	Individual/groups	Yes	No	No
J	Partly	Individual/groups	Yes	No	No

Table 4.6
Red: hospital. Blue: mental health institution (GGZ), Green: independent treatment center (ZBC)

4.6 FUTURE PERSPECTIVE

The previous described results show that the organization type of each ADHD clinic is relatively different. However, since 2012 several changes have been implemented in the health care system that may have consequences for mental health care and its related costs. As a result, health insurance companies will carry more risk and will therefore contract health care providers based on strictly formulated requirements. These requirements are based on the price quality ratio of the treatment process and the offered treatments in institutions. Moreover, the guideline provides in recommendations about who is most competent to diagnose ADHD. Health care insurers may take these recommendations into account.

It may be noticed that much diversity about the diagnosis and treatment of children and adolescents with a (presumption) of ADHD occurs. The flowcharts of all ADHD clinics show that the organization structure and treatment supplied by the participating institutions vary widely. However, it is not determined that each treatment supply is equally efficient. Due to budget restrictions, health insurers are becoming more critical about the supply and the related cost and quality of care. The set criteria by the health insurer should therefore stimulate health care providers to provide efficient care.

One of the aims of the ADHD clinics was to reduce waiting lists. Children should receive appropriate and sufficient care with good quality. Inefficient care in institutions should therefore be reduced by prescribed quality requirements of the health insurer. As a result, ADHD clinics

that provide treatments which do not comply with the set quality requirements, may no longer be contracted. So, the organization of several ADHD clinics may have to be adapted to meet the requirements.

The number and type of practitioners differ per ADHD clinic. It may be noticed that in mental health institutions in general more psychiatrists are active compared to hospitals. In two out of ten institutions no psychiatrists are involved. In hospitals, on the other hand, more pediatricians are employed. During a telephone interview a care purchaser of a health insurance company mentioned that child- and youth psychiatrists, clinical psychologists and independent psychotherapists should do the treatment for 80% in second line mental health institutions. Other practitioners may provide the remaining 20%. However, it is shown that one of these required specialists often does not provide the treatment and diagnosis in the ADHD clinics solely. Many of the participating institutions apply the so-called "extended arm construction". Institutions are stimulated to work more efficiently because all involved specialists for diagnosis and treatment are paid from the budget of a specific DBC. Expensive professionals, like child- and youth psychiatrists, may therefore be (partly) replaced by cheaper professionals. This replacement may have consequences for the quality of care. However, the care purchaser argued that the treatment and research by a child- and youth psychiatrist is generally provided much faster than with the extended arm construction. Moreover, the treatment is often also much cheaper. He claimed that psychologists often take too much time for research, while a child- and youth psychiatrist can do the same diagnostic in less time - and therefore probably cheaper.

A few months after the interviews, one of the participating clinics indicated that they had to close since they were not contracted by health insurers. The ADHD clinic employed four psychologists and one paediatrician. These practitioners do not provide sufficient expertise for diagnosing and treating children and adolescents with ADHD, according to the health care insurers. In other words, the ADHD clinic is not able to fulfil the prescribed requirements of the health insurer to ensure efficiency and quality.

This example shows the direct problem for ADHD clinics without sufficient required practitioners. The motivation of the health insurers is that these practitioners are more experienced with ADHD and are specialized in mental disorders. Moreover, co-morbidity is often associated with ADHD, which indicates that the problem is often more complex. The requirements should result in more efficiency and better quality of the provided care.

Furthermore, the role of the municipalities will also increase in the following years. The municipalities will be responsible for youth care, including mental health care. This means that

municipalities will have to decide on how much personal budget and care is offered. ADHD clinics which are not able to fulfill the requirements of the health insurer may for that reason not be attractive to the municipality.

The implemented changes in the health care system may have impact on the existing ADHD clinics and any new initiatives. ADHD clinics may thrive if they can fulfill the requirements of the health care insurer and the municipalities to ensure efficiency and good quality care. Clinics that are not able to comply with the criteria may however, have to close.

Currently, the future perspective of the ADHD clinics is based on their organization model and the employed practitioners. How will the ADHD clinics confine to the set requirements? In lack of sufficient numbers of professionals it may not be feasible to meet these requirements and ADHD clinics are probably not contracted. This may lead to a decrease in the number of ADHD clinics and probably to more concentration of care. Since the number of patients will probably not decrease, two things may be done to comply with the set criteria. Firstly, there should be sufficiently employed practitioners (especially child- and youth psychiatrists). So, more practitioners should be educated. Secondly, the current facilities may be improved, i.e. to strengthen the regularly supplied care. Therefore, the most suitable form of care for this patient group should be taken into account. Moreover, it is important that adults with ADHD also receive sufficient care since ADHD is a chronic disorder.

4.7 SWOT ANALYSIS

The information from the above described results can be combined in an overall SWOT analysis. This model is used as tool to oversee, organize and analyse the internal strengths and weaknesses and the external opportunities and threats of the environment for the ADHD clinics. The results of this SWOT analysis may be applicable to different ADHD clinics in the Netherlands and is not solely based on the participated clinics of the research.

Information from the internal results is based on the four characteristics. The external analysis is based on the changes in the health care system. In *table 4.8* the strengths, weaknesses, opportunities and threats for the ADHD clinics are shown (see also *Appendix 6*). The different colours stand for the type of ADHD clinic or a combination of the three types. The letters O, P, PP and PT are the four characteristics of the internal analysis. The abbreviation FP is based on the external analysis and stands for Future Perspective. After each strength, weakness, opportunity or threat the abbreviations reflect to which characteristic the analysis is focused.

Based on these results, an overview for ADHD clinics is created to determine where they may have opportunities for improvement to be successful (or not) in the future. For example, whether and where should ADHD clinics make adoptions in their organization to stay contracted by health insurance companies. It may be noticed that many strengths are similar for all the types of organization. The results show that in general mental health institutions have most strengths compared to hospitals and ZBCs. A part of the weaknesses is focused on all three types of organizations; another part of the remarks is related to hospitals and ZBCs. From the external analysis it may be noted that opportunities and threats are basically focused on all three types of organization. However, two remarks for opportunities are only related to hospitals and ZBCs.

In general, based on the current developments, mental health institutions comply with the requirements of the health insurers the best. However, it should be taken into account that health insurance companies receive 100% compensation for the cost made by insured younger than 18 for mental health care, like a psychiatrist. Health insurers do not receive full compensation afterwards for all costs made for somatic research, like a pediatrician. It may be clear that health insurance companies have much influence on the future perspective of ADHD clinics. However, it may be noticed that all clinics have some points of attention.

SWOT Analysis

Strengths		Weaknesses	
Creation of a structured diagnosis and treatment process (a)	O	Some patients directly contact the clinic (without referral from first line care)	O
Focus on support and guidance of the client	O	Questionnaire is main element of the diagnosis	TP
Application of the multidisciplinary guideline	O	Treatment starts in general directly after diagnosis	TP
Application of a protocol	O	Waiting time for diagnosis	TP
Sufficient freedom to treat patients adequately	O	Likely to overlook disorders/problems (co-morbidity) due to fast diagnosis	TP
Treatment (party) conform the guideline	TP	Referral to other clinics if problems are to severe or complex	TP
Multidisciplinary team	P	Too limited offer of psychological interventions	TP
Standard parental interview/meeting	TP	Diagnosis and treatment often not conform the guideline	O
Application of questionnaires for parents, teacher (and child)	TP	Insufficient qualified practitioners	P
Diagnostic performed in a multidisciplinary context	TP	Waiting time for intake	TP
More than one involved psychiatrist	P	Focus in general on medication	TP
Multidisciplinary meeting	TP		
Standard psychological research	TP		
Type of ADHD patient is both elementary and multiple	PP		
Several psychosocial interventions	TP		

Opportunities		Threats	
More supply of psychological interventions	TP	Strictly formulated criteria/requirements of health care insurer	O, FP
Recruitment of sufficient professionals and specialists	P	Diversity about the diagnosis and treatment of ADHD	-
Recognition of co-morbidity by education of first line	FP	Budget restrictions	O, FP
Education of more professionals	FP	ADHD clinics which do not comply the set quality requirements, may no longer be contracted	FP
Research and determination of the most efficient diagnosis and treatment process	FP	Child- and youth psychiatrists, clinical psychologist and independent psychotherapists should do the treatment for 80% in second line mental health institutions	FP
Due to requirements increase of quality of care	FP	Growing role of municipalities	FP
		More critical health insurers about the supplied care	FP
		In lack of sufficient numbers of professionals it may not be feasible to meet the set requirements	FP
		Health insurers do not receive full compensation afterwards for all made cost for somatic research	FP
		Health insurance companies receive 100% compensation for the cost made by insured younger than 18 for mental health care	FP

Type of characteristic legenda

O Organization characteristic
P Practitioners characteristic
PP Patient Population characteristic
TP Treatment Process characteristic
FP Future Perspective characteristic

Organization type legenda

Hospital
GGZ
ZBC
GGZ + Hospital
GGZ + ZBC
Hospital + ZBC
Some of the GGZ + Hospitals + ZBC
All of the GGZ + Hospitals and ZBC

Table 4.8 - SWOT analysis

5. CONCLUSION

5.1 INTRODUCTION

The first chapter states that no clear definition of the concept ADHD clinic is described and defined in recent literature. To define the population for the thesis, the following definition was chosen: An ADHD clinic contains all initiatives of institutions or individuals with a focus on children and adolescents with a presumption of ADHD within a specific program. This has resulted in the following research question: *What are the characteristics of the ADHD clinics in the Netherlands in term of type of organization, practitioners, treatment, patient population and treatment process and what is their future perspective in view of the changes in the organization of mental health care?* To answer the research question, five sub questions are formulated. In this chapter the most important findings and conclusions per sub question will be described.

5.2 SUB QUESTIONS

1. What are the characteristics of ADHD clinics?

The characteristics of ADHD clinics are divided into four aspects, namely: the organization, the practitioners, the patient population and the treatment process. These characteristics are used to make a distinction between the participating institutions.

First, three different types of organization exist: the ones related to a hospital, the ones related to a mental health institution and an independent organization (ZBC). The multidisciplinary guideline for ADHD is applied in almost all ADHD clinics. Next to the guideline a specific protocol is also developed for the diagnosis and treatment. Some of these protocols are stepped-care, while others apply a development model. The adaption and updating of the maintained protocol varies between the institutions, but overall most ADHD clinics adapt/update the protocol occasionally. All clinics provide second line care, which means that a referral is necessary.

Secondly, the involved practitioners in the ADHD clinic are different per institution. In the mental health institutions there are more psychiatrists active compared to the hospitals. In two out of the ten institutions there are no psychiatrists involved. In hospitals, on the other hand, more pediatricians are active. Nurse practitioners work in three out of the ten clinics, but in general more psychologists or other behavior therapists are involved in all ADHD clinics.

Thirdly, the target group of the ADHD clinics is about the same as stated in the ADHD guideline. The patient population of the ADHD clinics varies widely, probably due to the organization type. The type of ADHD that is treated in the clinic is in general both elementary and multiple.

However, hospitals often refer to other institutions for more research if required.

Finally, the treatment process is based on four phases that can be distinguished by: identification (registration); diagnostics/ classification (intake); Indication; treatment (care allocation/develop treatment plan); and treatment (monitoring/adjusting treatment). Each client goes through a similar process generally; however, the content of the process differs among the ADHD clinics, just like the waiting times. All ADHD clinics send several questionnaires to the parents as part of the identification. In some cases, the diagnosis/classification is completed in one day. The team of involved practitioners during the intake is mostly multidisciplinary. An interview or meeting with the parents is standard procedure in each ADHD clinic. Different psychological tests are not standard procedure for the intake for most ADHD clinics, as is somatic research. A meeting to discuss the results is standard for most ADHD clinics. The intake is not classified in age groups in all ADHD clinics. The treatment in most ADHD clinics is partly conform the guideline. In some cases the treatment is completely in accordance with the guideline. The type of treatment supplied in the hospitals is in general individual based, with more focus on medication. Children and adolescents with too complex psychiatric problems are referred to mental health institutions. The treatment supplied in mental health institutions is often broader and both individual and in groups.

2. How is reimbursement of health care (with regard to ADHD patients) regulated in the Netherlands?

Treatments for mental problems are always reimbursed via the health insurance or via the AWBZ. Patients must always pay a contribution for each treatment, both in first and in second line. However, there are some exceptions. One of the exceptions is that patients younger than 18 year do not have to pay a contribution.

The funding of the organization depends on its type. Hospitals are using the DBC systematic, while mental health institutions are financed from several sources (AWBZ, ZVW, WMO or the Ministry of Justice). DBCs and Care Burden Packages (ZZP) are introduced for the curative mental health care. However, since 2012 the health insurer has become responsible for the purchasing of curative mental health care. Independent organizations may be funded by the DBC systematic or by mental health funding. However, health care insurers are only fully compensated afterwards for mental health cost for insured younger than 18 years. Hospitals and ZBCs may therefore represent increased risks for health care insurers. Moreover, health insurers do not receive full compensation afterwards for all made cost for somatic research, like a pediatrician.

From January 1, 2012, several restrictions have been imposed since the budget for mental health care has been limited by the Dutch Government. As a result: health care insurers do not contract all possible health care providers, but only those who act efficiently and based on evidence-based treatments, like guidelines. For ADHD clinics it is therefore important to comply with the set requirements of the health insurer. If ADHD clinics wish to prevail, they may be forced to make adjustments in the diagnostic and/or treatment program. This means that it is not possible to develop an ADHD clinic based on own experiences and interpretation of practitioners, but diagnosis and treatment should solely be evidence-based. If institutions want to be funded, compliance to the requirements will be essential.

3. How will contemporary policy developments concerning health care reimbursement affect the ADHD clinics and their patients?

Since 2012 several changes have been implemented in the health care system that may have consequences for mental health care and its related costs. Health insurance companies run higher risks and will therefore contract health care providers based on strictly formulated requirements to guarantee quality and transparency. These requirements are based on the price quality ratio of the treatment process and the offered treatments in the institutions. Moreover, the involved practitioners are also important because the guideline makes some recommendation about the most sufficient health care providers for the diagnosis and treatment of ADHD. The implemented changes in the health care system may have impact on the existing ADHD clinics and new initiatives. ADHD clinics may prevail if they can fulfill the requirements of the health care insurer and the municipality to ensure efficiency and good quality care. But, clinics that are not able to comply with the criteria will probably be put out of business. A manner to comply with the set requirements might be to educate more suitable professionals, and/or improve the current regular mental health care. This may result in more efficiency and better quality of the provided care. However, if adaptations are not made, waiting lists will increase since children must be referred to large mental health institutions, which comply with the criteria, but cannot meet the demand for care. Moreover, if children with ADHD are not treated adequately it can also result in high societal costs.

Another discussion is based on the development of first line care. First line care becomes more important due to high cost in second line care. However, the question is whether first line providers, who are by and large more generalist in nature, are able to identify ADHD in children and youth due to much co-morbidity and other psychiatric problems. Further, in 2013, all youth care will be shifted to the municipality. The municipality may play an important role in the guidance and support of the child or adolescent (when curative care is completed) because they

will generate the responsibility of the provided care and the Personal Budget.

As a result of the strict requirements the quality of care might increase. However, the freedom of choice for patients will be restricted since several institutions are, due to the set criteria, forced to close the clinic. Aim is to increase transparency in mental health care to improve efficiency and quality, but the question is whether it is feasible since these restrictions, i.e. employment of the required professionals, are expensive.

4. What advice may be given to the Dutch government concerning their policy on ADHD clinics?

The Government has implemented several changes in the health care system to stimulate efficiency and improvement of quality of provided care. It has been found that changes in the financial system of care for ADHD clinics have some impact. This means that only clinics that act according to the set criteria of health care insurers may continue to exist. In other words, inefficient clinics are forced to close since they are not contracted. This means that self-regulation has developed in this particular market, which was the intention of the changes implemented by the Ministry of Health. Institutions with the highest attainable quality of care may continue their activities and might even expand. The care and organization in other institutions may be improved and/or adapted to comply with the requirements of the health insurers.

The set requirements of the health insurer concerning the diagnosis and treatment may result in more efficiency and improved quality of care. Even though it is important that restrictions are made to stimulate efficient care by health care providers, feasibility of these criteria is also essential and not always calculated. One aspect is based on the diagnostic and treatment by a clinical psychologist, therapist or child-and youth psychiatrist. However, it is mentioned that insufficient availability of child-and youth psychiatrists exists in the Netherlands. Investment in more and suitable educated professionals may be an option, however this might be costly.

Moreover, the role of first line care has become more important to control cost since 2012. However, the problem could be that the first line is unequipped to diagnose ADHD. Furthermore, co-morbidity is associated with ADHD in many cases so the problematic is often complex. Training and courses for first line practitioners in mental health to recognize symptoms could therefore be a solution since children and adolescents will be referred correctly and to the right institution.

What is more, the requirements for efficient and good care should be considered and discussed since the best attainable organization for the treatment process for children and adolescents

with ADHD is not exactly defined. It is not clear which type of ADHD clinic is the most effective and whether an ADHD clinic is cost effective. Intention of ADHD clinics seems to be focused on less complex cases, i.e. patients without co-morbidity. ADHD clinics in hospitals or independent health centres with an insufficient number of suitable professionals refer complex patients often to mental health organizations. Mental health institutions with a specific ADHD program are in general able to treat complex patients. Further, some institutions offer an extensive research, including several elements of the diagnostic process. However, not all these different elements are always necessary to define the diagnosis. The offered care may therefore be very inefficient due to over diagnostic and treatment. For that reason, it might be necessary to do more research, i.e. evaluate the cost effectiveness and efficiency of different types of ADHD clinics compared to alternative types before more requirements are set.

5. What may be the strengths, weaknesses, opportunities and treats of ADHD clinics?

The strengths, weaknesses, opportunities and treats of ADHD clinics are described in a so-called SWOT analysis. The analysis consists of an internal analysis, which is focused on the strengths and weaknesses within the organization of the ADHD clinics and on an external analysis, which is focused on the opportunities and threats of the environment of the ADHD clinics. The internal analysis is based on the four characteristics of an ADHD clinic. These are: organization, practitioners, patient population and the treatment process. The external analysis includes more insight in the current changes in the health care system. Based on the obtained information, the SWOT analysis provides more insight in the future perspective of the ADHD clinics.

The points of interest for ADHD clinics are different per type of organization. Opportunities for improvement to be a successful organization vary between the three types. The results have shown that ADHD clinics in mental health institutions have in general fewer weaknesses than hospitals and ZBCs since they are, in general, in a better position to comply with the requirements of health insurers. Moreover, compensation for expenses for mental health care for patients younger than 18 year is fully compensated, while somatic research is not completely reimbursed. This may be a trigger for health insurance companies to focus on mental health institutions since these organizations employ more specialists and can offer more and different kinds of treatments. However, it might be clear that all clinics have some points of attention to be able to develop into well-functioning ADHD clinics.

6. DISCUSSION

The aim of this research was to provide an overview of the characteristics of ADHD clinics in terms of type of organization, involved practitioners, patient population and treatment process. Based on these characteristics the future perspective of the ADHD clinics was evaluated. In total ten different ADHD clinics participated in the research and three types of ADHD clinics are described. The future perspective of these clinics is based on the current changes in the reimbursement system of health care, which is focused on stimulating efficiency and improvement of quality of care. Health care insurers run greater financial risks and have therefore created specific criteria for the provided care of health care providers. One result might be that ADHD clinics that do not comply with the set criteria of the health insurer, are not contracted by the health insurance company so they may be forced to close.

However, to the best of our knowledge, this research is the first attempt to provide more insight in the phenomenon of ADHD clinics. There are, unfortunately, several limitations worth mentioning in this research.

First, some considerations about the generalizability of the study should be mentioned. The question is whether the selection of ADHD clinics provides a good reflection of the studied population. Beforehand it was determined that ten different ADHD clinics should be included in the research since this seemed a reasonable and achievable number of participants.

The study started with a market research to provide an overview of developed ADHD clinics in the Netherlands. Several institutions were emailed and phoned to ask whether they have an ADHD clinic and whether they wanted to cooperate in the research. It was assumed that a limited willingness to participate would occur. Therefore, different institutions in the same region were contacted so the chance of institutions willing to participate would grow. It turned out that when institutions were not willing to participate, lack of time was the most commonly indicated reason. However, most of the approached institutions were willing to cooperate. In one region, all contacted institutions were willing to participate so the geographic distribution was slightly hindered. Nevertheless, the involved institutions in this region were all of a different type of organization so the selection was not constrained. In general, the total selection of participants is rather diverse. Five mental health institutions are included and some of them have a specific ADHD program, while others have a “one day clinic” for ADHD. Further, three hospitals are involved which vary in size and program. Finally, two independent centres have

participated. Of this selection, some are small with not many employees, while others are much larger including several professionals. Even though the ratio of the three organization types between the involved participants is not equal, it includes an extensive selection of different institutions and may therefore be reasonable representative for the population of ADHD clinics. Moreover, during a presentation for the Sales Department of Lilly about the findings of this research results were recognizable. For that reason, we may conclude, with some degree of uncertainty, that the participated ADHD clinics are a reasonable presentation of the population.

Since one definition of description about the concept ADHD clinic does not exist, I assumed that an ADHD clinic is an institution with a specific program or focus on the diagnosis and treatment of ADHD. You may question whether a care program is comparable with a “one day clinic”. However, currently the focus is primarily on an efficient treatment process. For that reason, it seems attractive to do further research into the organization type with the most efficient treatment process for ADHD. The three types of organization may be used as a starting point so each type may be investigated in more detail, like the composition of professionals and the offered research elements during the diagnosis. Based on these results new knowledge about the most efficient diagnosis and treatment process may be developed.

Moreover, initially it was the intention to interview only physicians, like child- and youth psychiatrists or pediatricians. However, during the approach of potential participating institutions, this requirement seemed not feasible for the research. The reason was lack of time of the physicians, or other employees were interested in the research or some other employees were directly involved in the ADHD clinic. For that reason all interviews were given by the persons of the approached clinics who agreed to participate in the research. The result was that different types of professionals were involved in the research that may have led to a different conclusion. On the other hand, such diversity may also be seen as associated with the ADHD clinics and indicates the ambiguity. Nevertheless, more clarification and similarity between institutions about the provided care is necessary to ensure good quality and efficiency. However, the financial barrier to investigate the best attainable care according to the ADHD clinic with the most efficient ADHD care is major, especially due to the current economic situation in the Netherlands. For that reason it might be an option that scarce financial means should be distributed based on set criteria for the treatment of ADHD in institutions.

Thirdly, several perspectives are discussed: those from physicians, managers, nurses, therapists and a health purchaser. However, the patient perspective is not explicitly mentioned so this

might be interesting for further research. Nevertheless, the patient perspective based on one-day diagnosis is cited by some physicians and the health purchaser. They argued that parents have indicated that they experienced a diagnosis in one day as less pleasant since they got the feeling they were not taken seriously. Parents want to think over an intake and the possibility that their child has ADHD. So the patient perspective might be important when criteria are set by health insurers.

A fourth consideration is based on the role of first line care and the role of the municipalities. The question remains whether first line providers, who are in general more generalist in nature, are able to identify ADHD in children and youths due to much co-morbidity and other psychiatric problems. False positive and false negative referrals to second line care might be a risk. ADHD clinics should, therefore, be solely suitable for children with a clear presumption. And this presumption must be recognized by first line health care providers. A solution for this might be an update of guidelines for ADHD for the youth health care and GP care. The guideline is focused on instruments to recognize signals of ADHD in children and youths so practitioners can refer parents adequately. In addition, the cooperation between parents and practitioners in the diagnostic process is part of the guideline.

Furthermore, much literature was based on research in mental health institutions, while hospitals and individuals that are not primarily focused on mental health care have started ADHD clinics also. Future research should indicate the cost effectiveness of these different types of clinics in the treatment of (sub) groups of ADHD patients. Moreover, to stimulate efficiency, it seems important to define the right patient group and refer the patient to the right place. The health insurers' argument might be that diagnosis and treatment can also be done in a mental health institution and often more efficiently since several treatments are provided. The 'right' construction of the institution (including sufficient professionals) is for that matter very important. ADHD clinics must probably comply with stringent requirements if they want to continue to exist or progress. Therefore, it might be essential to invest in education and training of sufficient professionals or invest in improvement of regular care since ADHD clinics otherwise are not able to comply the set criteria of the health insurer.

Another point of interest is who decides which criteria or requirements are essential. The multidisciplinary guideline is one criterion; however, this guideline dates from 2005 and may need an update. It might be obvious that health care insurers and the Government want the best attainable care for the money they spend. This means that feasibility should be guiding for the health care market so all health care providers will be stimulated to improve or develop

performance. Increasing quality and efficiency of care should be the result. If the treatment process and organization type does not match with the requirements of the health insurer, institutions may be faced with several (budgetary) restrictions by health care providers. On the one hand this might be a positive development for the patient since only the best attainable care is provided. On the other hand, the freedom of choice might be limited because the supply of treatments will decrease due to concentration of institutions. However, freedom of choice is also expensive. A good balance within the health insurer seems therefore essential.

Some participants have argued that the future of ADHD clinics will mainly be in lifecycle clinics. The lifecycle ADHD clinic offers treatment to both parents and children with ADHD. ADHD is genetically determined and occurs for that reason in different generations. Integration of care for parents and children might result in stability in the family. Currently, care for ADHD is organized in separate facilities for children/adolescents, adults and the elderly. The aim of lifecycle clinics is to improve continuity and care during people's entire lives (Kooij, 2006). The advantage of these clinics is that support can be deployed in the whole family. Moreover, ADHD is a chronic disorder that continues in adulthood. So if children turn 18 years old, they need not be referred to another institution. The indicated problem is the financial impact: "it is not possible to provide care and make losses". Another participant also thinks that the ADHD clinics will continue to exist, however, maybe less in hospitals and more in ZBC and mental health institutions. Nurse practitioners or ADHD nurses will become probably also more important.

A final consideration is based on the role of the health insurer and the number of participating health insurers in this research. It might be clear that the function they have has become more and more important. It seems that health insurers have specific preferences concerning health providers and treatments. Therefore it could be very interesting to do research with a broader group of health insurers to investigate their perspective and opinion about ADHD clinics. Although only one health insurer participated in this research, it may indicate a tendency of the importance of this factor.

ABBREVIATION

ADHD	Attention Deficit/Hyperactivity Disorder
AWBZ	Algemene Wet Bijzondere Ziekten (General Act Specific Diseases)
CJG	Centrum voor Jeugd en Gezin (Center for Youth and Family)
DBC	Diagnose Behandel Combinatie (Diagnose Treatment Combination)
DSM	Diagnostic and Statistical Manual of Mental Disorders
GGZ	Geestelijke Gezondheidszorg (Mental Health Care)
ICD	International Classification of Diseases
Nza	Nederlandse Zorg Autoriteit (Dutch Health Authority)
PAAZ	Psychiatrische Afdeling Algemene Ziekenhuizen (Psychiatric Department General Hospitals)
PGB	Patiënt Gebonden Budget (Personal budget)
VWS	Ministerie van Volksgezondheid Welzijn en Sport (Ministry of Health Welfare and Sport)
Wmg	Wet Marktordening Gezondheidszorg (Market organization Act)
WMO	Wet maatschappelijke Ondersteuning (Social Support Act)
ZBC	Zelfstandig Behandel Centrum (Independent Treatment Centre)
ZVW	Zorgverzekeringswet (Health Insurance Act)

REFERENCES

- Aartsen, C van. 2011. Schippers wil in 2012 nieuwe financiering ziekenhuizen [Internet]. <http://www.zorgvisie.nl/Financien/10881/Schippers-wil-in-2012-nieuwe-financiering-ziekenhuizen.htm> Accessed February 22, 2011.
- Abikoff, H., Cournety, M., Pelham, W.E., Koplewicz, H.S. 1993. Teachers' ratings of disruptive behaviors: the influence of halo effects. *J abnorm child psycho*. 1993;21:519-533.
- American Psychiatric Association. 2000. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR). Washington, DC, American Psychiatric Association.
- American Psychiatric Association. 2005. Diagnostic and Statistical Manual of Mental Disorders, fourth edition, DSM-IV. Washington DC.
- Balansdigitaal. 2010. Zorg om ADHD in de media [Internet]. <http://www.balansdigitaal.nl/data/nieuws/2010/9/zorg-om-adhd-in-de-media/> Accessed January 18, 2012.
- Barkley, R.A., Fischer, M., Edelbrock, C.S., Smallish, L. 1990. The adolescent outcome of hyperactive children diagnosed by research criteria, I: An 8 year prospective follow-up study. *J Am Acad Child Adolesc Psychiatry* 1990; 29:546-557
- Barkley, R.A., Guevremont, D.G., Anastopoulos, A.D., DuPaul, G.J., Shelton, T.L. 1993. Driving-related risks and outcomes of attention deficit hyperactivity disorder in adolescents and young people: A 3-5 year follow-up survey. *Pediatrics* 1993;92:212-218.
- Barkley, R.A., Murphy, K.R., Kwasnik, D. 1996. Motor vehicle driving competencies and risks in teens and young adults with attention deficit hyperactivity disorder. *Pediatrics* 1996: 98:1089-1095.
- Barkley, R. 2000. Taking charge of ADHD: the complete, authoritative guide for parents. New York: Guilford, 2000.
- Baumgaertel, A., Copeland, L., Wolraich, M.L. 1996. Attention Deficit hyperactivity disorder. In: disorders of development and learning: a practical guide to assessment and management. 2nd ed. St Louis, MO: Mosby yearbook, Inc; 1996:424-456.
- Berg, G van den. 2008. Prevalentie van ADHD. Nederlands jeugd instituut.
- Biederman, J., Newcorn, J.H., Sprich, S. 1991. Co-morbidity of attention-deficit hyperactivity disorder with conduct, depressive, anxiety and other disorders. *Am J Psychiatry*. 1991;148:251-256.
- Biederman, J., Farone, S., Milberger, S., et al. 1996. A prospective 4-year follow-up study of attention-deficit/hyperactivity and related disorders. *Arch Gen Psychiatry*. 1996;53:437-446.
- Biederman et al. 1997. Is ADHD a risk factor for psychoactive substance use disorders? Findings from a four-year prospective follow-up study. *J Am Child Adolesc Psychiatry* 1997; 36(1):21-29
- Boerema. 2010. Project: Multidisciplinaire Richtlijn ADHD in de Jeugd Gezondheidszorg (JGZ). ZonMw. [Internet] <http://www.zonmw.nl/nl/projecten/project-detail/multidisciplinaire-richtlijn-adhd-in-de-jeugd-gezondheidszorg-jgz/> Accessed February 28, 2012.
- Bogt, ter T., Dorsselaer, S van, Vollebergh, van W. 2003. Psychische gezondheid, risicogedrag en welbevinden van Nederlandse scholieren HBSC 2002. Utrecht: Trimbos-instituut, 2003.
- Boot, J.M.D. 2010. Organisatie van de gezondheidszorg. Assen: Van Gorcum.
- BronovoMagazine. 2008. Snelle diagnose en behandeling dankzij ADHD-spreekuur Druk en ongeconcentreerd. BronovoMagazine. Juni 2008. Uitgave 2. Jaargang 6.

- Buitelaar, J.K., Kooij, J.J.S. 2000. Aandachtstekort-hyperactiviteitsstoornis (ADHD); achtergronden, diagnostiek en behandeling. *Ned Tijdschr Geneesk* 2000;144(36).
- Buijsen, M.A.J.M. Wetgeving gezondheidszorg. Apeldoorn/Antwerpen: Maklu uitgevers, 2009.
- Bukstein, O.G. 2010. Clinical practice guidelines for attention-deficit/hyperactivity disorder: a review. *Postgraduate Medicine*, 2010 Sep; 122 (5): 69-77.
- Busch, M. 2005. Welke normen zijn er voor aanvaardbare wachttijden in de zorg. In: *Volksgezondheid Toekomst en Verkenning, Nationaal Kompas Volksgezondheid*, RIVM.
- Creswell, J.W. 2003. Research Design: Qualitative, Quantitative, and mixed methods approaches. SAGE publications. London
- Committee on quality improvement, subcommittee on attention-deficit/hyperactivity disorder. 2000. Clinical practice guideline: diagnosis and evaluation of the child with attention-deficit/hyperactivity disorder. *Pediatrics*. 2000;105:1158-1170.
- DBC – onderhoud. 2012. Over de DBC-systematiek. [Internet] <http://www.dbconderhoud.nl/over-de-dbc-systematiek/menu-id-84>. Accessed June 1, 2012.
- DeGrandpre, R. 1999. Ritalin nation; rapid-fire culture and the transformation of human consciousness. New York: Norton; 1999.
- Diephuis et al. 2009. Handboek slimmer organiseren. Kwaliteitsinstituut voor de gezondheidszorg CBO.
- Dijk, C., Zuidgeest, M., Dijk, van L., Verheij, R. 2008. Stijging behandeling ADHD bij kinderen. *Huisarts & Wetenschap*: 51(13) december 2008
- Dijk, M., Prinsen, B. 2009. Opvoedingsondersteuning in het Centrum voor Jeugd en Gezin. Handreiking, Utrecht: Nederlands Jeugd Instituut.
- DiScala, C., Lescohier, I., Barthel, RN., Li, G. 1998. Injuries to Children With Attention deficit Hyperactivity Disorder. *PEDIATRICS* Vol. 102 No. 6 December 1, 1998 pp. 1415 -1421
- Dopheide, J.A. and Pliszka, S.R. 2009. Attention-deficit-hyperactivity disorder: an update. *Pharmacotherapy* Volume 29, number 6, 2009.
- Dorresteyn, van M. 2011. Schippers juicht kwaliteitscriteria zorgverzekeraars toe. *Zorgvisie Magazine*.
- Elia J, Ambrosini P, Berrettini W. 2008. ADHD characteristics: I. Concurrent co-morbidity patterns in children & adolescents. *Child Adolesc Psychiatry Ment Health*. 2008; 2(1): 15.
- Elling, E. 2008. Databank effectieve jeugdinterventies: beschrijving 'Groepsmediatietherapie voor ouders met kinderen met ADHD'. Utrecht: Nederlands Jeugdinstituut.
- Elling, M.W. and Minderaa R.B. 2010. Zicht op kennis. Beschikbare diagnostische instrumenten en interventies voor de jeugd-ggz. Lanndelijk kenniscentrum Kinder-en Jeugdpsychiatrie.
- Faraone SV, Biederman J, Weber W, Russel RL. 1998. Psychiatric, neuropsychological and psychosocial features of DSM-IV subtypes of ADHD: results from a clinically referred sample. *J Am Acad Child Adolesc Psychiatry* 1998;37:185-93
- Franx GC, Eland AE, Verburg H. 2002. Transparante zorg in de GGZ: van de bomen en het bos. Onderscheid en samenhang tussen richtlijnen, protocollen, zorgprogramma's en andere ontwikkelingen op het gebied van kwaliteitszorg. *MGv* 2002;11:1036-50.
- Frazier T, Youngstrom E, Glutting J, Watkins M. ADHD and achievement: meta-analysis of the child, adolescent, and adult literature and a concomitant study with college students. *Journal of learning disabilities*. 2007;40:49-65.

- GGZ Groep. 2012. Vergoeding. [Internet] <http://www.ggzgroep.nl/vergoeding/> Accessed: May 18, 2012.
- GGZ Nederland. 2009. Zorg op waarde geschat. Sectorrapport GGZ 2009. Amersfoort.
- Gezondheidsraad. 2000. Diagnostiek en behandeling van ADHD. Den Haag: Gezondheidsraad, 2000m; 24.
- Groot, S.M de. 2009. De rol van de SPV in de ééndags diagnostiek ADHD. *SP (SP)*, 2009: 23-29.
- Grol, R., Wensing, M. 2001. *Implementatie: Effectieve verandering in de patiëntenzorg*. 2001. Maarssen: Elsevier
- Goldman LS, Genel M, Bezman RJ, Slantez PJ. 1998. Diagnosis and treatment of attention-deficit/hyperactivity disorder in children and adolescents. Council on scientific affairs. *JAMA* 279: 1100-1107.
- Hamilton, G.J.A. 2005. Een zorgverzekering voor iedereen. PS-special Zorgverzekeringswet en Wet op de zorgtoeslag. Deventer: Kluwer.
- Harmanny, F. 2011. ADHD in de media. Meningen over ADHD-medicatie. ADHD wachtkamerspecial. Academic Pharmaceutical Productions bv. Jaargang 8, nummer 1, juli 2011.
- Hollander AEM de, Hoeymans N, Melse JM, Oers JAM van, Polder JJ (eds). 2006. Zorg voor gezondheid - Volksgezondheid Toekomst Verkenning 2006. RIVM rapport 270061003, Volksgezondheid Toekomst Verkenning. Bilthoven.
- Hollander, M. 2004. Het verkorten van wacht-en doorlooptijden in de jeugdzorg - research voor beleid - beleidsonderzoek.mht. 2004.
- Ingeest. 2010. Nieuwe academische polikliniek ADHD [Internet] <http://www.gzingeest.nl/organisatie/uitgelicht-home/uitgelicht/academische-polikliniek-adhd/> Accessed May 29, 2012.
- Ingram, S., Hechtman, L., Morgenstern, G. 1999. Outcome issues in ADHD: adolescent and adult long-term outcome. *Ment Retard Dev Disabil Res Rev.* 1999;5:243-250.
- Janssen, R., Soeters, P. 2010. DBC's in de GGZ, ontwrichtende of herstellende werking. *GZ Psychologie*, no. 7: 36-45.
- Jensen, P.S., et al. 1990. Are stimulants overprescribed? Treatment of ADHD in four U.S. communities. In: *Journal of the American Academy of Child and Adolescent Psychiatry*, no. 38 (1990): 797-804.
- Kelleher, K.J., McInerney, T.K. Gardner, W.P, et al. 2000. Increasing identification of psychosocial problems: 1979-1996. *Pediatrics*. 2000; 105:1313-1321.
- Kennisring. 2012. Wat is een PGB voor AWBZ-zorg? [Internet] . <http://www.kennisring.nl/smartsite.dws?id=34379> Accessed February 21, 2012.
- Klasen, H., Verhulst, F.C. 2005. Betere gezondheidszorg mogelijk voor kinderen en adolescenten met aandachtstekort-hyperactiviteitstoornis. In: *Nederlands Tijdschrift Geneeskunde*, no. 31(149): 1723-1725.
- Klink., A, Bussemaker, J. 2009. Overheveling zorg AWBZ naar ZVW. Letter, Den-Haag: VWS, 2009.
- Kooij, J.J.S. 2009. ADHD bij volwassenen. Diagnostiek en behandeling. Amsterdam: Pearson Assessment and information.
- Lahey, B.B., Applegate, A., McBurnett, K., et al. 1994. DSM-IV field trials for attention-deficit hyperactivity disorder in children and adolescents. *Am J Psychiatric* 1994, 151:1673-1685.
- Land, H van 't, Ruiters, C de., Berg, M van den., Schoemaker, C. 2005. Cliënten en verwijzers in de jeugd-ggz. In: *Brancherapporten VWS*. <http://www.brancherapporten.minvws.nl> - De VWS-sectoren - GGZ-MZ -

Feiten en cijfers - Kinderen en jeugd. Den Haag: VWS, 2005b.

Lannelli, V. 2011. Understanding ADHD - ADHD in Children. ADHD Basics [Internet] http://pediatrics.about.com/od/adhd/a/adhd_hub.htm Accessed February 23, 2012.

Leibson, C.L., Katusic, S.K., Barbaresi, W.J., Ransom, J., O'Brien, P.C. 2001. Use and cost of medical care for children and adolescents with and without attention-deficit/hyperactivity disorder. *JAMA* 2001; 258:60-66

Loo-Neus, G.H.H. Van de. 2006. Thema ADHD. In: www.kenniscentrum-kjp.nl, thema ADHD.

Mackenbach, J., Maas, P van der. 2008. *Volksgezondheid en gezondheidszorg*. Maarssen: Elsevier gezondheidszorg.

Mandell, D.S., Thompson, W.W., Weintraub, E.S. et al. 2005. Trends in diagnosis rates for autism and ADHD at hospital discharge in the context of other psychiatric diagnoses. *Psychiatr Serv.* 2005; 56:56-62.

Mash, E.J. Johnston, C. 1983. Sibling interactions of hyperactive and normal children and their relationship to reports of maternal stress and self-esteem. *J Clin Child Psychol.* 1983;12:91-99

Meijer, S. Verhulst, F.C. 2006. Hoe vaak komt autisme voor en hoeveel mensen sterven eraan? *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Gezondheid en ziekte\ Ziekten en aandoeningen\ Psychische stoornissen\ Autismen.

Meijer, S., Wieren, S van., Konijn, C., Verhulst, F.C. 2008. ADHD: Hoeveel zorg gebruiken patiënten en wat zijn de kosten? In: *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\Gezondheid en ziekte\Ziekten en aandoeningen\Psychische stoornissen\ADHD.

Meijer, S. 2010. Ggz voor kinderen en jongeren: Hoe wordt ggz voor kinderen en jongeren gefinancierd en wat zijn de kosten? In: *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\Zorg\Geestelijke gezondheidszorg\Ggz voor kinderen en jongeren.

Ministerie van VWS. 2011. Wie betaalt de behandeling van mijn psychische problemen? [Internet] <http://www.rijksoverheid.nl/onderwerpen/zorgverzekering/vraag-en-antwoord/wie-betaalt-de-behandeling-van-mijn-psychische-problemen.html> Accessed February 21, 2012.

MKB servicedesk. 2012. Het exportproces: een SWOT analyse. [Internet] <http://www.mkbservicedesk.nl/161/de-swot-analyse-exportproces.htm>. Accessed May 23, 2012

Nederlandse Zorgautoriteit. 2011. Veelgestelde vragen DOT [Internet]. <http://www.nza.nl/zorgonderwerpen/dossiers/dbc-dossier/veelgestelde-vragen/veelgestelde-vragen-dot/> Accessed December 30, 2011.

NHTSA. 1997. Sentencing and dispositions of youth DUI and other alcohol offenses: a guide for judges and prosecutors.

Nieuwsuur. 2012. Verlengde armconstructie onder vuur [Internet]. <http://www.artsennet.nl/Actueel/Medisch-op-tv/Uitzending/110700/Verlengde-armconstructie-onder-vuur.htm> Accessed February 2, 2012.

Nieweg, E.H. 2006. ADHD, a 'fashion' that won't go out of fashion. An illustration of the many-sidedness of earlier psychiatry. *Tijdschr Psychiatr.* 2006;48(4):303-12

Noe, T.J. 1995. The best of both worlds. *HMO.* 1995 Jan-Feb;36(1):36-41

NVZ. 2011. Verantwoordingsdocument implementatie prestatiebekostiging medisch specialistische zorg.

- Nza. 2010. Monitor zorginkoop zorgverzekeraars. Nederlandse zorgautoriteit.
- Onderwater, K., Padt, van der I., Romme, van der M., Venneman, B., Verberk, F. 2005. Sociale psychiatrie, visie, theorie en methoden van een maatschappelijk georiënteerde psychiatrie. Utrecht: Lemma.
- Otten-Pablos, S. 2011a. Over ADHD en de politieke waanzin. [Internet]
<http://www.adhdnetwerk.nl/ADHD.aspx?id=549&idblog=5> Accessed January 18, 2012
- Otten-Pablos, S. 2011b. ADHD in de tweede kamer. [Internet]
<http://www.adhdnetwerk.nl/ADHD.aspx?id=549&idblog=8>. Accessed January 18, 2012
- Otten-Pablos, S. 2011c. Column - een gezonde opvatting! [Internet]
<http://www.adhdnetwerk.nl/ADHD.aspx?id=481&idn=55> Accessed January 18, 2012
- Peeters, B. 2009. Eendagsdiagnostiek ADHD wordt trend. Nr. 4 Psy 2009.
- Pereira, R., Kooij, S., Buitelaar, J. 2011. ADHD zeker geen modegril. Medisch contact. Januari 2011. 66 nr 3.
- Pennarts, J. 2008. Honderden psychiaters tekort in GGZ-instellingen [Internet]
<http://www.novativ.nl/page/detail/uitzendingen/6302> Accessed February 28, 2010.
- Pliszka, S.R., Bernet, W., Bukstein, O., et al. 2007. For the American Academy of Child and Adolescent Psychiatry work group on quality issues. Practice parameter for the assessment and treatment of children and adolescents attent-deficit-hyperactivity-disorder. J Am Acad Child Adolesc Psychiatry 2007; 46:894-921.
- Ploegmakers, M.J.H., Smet, J.M.A de., Wiebes, P.E., Dam, C.L van. 2005. Brancherapporten VWS Jeugd-ggz: Gebruik en productie [Internet] http://www.brancherapporten.minvws.nl/object_class/br_wens_jeugd-ggz.html Accessed February 23, 2012.
- Polanczyk, G. M.D., Silva de Lima, M.M.D., et al. 2007. The Worldwide prevalence of ADHD: A systematic review and metaregression analysis. Am J Psychiatry 2007; 164:942-948.
- Pomerleau, O.F., Downey, K.K., Stelson, F.W., Pmerleau, C.S. 1995. Cigarette smoking in adult patients diagnosed with ADHD. J Subst Abuse 1995; 7(3):373-8
- Poos, M.J.J.C., Smit, J.M., Groen, J. Kommer, G.J., Slobbe, L.C.J. 2008. Kosten van ziekten in Nederland 2005. RIVM-rapport nr. 270751019, Bilthoven: RIVM.
- Psy. 2008. Lange wachtlijsten in de jeugd-ggz aangepakt [Internet]
http://www.versnellingjeugdggz.nl/documents/Psy_Langewachtlijstendejeugd-ggzaangepakt.pdf. Accessed February 22, 2012.
- Psy. 2009. GGZ Nederland vreest tuchtrecht-zaken door eisen zorgverzekeraars [Internet].
<http://www.psy.nl/meer-nieuws/nieuwsbericht/article/ggz-nederland-vreest-tuchtrechtzaken-door-eisen-zorgverzekeraars/> Accessed February 27, 2012
- Psy. 2011. Een behandeladvies duurt nog maar een paar uur. [Internet]
http://www.versnellingjeugdggz.nl/documents/Psy_Eenbehandeladviesduurtnogmaareenpaaruur.pdf Accessed December 21, 2011
- Psy. 2012. CZ wil vanaf 2013 beginnen met selectief inkopen. [Internet]
[http://www.psy.nl/index.php?id=134&tx_ttnews\[tt_news\]=4777&no_cache=1](http://www.psy.nl/index.php?id=134&tx_ttnews[tt_news]=4777&no_cache=1) Accessed May 31, 2012
- Robben, P.B.M. & Tietema, W. 2005. Ziekenhuispsychiatrie niet transparant. Medisch contact. 60 nr. 25. 1071-1074
- Roobol, J. 2009. ADHD in de eerste lijn: volksziekte zonder huisarts? In: *Huisarts en Wetenschap*, 2009:

nummer 1:52-52.

Rijksoverheid. 2011. Veranderingen in de WMO. sd. [Internet] <http://www.rijksoverheid.nl/onderwerpen/wet-maatschappelijke-ondersteuning-WMO/hulp-en-ondersteuning/veranderingen-in-de-WMO> Accessed December 29, 2011.

Rijksoverheid – zorgverzekering. 2012. Wat zijn de veranderingen in de zorg in 2012? [Internet] <http://www.rijksoverheid.nl/onderwerpen/zorgverzekering/vraag-en-antwoord/wat-zijn-de-veranderingen-in-de-zorg-in-2012.html> Accessed May 29, 2012.

Rutter, M., Kim-Cohen, J., Maughan, B. 2006. Continuities and discontinuities in psychopathology between childhood and adult life. *Journal of Child Psychology and Psychiatry*. Volume 47, Issue 3-4, pages 276–295.

Sambeek, van N. 2009. Sluipend kwaliteitsverlies in de GGZ. Over de gevolgen van Diagnose Behandel Combinaties in de praktijk. Universiteit van Amsterdam.

Schachar, R., Sandber, S., Rutter, M. 1986. Agreement between teachers' ratings and observations of hyperactivity, inattentiveness and defiance. *J Abnorm Child Psychol*. 1986;14:331-345.

Schachar, R.J., Tannock, R., Cunningham, C., Corkum, P.V 1997. Behavioral, situational, and temporal effects of treatment of ADHD with methylphenidate. *J Am Acad Child Adolesc Psychiatry* 1997, 36:754-763.

Schippers, E. 2011. Kamerbrief over de voornemens omtrent curatieve geestelijke gezondheidszorg. Kamerstuk, Den-Haag: VWS

Schoemaker, C., Ruiters, C. de, Berg, M. van den, Cuijpers, P., Graaf, R. de, Have, M. ten, Voogel, S. 2003. Nationale monitor geestelijke gezondheid: jaarboek 2003. ADHD, anorexia nervosa en andere psychische stoornissen. Utrecht: Trimbos-instituut.

Schouten, L, Minkman, M., Moel, de J. 2007. Doorbreken met Resultaten in de gezondheidszorg. Assen: Koninklijke Van Gorcum BV.

Scienceprogress. 2012. SWOT analyse. [Internet] <http://www.scienceprogress.nl/diagnose/swot-analyse> Accessed: May 20, 2012.

Slabbers, S. 2008. Financiering van de GGZ. *De Psycholoog*, jaargang 43, september 2008, 495-496.

Stichting Farmaceutische Kengetallen. 2011. Meer dan 1 miljoen ADHD-voorschriften. 8 december 2011, *Pharmaceutisch Weekblad*, Jaargang 146 Nr 49.

Stichting OOGG. 2009. Centrum Jeugd en Gezin in de steigers?" *Met het oog op uw toekomst*. [Internet] <http://www.oogg.nl/actueel/nieuws/actueel/centrum+jeugd+en+gezin+in+de+steigers%3F>. Accessed February 21, 2012.

Steer, C. 2010. Why is ADHD controversial? *Netdoctor*. [Internet] <http://www.netdoctor.co.uk/adhd/whyisadhdcontroversial.htm> Accessed May 19, 2012.

St. Elisabeth Ziekenhuis. 2012. ADHD-centrum Tilburg [Internet]. http://www.elisabeth.nl/ik_ben_patient/vm_specialismen/zorgeenheden/kindergeneeskunde/poli_kindercentrum/adhd-centrum_tilburg/ Accessed: May 29, 2012.

Stubbe, D.E. 2000. Attention-deficit/hyperactivity disorder overview. Historical perspective, current controversies, and future directions. *Child Adolesc Psychiatr Clin N Am*. 2000 Jul;9(3):469-79, v.

Taylor, E., Döpfner, M., Sergeant, J., Asherton, P., Banaschewski, T., Buitelaar, J., et al. 2004. European Clinical Guidelines for hyperkinetic disorder – first upgrade. *European Child and Adolescence Psychiatry*, 2004; suppl. I(13): I 7-30.

- The Busy People. 2012. Helpen [Internet]. <http://thebusypeople.nl/helpen-bij-adhd/> Accessed May 29, 2012.
- Tiemens, B., Kaasenbrood, A., Niet, de G. 2010. Evidence Based werken in de GGZ. Methodisch werken als oplossing. 2010. Bohn stafleu van Loghum. Zeist.
- Trimbos-instituut. 2005. Multidisciplinaire richtlijn voor diagnostiek en behandeling van ADHD bij kinderen en jeugdigen. Utrecht: Trimbos-Instituut, 2005.
- Vink, M., Wamel, van A. 2007. Landelijk Basisprogramma ADHD bij kinderen en jeugdigen. Utrecht: Trimbos-instituut.
- Waelen, C.M.B.H.; Boer, J de. 2011, Kinderen met ADHD, wat kosten ze? Stichting Kind & Gedrag. Bergen.
- Wigal, S.B., Wigal, T.L. 2007. Special considerations in diagnosing and treating attention-deficit/hyperactivity disorder. *CNS Spectrums*. 2007; 12(6 suppl 9):1-16.
- Wilens, T.E., Spencer, T.J. 2010. Understanding attention-deficit/hyperactivity disorder from childhood to adulthood. *Postgrad Med*. 2010; 122(5):97-109
- Wilens, T.E., Spencer, T.J., Biederman, J. 1995. Are ADHD and the psychoactive substance use disorders really related? *Harv Rev Psychiatry*. 1995 sept-oct; 3(3):160-2.
- Willems et al. 2011. Jeugd-GGZ: Investeren in de toekomst! Ambities voor 2011-2014. GGZ Nederland. Publicatienummer 2011-369. Utrecht
- Veldhuijzen van Zanten-Hyllner, M.L.L.E.. *Kamerbrief voortgangsrapportage Hervorming Langdurige Zorg*. Den-Haag: VWS, 2011.
- Virenso. 2011. AWBZ en zorgverzekeringswet. Virenso, specialisten in ouderengeneeskunde. [Internet] <http://www.verenso.nl/wat-doen-wij/praktijkvoering/financiering/awbz-en-zorgverzekeringswet/> Accessed December 29, 2011.
- Vliet, P van. 2011. Psychiatrische problematiek dreigt te disfunctioneren. DSM-V: meer problemen voor iedereen. *Deviant*. September 2011 nr. 70
- Zuckerman, J. Diamond, G. Shuper, A. 2011. A triangular model for diagnosis and management of preschool ADHD: symptom or syndrome? *Journal of child neurology*. 2011: 1-6.
- Zwaanswijk, M. 2005. Pathways to care: Help-seeking for child and adolescent mental health problems. Universiteit Utrecht

APPENDIX

Appendix 1 – DSM-IV criteria for ADHD

Appendix 2 – Criteria of Multidisciplinary guideline Trimbos

Appendix 3 – Questionnaire

Appendix 4 – ADHD clinics in the Netherlands

Appendix 5 – Flowcharts of participated ADHD clinics

Appendix 6 – SWOT analysis

APPENDIX 1 – DSM-IV CRITERIA FOR ADHD

DSM-IV Criteria for ADHD

I. Either A or B:

- A. Six or more of the following symptoms of inattention have been present for at least 6 months to a point that is disruptive and inappropriate for developmental level:**

Inattention

1. Often does not give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
2. Often has trouble keeping attention on tasks or play activities.
3. Often does not seem to listen when spoken to directly.
4. Often does not follow instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions).
5. Often has trouble organizing activities.
6. Often avoids, dislikes, or doesn't want to do things that take a lot of mental effort for a long period of time (such as schoolwork or homework).
7. Often loses things needed for tasks and activities (e.g. toys, school assignments, pencils, books, or tools).
8. Is often easily distracted.
9. Is often forgetful in daily activities.

- B. Six or more of the following symptoms of hyperactivity-impulsivity have been present for at least 6 months to an extent that is disruptive and inappropriate for developmental level:**

Hyperactivity

1. Often fidgets with hands or feet or squirms in seat.
2. Often gets up from seat when remaining in seat is expected.
3. Often runs about or climbs when and where it is not appropriate (adolescents or adults may feel very restless).
4. Often has trouble playing or enjoying leisure activities quietly.
5. Is often "on the go" or often acts as if "driven by a motor".
6. Often talks excessively.

Impulsivity

1. Often blurts out answers before questions have been finished.
 2. Often has trouble waiting one's turn.
 3. Often interrupts or intrudes on others (e.g., butts into conversations or games).
- II. Some symptoms that cause impairment were present before age 7 years.
- III. Some impairment from the symptoms is present in two or more settings (e.g. at school/work and at home).
- IV. There must be clear evidence of significant impairment in social, school, or work functioning.
- V. The symptoms do not happen only during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder. The symptoms are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

Source: DSM-IV

APPENDIX 2 – CRITERIA OF MULTIDISCIPLINARY GUIDELINE TRIMBOS

Criteria of the multidisciplinary guideline of Trimbos for the diagnosis, health care providers and treatment

Diagnostic process

The diagnostic process includes the family and the school situation with information from more than one source. The existence of co-morbidity should be carefully investigated. The diagnosis requires both medical and psychosocial expertise. The diagnostic process is based on the occurring problems during the development of the child. The classification of the problem description is assessed on formal criteria of a classification system, like the DSM-IV (Trimbos-Instituut, 2005). The diagnostic process should include the following elements:

- Complaints inventory for parents and teachers
- Somatic investigations
- Neuropsychological
- Orthodidactic research
- Family diagnostic.

First, the complaints inventory as element of the anamnesis should include observations and interviews according fixed protocols in addition to anamnestic interviews. A structured inventory, supported by questionnaires for teachers and parents is recommended. Second, somatic research is suggested as part of the diagnostic process to exclude somatic disorders as cause of ADHD. Third, neuropsychological research is indicated when learning difficulties and doubts about the intelligent level occur. Fourth, orthodidactical research is recommended as element of the diagnostic process in ADHD. Moreover, orthodidactical research and neuropsychological research should be combined. Finally, a family assessment is recommended as inventory of the process (Trimbos-Instituut, 2005).

Health care providers

The guideline recommends that after signaling the ADHD characteristics by parents or teachers, the diagnosis should in general be performed in a multidisciplinary team. The involved caregivers in the diagnosis of ADHD should be qualified based on knowledge and experience as described in the competency matrix (Trimbos-Instituut, 2005). Practitioners may have knowledge and experience in several cells of the competency matrix, however in general not all competencies are covered by all practitioners. This asked specific knowledge and skills of different professions and specialists. For that reason is the process of signaling, diagnosis and treatment of ADHD probably multidisciplinary in nature, including different caregivers and

professionals with different competencies and different responsibilities (Trimbos-Instituut, 2005).

Treatment process

The treatment of ADHD is in general based on two pillars: medication and behavioral/psychosocial treatment. The role of the school is important during the treatment. Furthermore is good coordination between practitioner, parents and school essential. Next to the parents are often also other family members, like grandfather, grandmother, brothers and sisters and friends involved in the treatment process (Trimbos-Instituut, 2005). The treatment of ADHD should be focused on the following goals:

- Information and psychoeducation
- Control and reduce symptoms and stress factors
- Reduction of the consequences
- Improve/repair social functioning
- Prevention/elimination of chronicity

Below more information of the two pillars in the treatment process is given.

Medication

The effectiveness of several medicines is investigated, however, up to now no medicine results in cure. The guideline provides more insight in the possible medication forms for ADHD (Trimbos-Instituut, 2005).

Psychosocial interventions (in combination with medication)

Psychosocial interventions may be used as strategy to control problems with ADHD; however, they do not result in cure. The interventions (next to medication) can be used after the diagnosis and include psychoeducation; behaviour therapy and support focused on the parents, the teacher and the school; and non-pharmacological treatment of the child. Next, the (recommended) psychosocial interventions for the parents, teachers and child are described.

Parents

Psychoeducation to parents is seen as an essential first step in the treatment of children with ADHD. It is recommended that psychoeducation is in line with the information which is already known by the parents. Behaviour therapy focused on parents – individual or in a group – is recommended for the treatment of impulsive behaviour and comorbid behaviour problems of the child. Moreover, it is suggested that parental training programs should as much as possible

focused on specific age groups (toddler, primary school, adolescents) (Trimbos-Instituut, 2005).

School

An agreement with the parents to inform the school about the diagnosis is recommended. When the treatment takes generally place in the home situation, the school should be informed. Further, psychoeducation for teachers is an essential first step in the treatment of children with ADHD at school. An individual plan for the problems in different school situations that is in line with the interventions of the child is recommended. The plan should be developed in cooperation with the child and the parents.

Child

The psychosocial standard treatment of children with ADHD is based on the structuring of the environment of the child via parents and teacher. Interventions with the child are additional. Psychosocial interventions for the child are:

- Self-regulation training
- Social skills training
- Combination with parent training
- Day care
- Care in another environment
- Creative therapy
- Psychomotor therapy
- Diet
- Alternative interventions.

Psychosocial interventions with the child are not standard recommended, but are seen in the context of the parent and/or teacher training. Self-regulation is only useful when the child encounters problems in functioning at home, school and in a social context, and the interventions focused on the parents or teacher seems insufficient effective. Social skills training is only recommended when the social problems of the child are based on a general skills shortage. When problems are severe or complex, day care may be considered. Further is the provision of another environment a consideration. When motoric development problems are recognized during the anamnesis and during the research by a child psychologist, child psychiatrist, paediatrician and/or orthopedagogue it is recommended to refer the child expendable to a child physiotherapist or psychomotor therapist. It is advisable to do controlled

research to the possible contribution of creative therapy to the treatment provision for children with ADHD. The prescription of diets and the potential contribution of creative therapy are in general not initiated in children with ADHD. Finally, alternative interventions are not standard recommended (Trimbos-Instituut, 2005).

APPENDIX 3 – QUESTIONNAIRE

OPTIMALIZATIE VAN ADHD POLI'S/CENTRA*

GEBASEERD OP HET VERSCHIL IN ORGANISATIE, BEHANDELPROCES EN GEHANTEERDE RICHTLIJNEN/PROTOCOLLEN

Deze vragenlijst is onderdeel van mijn afstudeerscriptie aan de Erasmus Universiteit Rotterdam. Ik combineer mijn afstuderen met een stageopdracht bij de firma Eli Lilly Nederland BV waar ik onderzoek doe naar ADHD poli's/centra in Nederland. Het onderwerp van het onderzoek is gericht op een vergelijking tussen een aantal ADHD-poli's/centra in Nederland gebaseerd op drie criteria. Namelijk de organisatie, het behandelproces en de gehanteerde richtlijnen/protocollen. Het doel is om inzicht te krijgen in het verschil met betrekking tot de gestelde criteria tussen de deelnemende poli's/centra en in welke mate zij zich nog zouden kunnen optimaliseren. De resultaten zullen teruggekoppeld worden naar de poli's/centra en kunnen mogelijk waardevol zijn voor de eigen organisatie.

In totaal bevat deze vragenlijst 37 vragen die zowel open als gesloten van aard zijn en bestaat uit drie onderdelen. Het beantwoorden van de vragen kost ongeveer 15 minuten van uw tijd en uiteraard zullen uw antwoorden met respect, voor u en uw organisatie, behandeld worden volgens de privacy verklaring van de firma Eli Lilly Nederland BV.

Mocht u verder nog vragen of opmerkingen hebben betreffende het onderzoek of deze vragenlijst, dan kunt u altijd contact opnemen door een email te sturen naar: schmidt_charlotte@lilly.com of te bellen naar 030-6025839.

**Definitie ADHD-poli/centrum: 1. Aanwezigheid van psychiater en/of kinderarts. 2. Aanwezigheid van ADHD-verpleegkundige/Psycholoog; 3. Minimaal 75% van de behandelingen is gericht op ADHD; 4. Verwijzing van huisarts, GGZ- instelling, kinderarts, psychiater; 5. Organisatie van de poli bestaat uit een diagnose-behandel traject; 6. Poli/centra heeft ADHD patiënten in de leeftijdsgroep 6-12 en 12-18 jaar.*

ALGEMEEN

1. Algemene gegevens van instelling/ziekenhuis

- a. Naam instelling/ziekenhuis:.....
- b. Naam ADHD poli/centrum:
- c. Plaats ADHD poli/centrum:
- d. Is de ADHD poli/centrum zelfstandig of valt deze onder een ziekenhuis?.....
- e. Heeft de instelling/het ziekenhuis meerdere locaties: Ja/nee
Zo ja, op welke locaties is nog meer een ADHD-poli/centrum:.....
- f. Datum (jaartal) oprichting instelling/ziekenhuis:.....
- g. Datum oprichting ADHD poli/centrum:.....
- h. Door wie (functie) is de ADHD poli/centrum opgericht:.....
- i. Omvang patiënten populatie op de ADHD poli:.....
- j. Op welke leeftijd(groep) richt de ADHD poli/centrum zich:.....
- k. Welk percentage van de patiënten populatie is ouder dan 12 jaar:.....
- l. Aantal aanmeldingen per jaar:.....
- m. Wachtijd tot intake/screening:.....

n. Wachtijd voor diagnose:.....

o. Wachtijd tot behandeling (na diagnose):.....

2. Wat is uw functie binnen de organisatie?

- Psychiater
- Kinderarts
- Verpleegkundige
- Psycholoog
- Anders, namelijk:.....

3. Behandelt u zelf zowel kinderen als adolescenten?

- Ja, zowel kinderen als adolescenten
- Nee, alleen kinderen
- Nee, alleen adolescenten
- Nee, geen van beide

4. Hoe lang bent u al werkzaam in deze organisatie?

Sinds.....

5. Hoe lang bent u al werkzaam op het gebied van ADHD?

Sinds.....

6. Bent u (onder andere) aangenomen door uw specialisatie/interesse in ADHD? (Hoe bent u hier terecht gekomen?)

- Ja, ik ben alleen werkzaam op het gebied van ADHD
- Nee, ik werkte hier al toen de ADHD poli opgericht werd.
- Anders, namelijk:.....

7. Bent u op meerdere locaties of instellingen/ziekenhuizen werkzaam?

Zo nee, ga door naar vraag 8.

Zo ja, beantwoord vraag a en b.

a. Waar bent u nog meer werkzaam?.....

b. Op welke locatie bent u het meest werkzaam?.....

ADHD-POLI/CENTRA

8. Kunt u zich vinden in de volgende definitie van een ADHD-poli/centrum? Waarom wel/niet?

.....

.....

.....

.....

.....

.....

.....



9. Hoeveel werknemers (kinderartsen, psychiaters, verpleegkundigen, psychologen, administratie) zijn er werkzaam op de ADHD poli/centrum?

Vul hieronder het aantal per specialisme in en geef waar nodig een toelichting.

..... kinder- en jeugdpsychiaters

Toelichting.....
.....
.....

..... kinderartsen

Toelichting.....
.....
.....

..... verpleegkundigen

Toelichting.....
.....
.....

..... psychologen

Toelichting.....
.....
.....

..... administratieleden (secretariaat)

Toelichting.....
.....
.....

..... anders, nl.....

..... anders, nl.....

10. Wat waren de drijfveren voor de oprichter om de poli op te zetten?

a. Wat was de aanleiding voor de oprichting van de ADHD poli/centrum?

.....
.....

b. Wat was de doelstelling van de organisatie toen zij de ADHD-poli/centrum oprichtte?

.....
.....

11. De volgende vragen gaan over wanneer de poli/centrum open is.

a. Hoeveel dagen in de week is de poli open? Streep de dagen weg dat de poli gesloten is.

Ma / di / wo / do / vr

b. Is de poli alleen in de ochtend, middag of de hele dag geopend?

Streep de dagdelen weg wanneer de poli gesloten is.

Ochtend / middag / hele dag

c. Als de poli open is, hoeveel uur per dag is de poli dan open?

..... uur

12. Wie verwijzen er door naar de ADHD-poli/centrum waar u werkzaam bent?

- Huisarts
- GGZ
- Kinderarts
- Kinder- en jeugdpsychiater
- Anders, namelijk:

13. Welk type patiënt wordt behandeld op de ADHD-poli/centrum?

- Enkelvoudig (alleen ADHD)
- Meervoudig (ADHD en comorbiditeit)

14. Hoe verloopt het diagnose-behandeltraject op de ADHD-poli/centrum?

Hierbij ook graag per onderdeel het specialisme van de behandelaar en de tijdsduur per onderdeel van het traject aanduiden (dmv: screening/intake - diagnose - start behandeling).

.....
.....
.....
.....

15. Wordt de intake/behandeling opgedeeld in leeftijdsgroepen?

Zo ja, beantwoord vraag a, b en c

Zo nee, beantwoord vraag c

a. Hoe worden de groepen geclassificeerd?

.....
.....

b. Zijn er bepaalde behandelaren/teams voor elke groep?

.....
.....

c. Denkt u dat opdeling in leeftijdsgroepen beter is? Waarom wel/niet?

.....
.....

16. Vindt u de werkwijze van de ADHD-poli/centrum *beter/vergelijkbaar/slechter/geen mening* dan het reguliere behandeltraject voor het diagnosticeren van ADHD? En waarom?

Streep weg wat van toepassing is.

.....
.....
.....
.....

RICHTLIJNEN / PROTOCOLLEN

De volgende vragen hebben betrekking op de gehanteerde richtlijnen en protocollen in de ADHD poli/centrum. Vraag 17 tot 24 gaan specifiek over de richtlijnen, vraag 25 tot 32 gaan specifiek over de protocollen.

Def. **Richtlijn**: Een richtlijn is een document met systematisch ontwikkelde aanbevelingen om zorgverleners en patiënten te helpen bij beslissingen over passende zorg in specifieke situaties. Of te wel, hoe iets gedaan kan worden.

Def. **Protocol**: Een protocol is een document dat tot doel heeft zorgverleners te ondersteunen bij het uitvoeren van zorginhoudelijke handelingen, met andere woorden het geeft aan hoe een handeling uitgevoerd kan worden. Een protocol is specifiek, lokaal (gericht op instellingsniveau), bevat voorschriften en is veelal afgeleid van een richtlijn. Of te wel, hoe iets gedaan moet worden.

RICHTLIJNEN

17. Wordt er een *bestaande richtlijn* gebruikt in de ADHD-poli/centrum waar u werkzaam bent?

Zo nee, ga door naar vraag 24

Zo ja, beantwoord vraag a en b.

a. Welke richtlijn(en):.....

b. Sinds wanneer wordt deze gebruikt:

18. Wordt deze richtlijn door u toegepast in de dagelijkse behandeling voor ADHD in de poli/centrum? En in welke mate?

.....

19. Wordt de gehanteerde richtlijn op de poli/het centrum toegepast op *alle* patiënten?

Dus kinderen (6 – 12 jaar) en adolescenten (12 - 18 jaar).

- Ja, zowel kinderen als adolescenten.
- Nee, alleen kinderen.
- Nee, alleen adolescenten.

20. Vindt u de gehanteerde richtlijn geschikt voor beide patiëntengroepen (vraag 19)?

Waarom wel/niet?

Ja / nee, omdat.....

21. Hoeveel procent van de huidige richtlijn gebruikt u denkt u ongeveer in de behandeling op de ADHD-poli/centrum?

- 0 – 25 %
- 25 – 50 %
- 50 – 75%
- 75 – 100%

Toelichting:.....

22. Vindt u dat de huidige richtlijn voldoende vrijheid biedt om de patiënt (zowel kind als adolescent) adequaat te kunnen behandelen?

Ja / nee, omdat.....

23. Welke aspecten vindt u essentieel in de huidige richtlijn die gebruikt wordt op de ADHD-poli?

.....
.....

24. Denkt u dat het beter is om onderscheid te maken voor de behandeling van ADHD bij kinderen (6-12 jaar) en adolescenten (12-18 jaar)? Bijvoorbeeld door twee *verschillende* richtlijnen te gebruiken of door meer aandacht te besteden aan deze twee groepen in de huidige richtlijn.

Ja / nee, omdat.....

.....
.....

PROTOCOLLEN

25. Wordt er een protocol (draaiboek/stroomschema's/programma) gebruikt op de ADHD-poli/centrum?

Zo nee, ga naar vraag 33.

Zo ja, kunt u vertellen waarom dit protocol is geïmplementeerd, waar deze afwijkt t.o.v. de normale richtlijn en waar het protocol op gebaseerd is?

.....
.....
.....
.....

26. a. Sinds wanneer wordt dit protocol gebruikt op de ADHD-poli/centrum?.....

b. Is het protocol gedurende het bestaan van de poli/centrum al vaker aangepast/veranderd?

Zo nee, ga door naar vraag 27.

Zo ja, beantwoord vragen c,d,e.

c. Zo ja, door wie?.....

d. Zo ja, op verzoek van wie?.....

e. Zo ja, hoe vaak per jaar?.....

28. Hoeveel procent van het protocol gebruikt u denkt u ongeveer in de behandeling op de ADHD-poli/centrum?

- 0 – 25 %
- 25 – 50 %
- 50 – 75%
- 75 – 100%

Toelichting:.....

29. Worden het protocol op de poli/het centrum toegepast op alle patiënten?

Dus kinderen (6 – 12 jaar) en adolescenten (12 - 18 jaar).

- Ja, zowel kinderen als adolescenten.
- Nee, alleen kinderen.
- Nee, alleen adolescenten.

Bij nee: op wat voor manier wordt er onderscheidt gemaakt?

.....
.....

30. Vindt u het gehanteerde protocol geschikt voor beide patiëntengroepen (van vraag 26)?

Waarom wel/niet?

Ja / nee, omdat.....

.....
.....

31. Vindt u dat het huidige protocol voldoende vrijheid biedt om de patiënt (zowel kind als adolescent) adequaat te kunnen behandelen?

Ja / nee, omdat.....

.....
.....

32. Welke aspecten vindt u essentieel in het protocol die gebruikt wordt op de ADHD-poli/centrum?

.....
.....

33. Denkt u dat het beter is om onderscheidt te maken voor de behandeling van ADHD bij kinderen (6-12 jaar) en adolescenten (12-18 jaar)? Bijvoorbeeld door twee verschillende protocollen te gebruiken of door meer aandacht te besteden aan deze twee groepen in het huidige protocol.

Ja / nee, omdat.....

.....
.....

34. Mocht de instelling/ziekenhuis zowel een protocol als een richtlijn gebruiken, welke vindt u het meest bruikbaar? En welke acht u het meest geschikt voor adolescenten? En waarom?

.....
.....

35. Kent u de aanbevelingen van het Kenniscentrum voor kinder- en jeugdpsychiatrie? Zo ja, worden deze toegepast en vindt u deze relevant?

.....
.....

36. Wat zou u graag anders zien in de huidige richtlijnen en/of protocollen die gebruikt worden op de ADHD-poli om de behandeling (van adolescenten) meer gericht te maken?

.....
.....

37. Heeft u verder nog opmerkingen of/en aanmerkingen?

.....
.....

Bedankt voor uw tijd!

APPENDIX 4 – ADHD CLINICS IN THE NETHERLANDS

1	ADHD-poli Assen
	Beilerstraat 197
	9401 PJ Assen
	(0592) 33 42 85.
	http://www.ggzdrenthe.nl/index.php?pageID=1830
2	ACCARE
	Javastraat 10
	9401 KZ Assen
	(0592) 37 93 00
	http://www.accare.eu/qontex/online/cluster_assen.asp
3	St. Jans gasthuis Weert
	Vogelsbleek 5
	6001 BE Weert
	0495 - 57 21 00
	http://www.sjgweert.nl/patienten/afdelingen-en-specialismen/adhd-poli.html
	http://www.jongcentraal.nl/bsk/vieworga.asp?org_guid=685345B6-D57F-45CD-A1C8-18975E721800
4	Jonx Polikliniek Delfzijl
	Jachtlaan 52
	9934 JD Delfzijl
	(0596)649191
	http://www.jonx.nl/Zorgfuncties/ADHDpolikliniek/Pages/default.aspx
	secretariaatjonxdelfzijl@mentis.nl
5	Lucertis
	Locatie Beverwijk
	Zeestraat 43, Beverwijk
	Postadres Postbus 500, 1940 AM Beverwijk
	(0251) 27 64 00
	http://www.lucertis.nl/2582/lucertis_inprintfolder_ADHDpoli_intake.pdf
	info@lucertis.nl
6	ADHD-Polikliniek Helmond
	Wesselmanlaan 25A
	5707 HA Helmond
	0492 - 84 80 00
	http://www.ggzoostbrabant.nl/behandeling/adhd-polikliniek
	helmond@ggzoostbrabant.nl
7	ADHD-Polikliniek Boxmeer/Helmond

	Loerangelsestraat 1a
	5831 HA Boxmeer
	0485 - 84 72 50
	http://www.ggzooostbrabant.nl/behandeling/adhd-polikliniek
	info@ggzlvc.nl
8	Doctors4Kids
	Bartokweg 161
	1311 zx Almere
	036 548 21 60
	http://www.diagnostischcentrum.com/media/upload/folder/D4K%20adhd%20folder(1).pdf
	adhd@doctors4kids.nl
9	St. Elisabeth Ziekenhuis
	Postbus 90151
	5000 LC Tilburg
	Hilvarenbeekseweg 60
	5022 GC Tilburg
	013-539 13 13
	http://www.elisabeth.nl/algemene_onderdelen/service_functies/nieuws/@95282/betere_adhd_diagnose/
13	GGZ ingeest (Vumc)
	Academische ADHD polikliniek
	Overschiestraat 57
	Amsterdam
	(020) 788 5600.
	http://www.ggzingeest.nl/thema/verwijzers/5542666/ADHD/
14	De Jutters
	Dr. van Welylaan 2
	2566 ER Den Haag
	070 850 7 850
	http://www.dejutters.com/dejutters_com/38f329a5701dab5e243c5a70b0b96894.php
	dejutters@dejutters.com
15	De Jutters
	Prinsegracht 71
	2512 EX Den Haag
	070 850 7 500
16	De Jutters
	Prins Bernhardlaan 177
	2273 DP Voorburg
	070 850 7 400
17	De Jutters

	Leggelostraat 85
	2541 HR Den Haag
	070 850 7 600
18	De Jutters
	Westwaarts 15
	2711 AD Zoetermeer
	079 320 80 50
	http://www.dejutters.com/ufc/file2/dejutters_sites/svermeeren/6eefb3429d24dfa49fc8681c051d52db/pu/ADHD_feb_08.pdf
19	Ziekenhuis St. Jansdal
	Wethouder Jansenlaan 90
	Postbus 138, 3840 AC HARDERWIJK
	(0341) 463911
	http://www.stjansdal.nl/misc/showFile.aspx?File=5fcbceff5f733d231520c1fd295d89845996e7d364b2cf9058b7494ba07044d52708bee17b626f63622f29d42822fc40
	afsprakenbureau@stjansdal.nl
20	RCKJP / GGZ Centraal - Fornhese
	Schapenkamp 110
	Postbus 2067
	1200 CB Hilversum
	035 6260243
	http://www.ggzcentraal.nl/clienten/kinderen-en-jongeren/rckjp/polikliniek-adhd
	communicatie@ggzcentraal.nl
21	Maxima Medisch Centrum
	Locatie Veldhoven
	De Run 4600
	5500 MB Veldhoven
	(040) 888 82 70
	http://www.mmc.nl/content/download/64767/453224/file/010.262_03_11%20WEB%20%20ADHD%20poli%20voor%20kinderen.pdf
22	De Kijvelanden
	Het dok
	Kijvelandsekade 1
	Poortugaal
	(010) 503 12 12

23	Karakter - Tornadopoli
	Reinier Postlaan 12
	6525 GC Nijmegen
	024 351 22 22
	http://www.karakter.com/karakter_nl/acc7cb1ad0a91021cdd498c54f513c8d.php
	http://www.karakter.com/karakter_nl/751d3bc4c1119e5dfedf51c330c52be1.php
	info.nijmegen@karakter.com
24	TweeSteden Ziekenhuis
	ADHD centrum Midden-Brabant
	TweeSteden ziekenhuis, polikliniek Kindergeneeskunde
	Dr. Deelenlaan 5
	5042 AD Tilburg
	013 - 465 55 75
	http://www.tweestedenziekenhuis.nl/script/Template_SubsubMenu.asp?PageID=1240
	kindergeneeskunde@tsz.nl
25	de Gravin - Centrum voor ADHD
	Reinier de Graafweg 7a, 2625 AD Delft
	Postbus 396, 2600 AJ Delft
	015-2607607
	http://www.ggz-delfland.nl/portal/page?_pageid=33,3807&_dad=portal&_schema=PORTAL
26	GGZ Breburg + Amphia ziekenhuis
	Hebben poli 1 a 2 keer in de week
	Langendijk 75 Breda
	076-5955000
	http://www.ggzbreburg.nl/nl-nl/Behandelaanbod/Centrum%20Jeugd/ADHD.aspx
27	Yulius
	Hellingen 21
	3311 GZ Dordrecht
	088 4050600
	http://www.yulius.nl/overstijgend-menu/contact/locaties-en-bezoektijden.html
	a.vanderkroef@yulius.nl
28	Yulius
	Touwbaan 11
	4205 AB Gorinchem
	0183 65 41 23

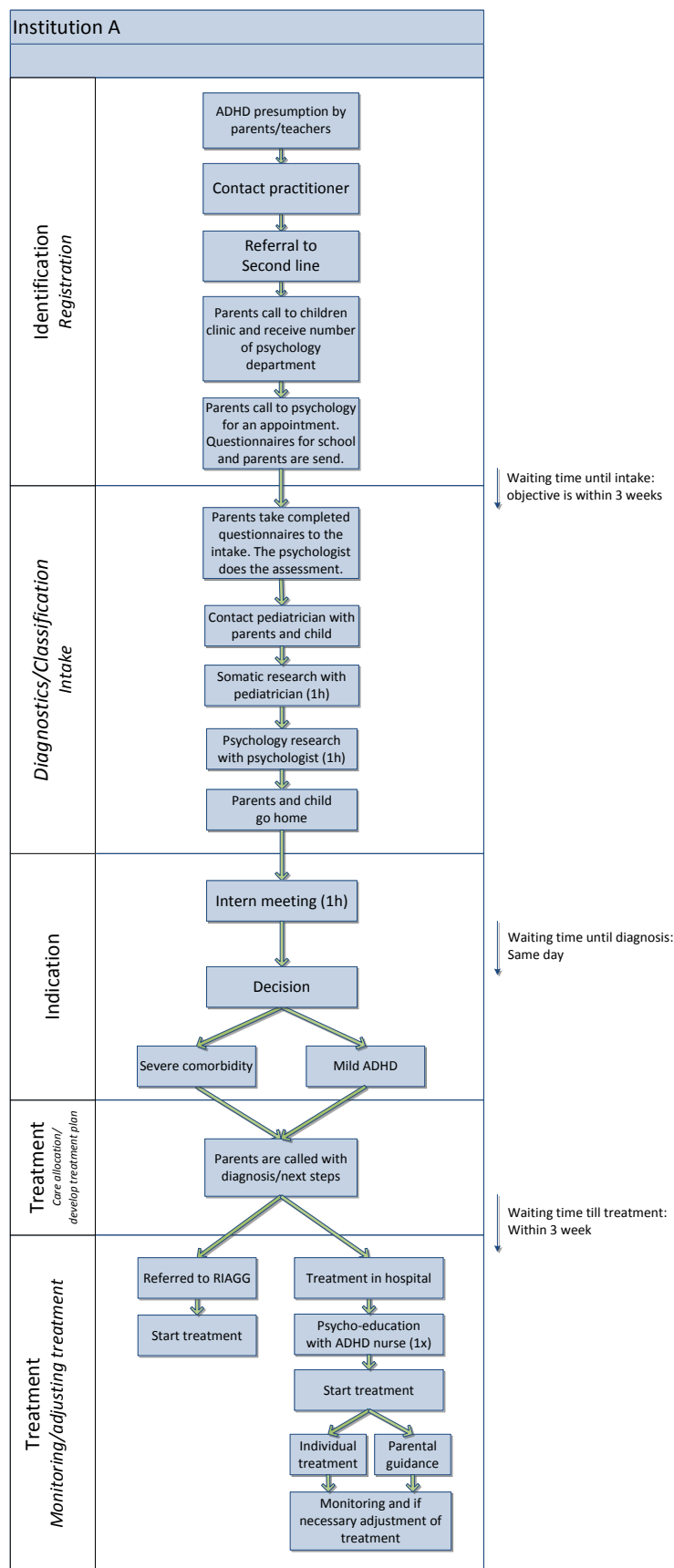
29	Triversum
	Polikliniek Alkmaar
	Kees Boekestraat 5
	1817 EZ Alkmaar
	072 514 03 61
	http://www.triversum.nl/smartsite.shtml?id=100223
30	Bronovo
	Bronovolaan 5
	2597 AX Den Haag
	070 - 312 41 41 . 0703124116
	http://www.bronovo.nl/Bronovo/nl-NL/bronovo/Patienten+en+bezoekers/Contact/informatie@bronovo.nl
31	Altrecht
	Altrecht Jeugd
	Nieuwe Houtenseweg 2
	3524 SH Utrecht.
	030-280 93 11
	http://www.altrecht.nl/eCache/INT/53/465.html
32	IMH Centrum Utrecht
	Nieuwe Houtenseweg 2
	3524 SH Utrecht
	(030) 280 93 00
	imh-centrum@altrecht.nl
	http://altrecht.nl/eCache/INT/52/984.html
33	Emergis - Ithaka
	Oostmolenweg 101
	4481 PM Kloetinge
	0113 26 70 00
	http://www.emergis.nl/locaties
	emergis@emergis.nl
34	Alysis zorggroep
	Ziekenhuis Zevenaar
	Hunneveldweg 14a
	6903 ZN Zevenaar
	http://www.rijnstate.nl/web/Nieuws/Leer-en-gedragpoli-wordt-ADHDteam.htm
35	Alysis zorggroep
	Poli Zuid
	Marga Klompélaan 6
	6836 BH Arnhem

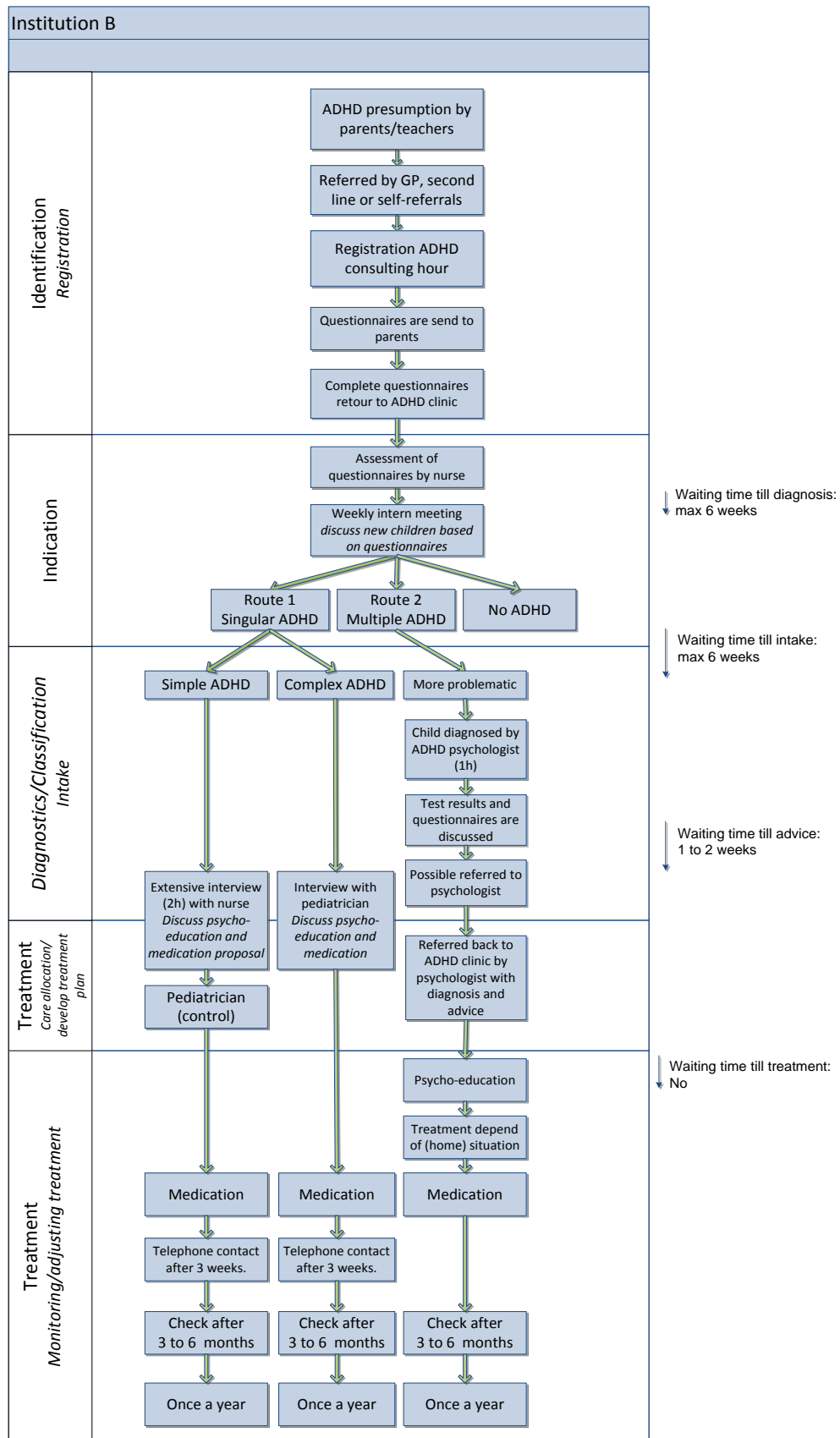
36	Alysis zorggroep
	Ziekenhuis Rijnstate
	Wagnerlaan 55
	6815 AD Arnhem
	088-0057782
37	Reinier van Arkel groep
	Hinthamerstraat 209
	5211 MN 's-Hertogenbosch
	(073) 658 65 86
	www.herlaarhof.nl
	http://www.herlaarhof.nl/Flex/Site/Page.aspx?PageID=18168&Lang=NL
38	Herlaarhof
	Boxtelseweg 32
	Postbus 10150
	5260 GB VUGHT
	(073) 658 53 33
	http://www.herlaarhof.nl/Flex/Site/Download.aspx?ID=6347
39	Herlaarhof
	Platanenlaan 26a
	Postbus 32
	5500 AA VELDHOVEN
	(040) 290 36 66
40	Herlaarhof
	Brevierpad 1
	5709 AD HELMOND
	(0492) 34 99 50
41	Herlaarhof
	Schadewijkstraat 8
	5348 BC OSS
	(0412) 65 34 53
42	Herlaarhof
	Brevierpad 1
	5709 AD HELMOND
	(0492) 34 99 50

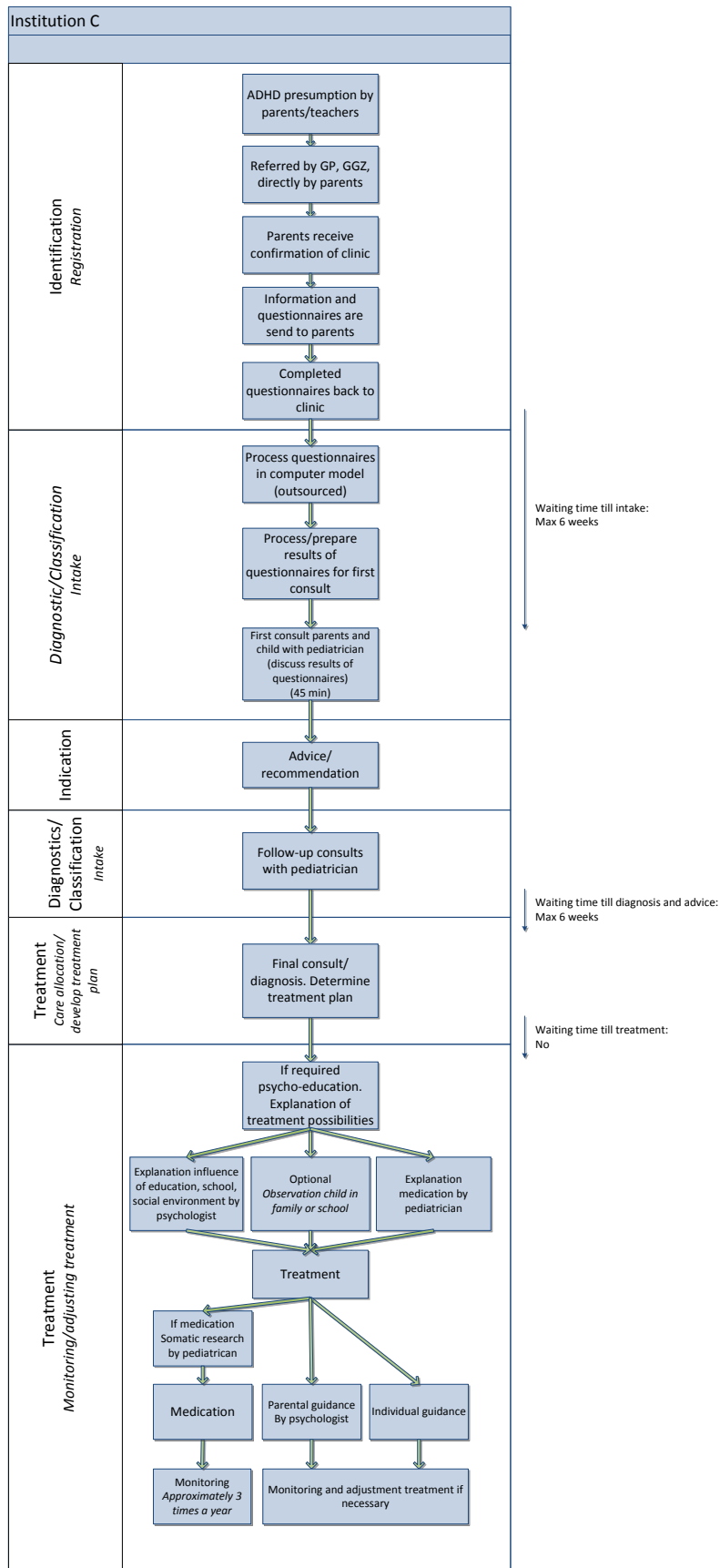
43	Alles kits
	Cypruslaan 410
	3059 XA
	Rotterdam
	0031629284850
	http://alleskits.nl/contact.html
	info@alleskits.nl
44	Rivierenland ziekenhuis
	President Kennedylaan 1, 4002 WP Tiel
	Postbus 6024, 4000 HA Tiel
	0344 - 67 4046
	http://www.zrt.nl/index.php?page=27&profilepage=1060
45	Gelderse Vallei
	Willy Brandtlaan 10
	6716 RP Ede
	0318 434343
	http://www.geldersevallei.nl/291/contact-en-locatie-kinderdagverpleging
46	De Bascule
	Postbus 303
	1115 ZG Duivendrecht
	(020) 890 19 00
	info@debascule.com
	www.debascule.com
47	UMCG
	Universitair Centrum Psychiatrie
	T.a.v. De Balie CC30
	Postbus 30.001
	9700 RB Groningen
	0503612008
	http://www.umcg.nl/nl/umcg/afdelingen/universitair_centrum_psychiatrie/Patienten/Polikliniek/bezoek/PolikliniekADHD/Pages/default.aspx
48	GGZ Rivierduinen
	Duin- en Bollenstreek
	Schimmelpenninckstraat 10
	2221 EP Katwijk
	071 890 66 77
	http://www.rivierduinen.nl/templates/Content.aspx?PageID=5188

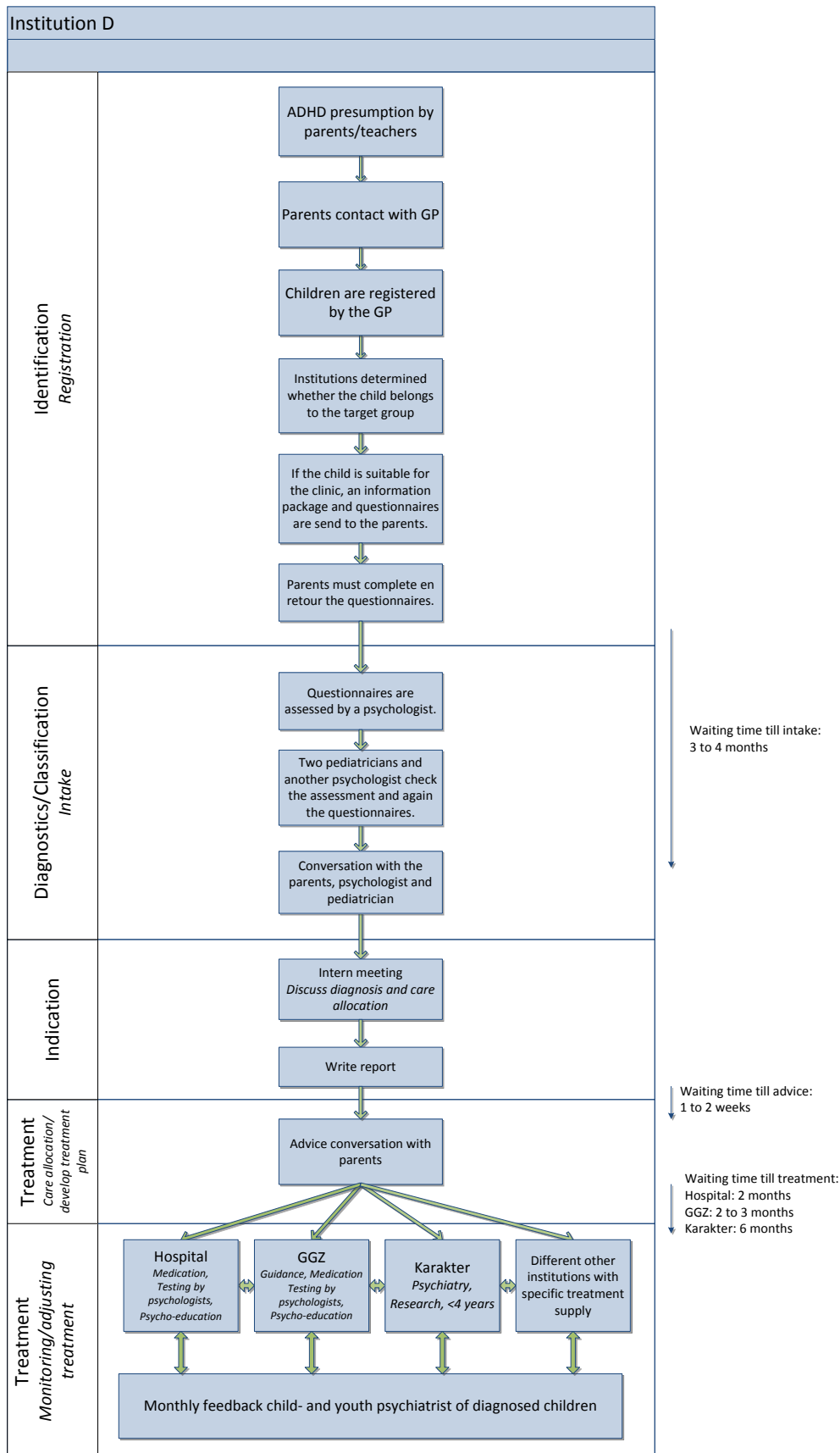
49	GGZ Rivierduinen
	Rusthofflaan 54
	2171 EX Sassenheim
	0252 502 166
50	GGZ-westfriesland
	Nieuwe Steen 44A, 1625 HV Hoorn.
	0229-577600
	info@adhd-hoorn.nl
51	The busy people
	Surinameplein 57 - 59
	1058 GN Amsterdam
	020 820 2660
	http://thebusypeople.nl/helpen-bij-adhd/jongeren/
52	ADHD-behandelcentrum
	Rietbaan 12
	2908 LP Capelle aan den IJssel
	010 - 463 77 66
	info@adhdbehandelcentrum.nl
	http://www.adhdbehandelcentrum.nl/
53	Maasstad ziekenhuis
	Maasstadweg 21
	3079 DZ Rotterdam
	(010) 291 19 11
	http://www.maasstadziekenhuis.nl/Deelspecialismen_kindergeneeskunde/ADHD

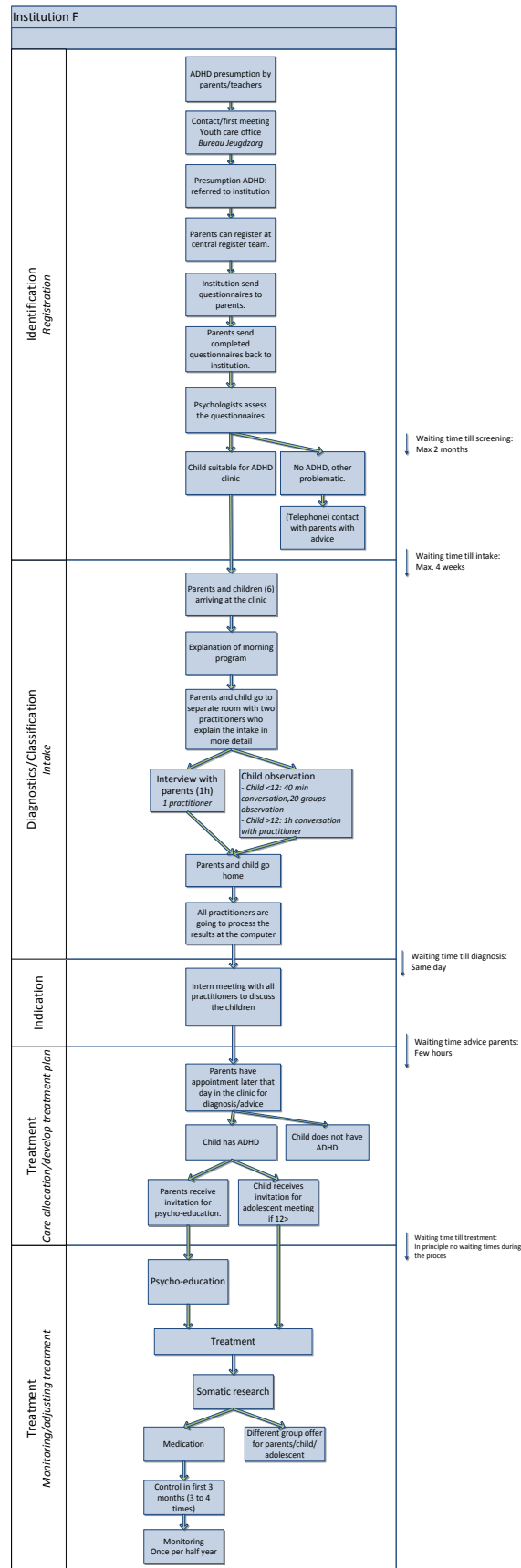
APPENDIX 5 – FLOWCHARTS OF PARTICIPATED ADHD CLINICS

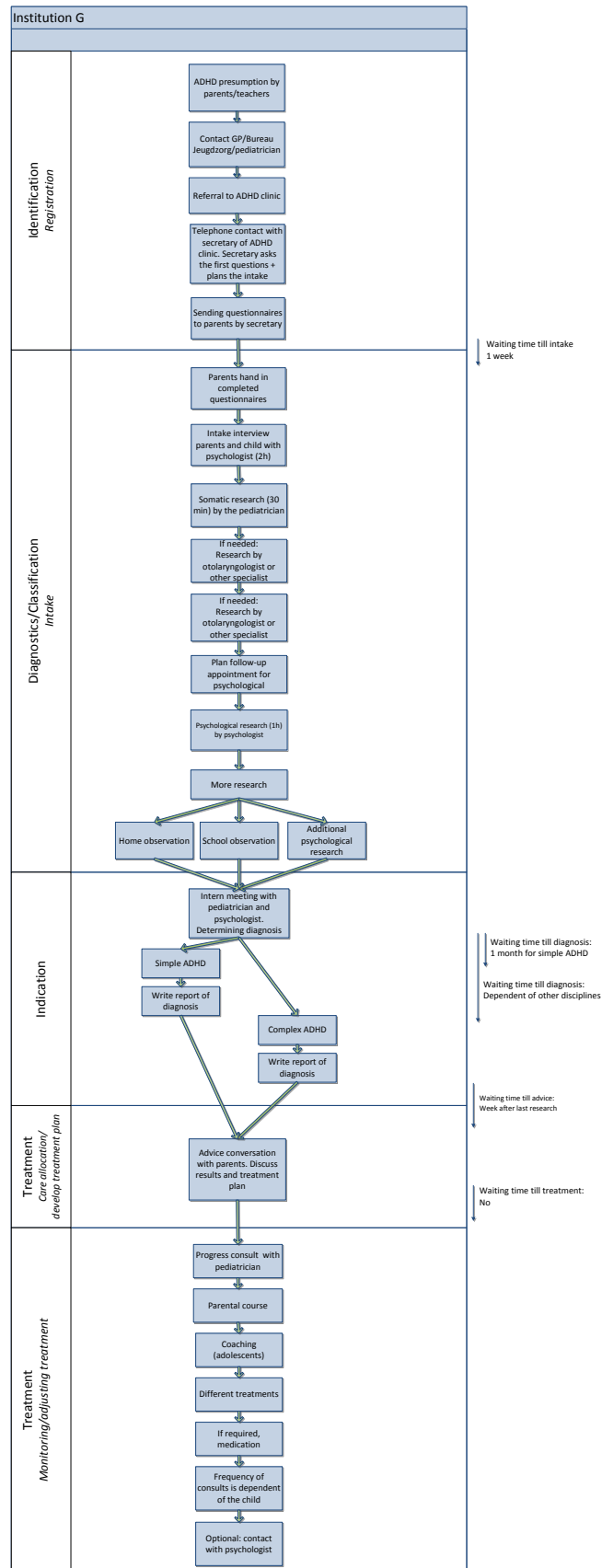


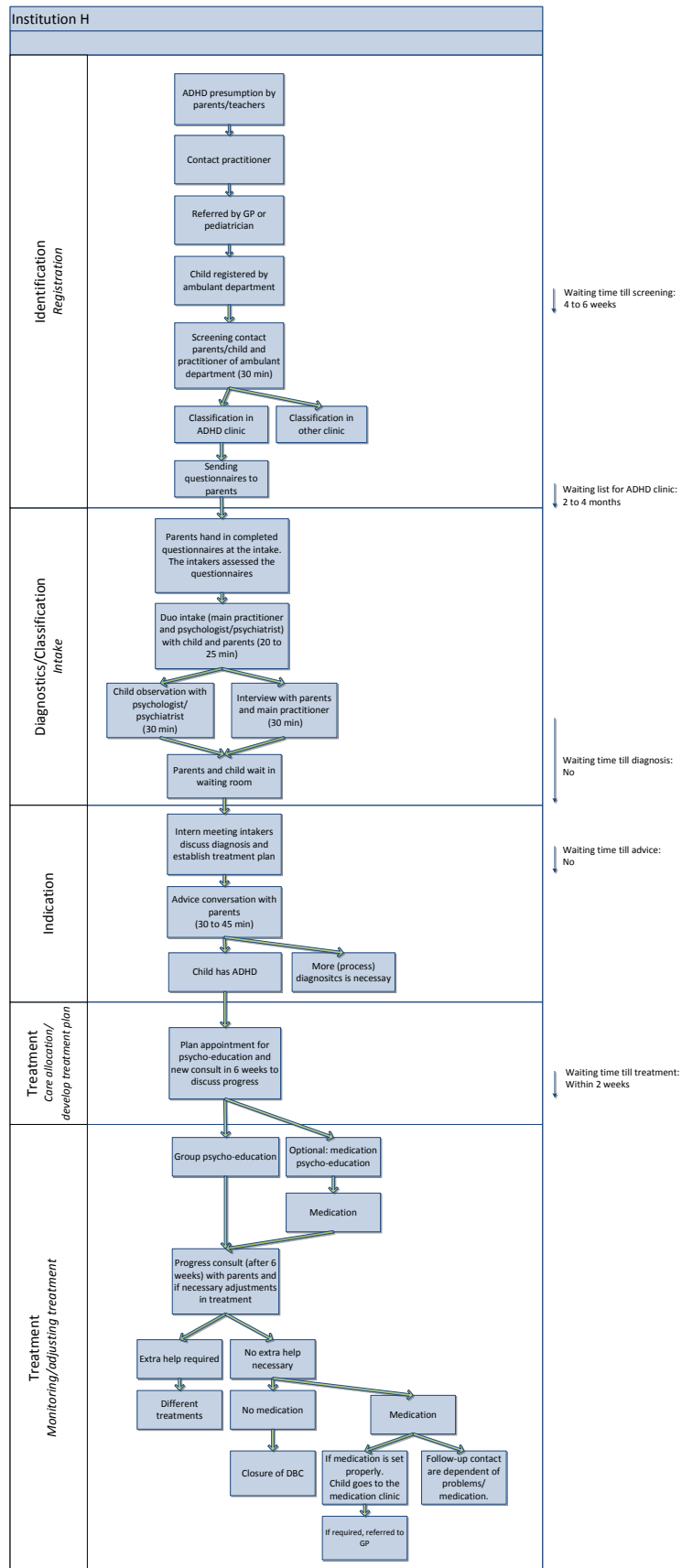


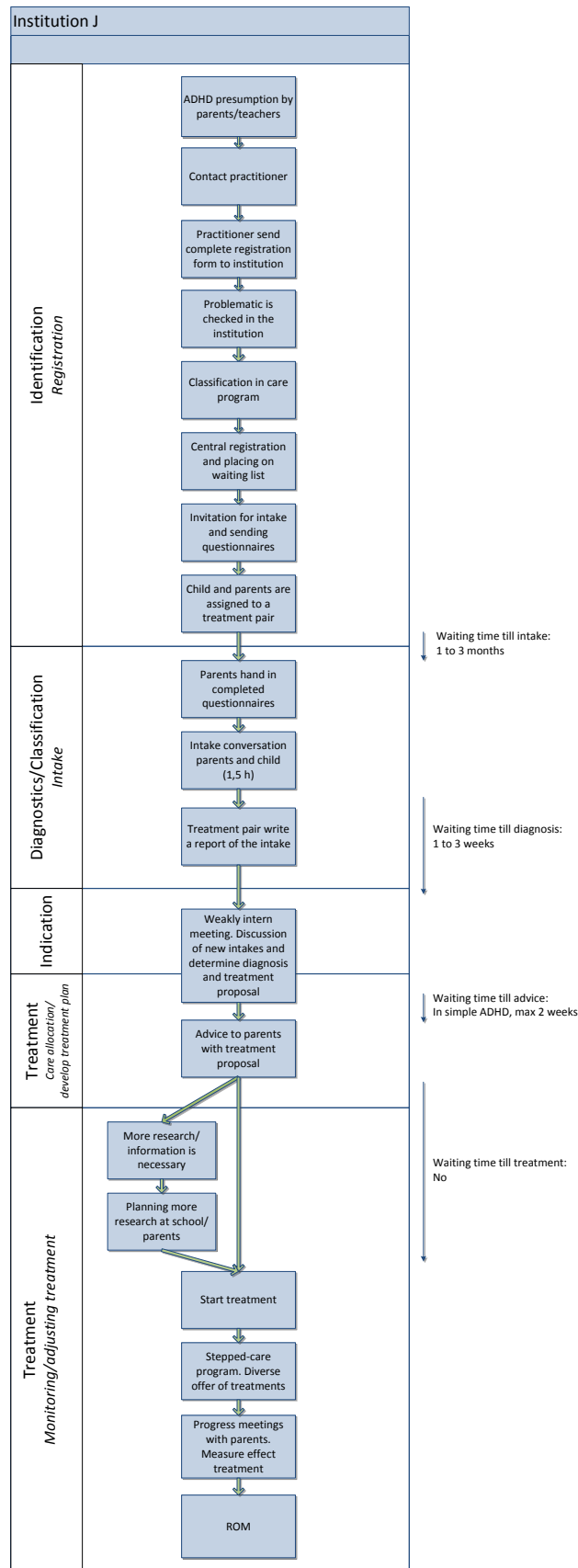


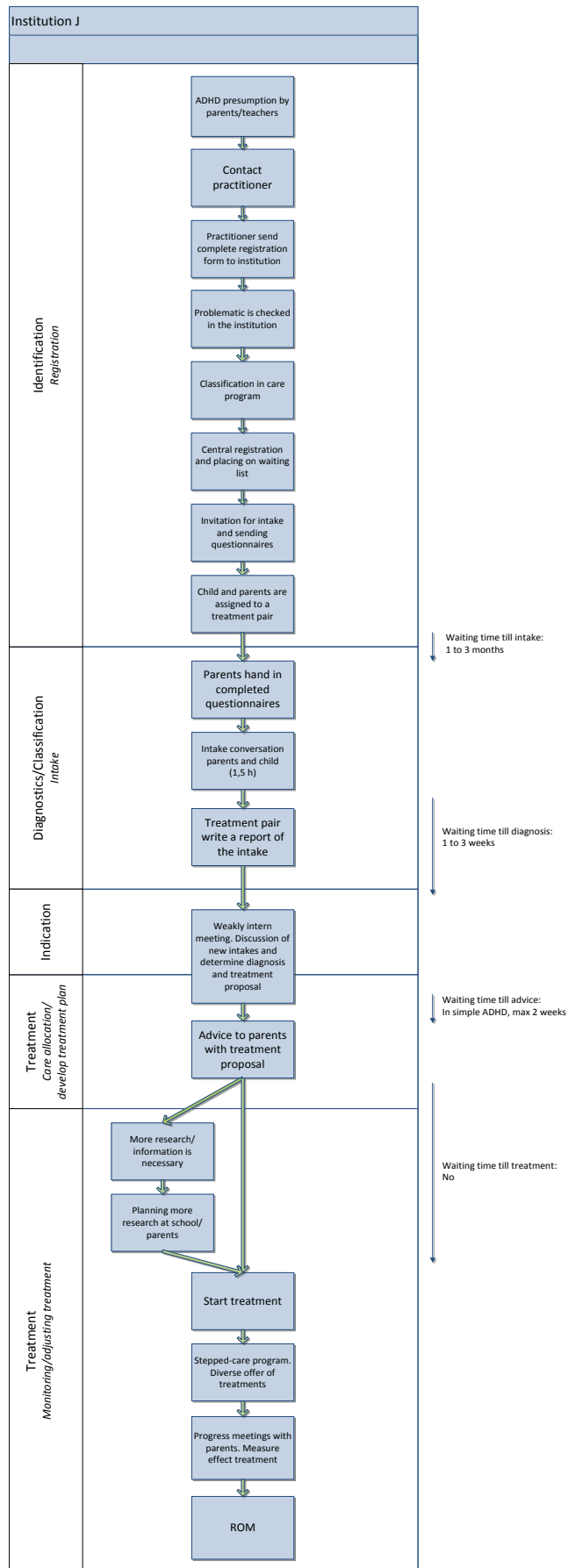












APPENDIX 6 – SWOT ANALYSIS

SWOT Analysis

Strengths		
Creation of a structured diagnosis and treatment process (o)	O	
Focus on support and guidance of the client	O	
Application of the multidisciplinary guideline	O	
Application of a protocol	O	
Sufficient freedom to treat patients adequately	O	
Treatment (party) conform the guideline	TP	
Multidisciplinary team	P	
Standard parental interview/meeting	TP	
Application of questionnaires for parents, teacher (and child)	TP	
Diagnostic performed in a multidisciplinary context	TP	
More than one involved psychiatrist	P	
Multidisciplinary meeting	TP	
Standard psychological research	TP	
Type of ADHD patient is both elementary and multiple	PP	
Several psychosocial interventions	TP	

Weaknesses		
Some patients directly contact the clinic (without referral from first line care)	O	
Questionnaire is main element of the diagnosis	TP	
Treatment starts in general directly after diagnosis	TP	
Waiting time for diagnosis	TP	
Likely to overlook disorders/problems (co-morbidity) due to fast diagnosis	TP	
Referral to other clinics if problems are to severe or complex	TP	
Too limited offer of psychological interventions	TP	
Diagnosis and treatment often not conform the guideline	O	
Insufficient qualified practitioners	P	
Waiting time for intake	TP	
Focus in general on medication	TP	

Opportunities		
More supply of psychological interventions	TP	
Recruitment of sufficient professionals and specialists	P	
Recognition of co-morbidity by education of first line	FP	
Education of more professionals	FP	
Research and determination of the most efficient diagnosis and treatment process	FP	
Due to requirements increase of quality of care	FP	

Threats		
Strictly formulated criteria/requirements of health care insurer	O, FP	
Diversity about the diagnosis and treatment of ADHD	-	
Budget restrictions	O, FP	
ADHD clinics which do not comply the set quality requirements, may no longer be contracted	FP	
Child-and youth psychiatrists, clinical psychologist and independent psychotherapists should do the treatment for 80% in second line mental health institutions	FP	
Growing role of municipalities	FP	
More critical health insurers about the supplied care	FP	
In lack of sufficient numbers of professionals it may not be feasible to meet the set requirements	FP	
Health insurers do not receive full compensation afterwards for all made cost for somatic research	FP	
Health insurance companies receive 100% compensation for the cost made by insured younger than 18 for mental health care	FP	

Type of characteristic legenda

- O Organization characteristic
- P Practitioners characteristic
- PP Patient Population characteristic
- TP Treatment Process characteristic
- FP Future Perspective characteristic

Organization type legenda

- Hospital
- GGZ
- ZBC
- GGZ + Hospital
- GGZ + ZBC
- Hospital + ZBC
- Some of the GGZ + Hospitals + ZBC
- All of the GGZ + Hospitals and ZBC