Coordinating Mental Health Care

A Comparative Case Study

Master Thesis

Extended Master Organization Studies

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January 15th, 2014
Tilburg

Coordinating Mental Health Care: A Comparative Case Study

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Abstract

In order to deal with demands of improved quality and cost reduction, mental healthcare organizations are forced to redesign their care process. Departments of mental healthcare organizations, first, redesigned the care they provide into care programs, followed by the care pathways, which provide a more detailed description of care. Besides providing several advantages, organizations need to be aware of the interdependencies between the care pathways and the possible risks these dependencies might cause. The goal of current research is to investigate how care pathways of several mental healthcare departments are coordinated in order to manage the dependencies between them. This goal leads to the research question: *How are care pathways coordinated at three departments within mental healthcare organization in the Netherlands?* The research question is answered by conducting a comparative case study. At two departments of GGzE and one department of GGz Breburg, employees are questioned through in-depth face-to-face interviews about the coordination practices performed at their department. This resulted in a description of coordination practices, using two dimension of coordination: the horizontal/vertical dimension and the programmed/non-programmed dimension. Comparing the coordination practices, presented how coordination at the departments occurred; if and how they changed over time; and what similarities and/or differences between the departments are. Findings indicate that each department coordinates in their own way, with the overall tendency to coordinate according to a horizontal and programmed practice. Based on the results of the research, some suggestions for future research are recommended. The paper advises organizations or departments managing dependencies within their process to include a technical system to support coordination and involve a supervisor to direct and guard coordination initiatives.

Key words: mental healthcare, coordination, care pathways, dependencies, supply chain, care program

Preface

When starting to write the master thesis, one knows a difficult time has begun. Matching the wishes of the organization to the demands of the university is a hard task to accomplish. The quest in finding the right research, with an interesting topic for all parties, including myself, was one of the first complications I faced. Writing the individual research proposal and accomplishing the actual thesis were the second and third challenges. It did not come easily, it asked a lot, but most of all, it provided an opportunity for me to develop my research skills, writing skills, and analytical capabilities. I faced some hardcore problems, like most master students do, problems before actually gathering the data, while searching for the cases to include in the study. I struggled during the formulation of the research proposal, and I struggled even more, when assembling enthusiastic and helpful departments to conduct this research at. Besides all the problems and difficulties, the thesis brought even more learning moments, happy moments, and proud moments. The result of all the hard work lies before you, and I'm proud to present the master thesis: Coordinating Mental Healthcare. It has been a good and developing experience.

It must be said, that without all the people I have met this last year, the research would have had no change of actually succeeding. All these people provided clarity in times of chaos. First of all, I want to thank Rob Pranger for all his extensive, critical, but most of all helpful feedback throughout the last year. I would like to thank Inge Bongers, my second supervisor, for all her new and refreshing ideas and the positivism with which she provided the critical notations. Next is Diana: thank you for providing answers and options during the search for the topic and question of research and just reading the paper over and over again. I want to thank all other colleagues of GGzE for helping me to understand the mental healthcare context, which made it able to present an interesting research. Gathering the departments to include in the research was not easy, thank you Kees, Inge, Joyce, Diana and Rianne for helping me in this process. Of course, I also want to thank the departments of Autism Adults and the Act-team of GGzE and the center of Autism of GGz Breburg. Frits, Geralde and Caroline, thank you for finding the time to answer my questions, and to find the cooperation of your colleagues to participate in the research. I want to thank Daan, for going through the same process with me, for never giving up, and for radiating peace throughout all highly-stressing situations. And at last, I want to thank my family and friends for being there for me, for believing in me and for dealing with my grumpiness throughout this year.

Marjolein Sengers
January 2014

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1. Introduction

Healthcare organizations are dealing with demands of efficiency and quality improvements as patients ask for a timely delivery of services, reduction of waiting times and other delays, while current economy asks for cost reductions (Aronsson, Abrahamsson & Spens, 2011; Joosten, Bongers & Janssen, 2009). Due to these demands, healthcare organizations started redesigning their care processes. First, the care programs were introduced, which identifies different parts in the care process of a specified target population (Joosten, Bongers & Meijboom, 2007). Care programs specify all possible intake, diagnosis and/or treatment options for a specific group of patients. Second, the care pathways were suggested. Compared to the care programs, they describe care more into detail. Looking at a specific diagnosis or treatment part of the healthcare process these pathways define the actions undertaken in order to provide care and the time needed to perform these actions (Joosten, 2012). Therefore, the answer to a patient's health care need can consist of several pathways, together forming the total chain of care (the care program) provided to the patient. Some healthcare organizations are designed in such manner that each department represents a specified target population. Therefore, the care delivered within each department corresponds with a care program. Figure 1 demonstrates the position of care programs and care pathways in total care processes of a healthcare organization.

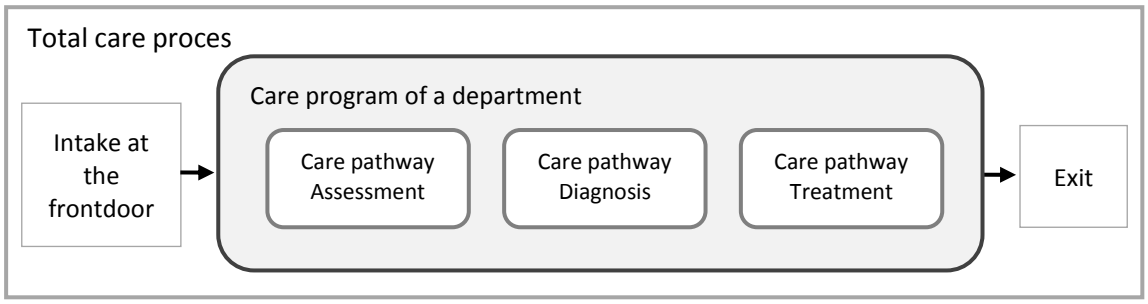


Figure 1. Example of the position of one care program, consisting of three care pathways. The focus of this research, is on the accentuated part; the care program of a department.

Dividing care programs into pathways can be compared to the supply chain approach (Joosten et al., 2007). Within this approach, an organizational process is separated into parts and the chain of different parts present the total process commenced to construct a product or service (Mentzer, DeWitt, Keebler, Min, Nix, Smith & Zacharia, 2001). Consideration is needed when the supply chain approach is applied in order to achieve process wide gains. Research has shown that improvements in singular parts of the process (like care pathways) do not necessarily lead to better performance within the whole process (e.g. within care programs) (Bahinipati, Kanda & Deshmukh, 2009). To realize process wide gains, an integrative and overall systems perspective is needed, which can be implemented through coordination (Lambert & Cooper, 2000; Mentzer et al., 2001).

The implementation of care pathways realized some benefits like reduction of uncertainty and complexity and even improved teamwork (Deneckere, Euwema, Van Herck, Lodewijckx, Panella, Sermeus, & Vanhaecht, 2012). The goal of care pathways in the service delivery process is to reduce waiting times and throughput times while maintaining or improving quality of the delivered care (Aronsson et al., 2011; Campbell, Hotchkiss, Bradshaw & Parteous, 1998; Vanhaecht et al., 2006). Researchers of care pathways have some concerns to the extent the goals and benefits of pathways can be realized (De Allegri, Schwarzbach, Loerbroks & Ronellenfitsch, 2011; Evans-Lacko, Jarrett, McCrone & Thornicroft, 2010; Grol & Grimshaw, 2003). One concern regards the successfulness of implementation of pathways. Some authors strongly advise involvement of different hierarchical levels of the organization during the implementation of pathways to guarantee success (Evans-Lacko

et al., 2010; Grol & Grimshaw, 2003). Another concern is the emergence of delays when one pathway achieves its goals, without comparable performance from other pathways, so gains throughout the care program are not realized (Aronsson et al., 2011). For example, when the diagnostics phase of a care program improves in throughput time (so more patients can be diagnosed in a shorter time frame), but the treatment phase does not match that speed, delays between diagnostics and treatment phase within the care program are likely to occur.

Mental healthcare organizations Stichting Geïntegreerde Geestelijke Gezondheidszorg Eindhoven en de Kempen (GGzE) and GGz Breburg have developed and implemented care pathways. These care pathways have been evaluated and improved, leading to gains in throughput time per pathway, but without special regard to outcomes at the level of the entire care program. Malone and Crowston (1994) state that the dependencies between parts of a process need to be managed in order to realize process wide gains, which can be done through coordination of the parts of the process. These authors, as well as the authors of the supply chain approach, both explain the need for coordination when introducing an idea like care pathways. It is uncertain if dependencies between care pathways received any attention and if coordination has even been part of the pathway implementation at these mental healthcare organizations.

Most literature about coordination concentrates on coordination in the manufacturing industry. Questions remain, if the available research of how coordination takes place and what possible differences are in the performance of coordination, also apply for the mental healthcare context. After all, the need for coordination is clear and Malone and Crowston (1990) already explain that coordination can occur in very different ways, which indicates that other coordination implications might be present in other contexts. Altogether, more attention for coordination within a mental healthcare context is needed (McDonald et al., 2007). When considering coordination, it is particularly important to include who to involve in coordination and how coordination might change over time (Aronsson et al., 2011; Evans-Lacko et al., 2010; Gittell, 2002a; Vissers & Beech, 2005).

1.1 Research goal and question

There is a gap in literature about how dependencies between care pathways are managed and how coordination is performed in the mental healthcare context. Therefore, the goal of this research is to investigate how coordination is applied at several mental healthcare departments in order to manage the dependencies between care pathways. The goal leads to the following research question:

How are care pathways coordinated at three departments of mental healthcare organizations in the Netherlands?

Four sub questions are formulated in order to answer the main question:

- Which dependencies are present at the departments?
- How are care pathways of the departments coordinated?
- How did coordination evolve over time?
- What are the similarities and differences between the departments as it comes to the way the pathways are coordinated?

1.2 Relevance of the research

The study has relevance for scientific and practical users. Both are explained in this section.

1.2.1 Scientific relevance

Coordination is the main focus of this study. As research about coordination within the mental healthcare context is limited (Aronsson et al., 2011), describing how coordination is applied at several departments of mental healthcare organizations will extend current theory concerning coordination. Gaps exist of how to measure if coordination is occurring (McDonald et al., 2007). Therefore, this study describes coordination practices at several departments within the mental healthcare context to make progress in the theoretical description and measurement of coordination. Following Malone and Crowston (1990), coordination can occur in several ways, which indicates possible variance of applied coordination practices at different departments. This study compares the coordination practices at several departments and the possible changes of coordination over time at a department. An overview of similarities and differences between the cases provides insights in the diversity of coordination. By giving special attention to the application of coordination at departments which implemented care pathways, a first insight in how the dependencies between these pathways are managed is offered. Overall, this study introduces more theoretical understandings of the diversity of coordination performed within the mental healthcare context.

1.2.2 Practical relevance

This research has practical relevance to healthcare organizations working with care pathways. Much is done to develop and implement these pathways. Therefore, gains should not be limited to certain pathways or even get lost because of dependencies with less efficient related pathways. The risk of losing a process wide view when applying pathways must have attention. With coordination as the main solution to manage dependencies, pathway implementation can be improved when more knowledge about coordination is presented. Empirical evidence of coordination at several mental healthcare departments can help the studied departments in improving their practice and can be helpful for other organizations to recognize possible improvements within their pathway implementation as well. Implementing care pathways successfully, provides opportunities for process wide cost reduction, increases in throughput time and quality improvements, which are not only demands of patients but also a necessity due to the current economic climate (Joosten et al., 2007).

2. Theoretical Framework

In order to answer the research question, this chapter provides relevant theoretical background to the concepts central to the study. First, the care programs and care pathways are explained and the relation to the supply chain approach. The essence of coordination is explained next. Coordination can be performed in different ways, in this framework portrayed as different coordination practices. Which coordination practice exists at the departments relies upon the characteristics of coordination present at the departments. What the coordination characteristics entail is described in paragraph 2.4.

2.1 Process of mental healthcare

Healthcare organizations are responsible for delivering care to their clients. In order to solve the health problem of a client, a process of clinical decisions and tasks has to be followed (Joosten, 2012). The process of healthcare endured a sequence of redesigns such as the development of care programs and care pathways. The focus of this research lies on the use of care pathways within the process of providing mental healthcare. A description of pathways and their position within healthcare is explained.

2.1.1 Care programs and care pathways

In order to meet the quality demands healthcare organizations deal with, care programs were introduced (Joosten et al., 2007). Care programs are described as "all specified and coordinated activities and measures to deliver healthcare services or to reach certain effects in a specified target population" (De Boer, as cited in Joosten, Bongers & Meijboom, 2007, p. 473). As healthcare organizations often provide services for more than one target population, several care programs are available, each aimed at a specified group of patients. These programs can be demographically aimed groups like children or adults or groups classified by disorder like autism or personality disorders. Often, each department of mental healthcare organizations represents one of these groups. In this research, a care program represents the care provided by a department of mental healthcare organizations. As Joosten and colleagues (2007) explained, not all quality and efficiency demands were answered due to implementing care programs. Therefore, it is recommended to implement the care pathways in order to reach the desired improvements.

Care pathways (also called clinical pathways, critical pathways or integrated care pathways) redesigned care processes in order to address improvement demands (Barbieri et al., 2009). Care pathways are defined as "a complex intervention for the mutual decision making and organization of care processes for a well-defined group of patients during a well-defined period of time" (Vanhaecht, Panella, Van Zelm & Sermeus, 2010, p. 118). It is a description of all steps taken to ensure continuity in, for example, the diagnosis or treatment phase of the care process of a client (De Allegri et al., 2011). Joosten describes pathways as consisting out of several defined services, but covering only a part of the care program (2012, see figure 2). For example, an adult client with autism falls within the care program 'autism adults'. The pathways of diagnosis and treatment are two separated pathways within this care program. First, the care pathway of diagnosis will be followed, providing all care taking services within that pathway in order to complete the diagnostics intervention. After that, the client, together with his practitioner, will choose a care pathway for treatment, and so on.

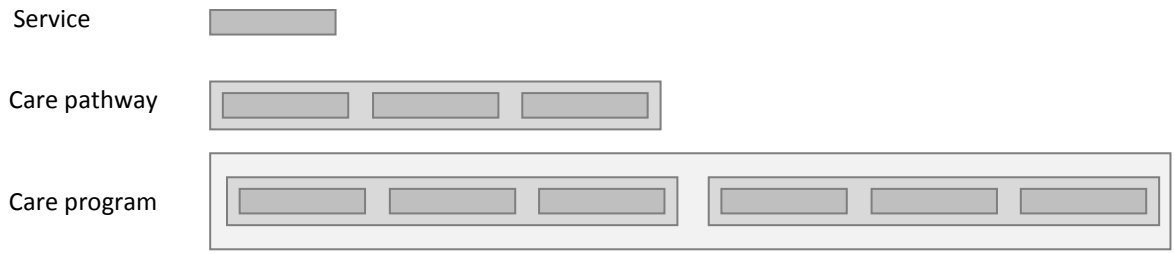


Figure 2. Differences between care program, care pathways and the services provided within that pathway. Adapted from *Redesign in Mental Healthcare. An exploratory Study into the Effects of Redesign on Multiple Areas of performance in Mental Healthcare* (p. 29), by Joosten, T.C.M. (2012), Ridderkerk, the Netherlands: Ridderprint BV

Care pathways accounted for several improvements within the care process. One improvement is the reduction in length of stay for patients and waiting times (Khandaker et al., 2013; Renholm, Leino-Kilpi & Suominen, 2002), which fosters an increase in throughput time (Joosten, 2012), efficiency gains and overall cost control (Sermeus et al., 2009). Regarding healthcare teams, pathways lead to a more integrated team and more multidisciplinary working (Deneckere et al., 2012; Khandaker et al., 2012). Successfully harvesting these advantages asks for careful development and implementation of these pathways. To start, different employees throughout the organization need to be involved in pathway implementation in order to entail full support and, therefore, process wide improvements (Hoffart & Cobb, 2002). Besides this, Khandakar and colleagues (2012) investigated care pathways within community psychiatry in England. Problems occurred when employees could not move patients through to the next care pathway due to capacity problems and waiting lists (Khandakar et al., 2012). Both points of attention can be nurtured through coordination (Campbell et al., 1998; Mentzer et al., 2001; De Vries & Huijsman, 2011). Coordination within healthcare is of great importance for the quality of care delivered (Gittell & Weiss, 2004), but research on how to conduct coordination at healthcare organizations is scarce and requests more investigation (Aronsson et al., 2011; McDonald et al., 2007).

2.1.2 The supply chain background

The care pathways start from a supply chain point of view (Joosten et al., 2007). A supply chain is defined as "a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer" (Mentzer et al., 2001, p. 4). Supply chains have some challenges that organizations need to deal with. First, there is a problem of flexibility. Organizations working with a supply chain often calculate what the demand might be, instead of anticipating on the actual demand (Christopher, 2000). This forecast driven aspect instead of demand driven, causes a lack of flexibility in answering demand questions. Second, there is a risk that the performance of one part of the supply chain is effected by other (possible less productive) parts, which ultimately affects the performance of the entire chain (Bahinipati et al., 2009; Mentzer et al., 2001). This risk implies the existence of dependencies between parts of the supply chain, dependencies already seen between care pathways. Thirdly, there is the challenge to see the supply chain as one single entity, not as a set of fragmented parts each performing their own tasks (Mentzer et al., 2001). Managing a supply chain is necessary to solve problems between the entities in order to create a seamless process (Aronsson et al., 2011). The key element of supply chain management is coordination (Aronsson et al., 2011; Bahinipati et al., 2009).

2.2 The necessity of coordination

In the study, the focus is on coordinating the care pathways within the care programs of mental healthcare departments. The reasons for implementing coordination are described through the coordination theory of Malone and Crowston. These authors define coordination as "the act of managing interdependencies between activities performed to achieve a goal" (Malone & Crowston, 1990, p. 361). It is explained, that these interdependencies are the relationships between the activities and coordination is only needed when these interdependencies are present (Malone & Crowston, 1994). Interdependencies are often caused by the resources that are needed to perform a certain activity (Malone & Crowston, 1994). There might be conflicting goals between employees performing interdependent activities, which endanger an optimal allocation of these resources. Without coordination, the performance of the entire process might be less productive because resources are not available to the right persons at the right time. The coordination theory explains three varieties of interdependencies: fit, flow and sharing dependencies (Malone et al., 1999). When fit dependency is present, several activities produce the same resource together. Flow dependencies occur in processes where one activity produces a resource that is needed by another activity. Sharing dependencies arise when several activities use one resource. This resource might be one employee conducting several activities, one machine needed for multiple activities or in case of healthcare one patient receiving multiple care services.

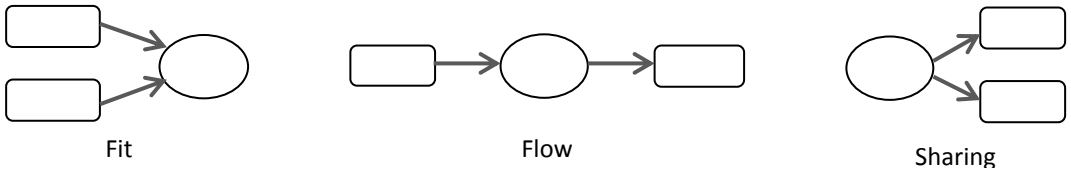


Figure 3. Fit, flow and sharing dependencies. The squares are the activities and the circles are the resources. Adapted from Tools for Inventing Organizations: Toward a Handbook of Organizational Processes (p. 430), by Malone and colleagues (1999).

When looking at healthcare processes, the presence of interdependencies becomes visible when problems like waiting times and delays arise. For example, because of his mental condition, a patient needs care regarding his relations with others, but also care regarding his living situation, this care needs to be provided simultaneously. These care pathways need to be provided to one client at the same time, describing a fit dependency. In the study of Khandakar and colleagues (2012), problems arose when patients could not go from one pathway to the next, due to capacity problems. The care pathways are the activities that are interdependent upon each other and need management in order to prevent delays or other problems. Consider the diagnosis and treatment pathway. A patient can only go from diagnosis to treatment when the treatment pathway has the capacity to provide care for that patient at the moment of leaving diagnosis. Also, the treatment pathway is dependent upon the information gathered within the diagnosis phase to provide the accurate treatment for that patient. In this aspect, the transmittance of patient information between employees can be seen as the dependency between the two activities (Gittell & Weiss, 2004). The transmittance of information and the capacity issues reveal flow dependencies. A sharing dependency is also present within mental healthcare because both diagnosis and treatment can only be provided when the patient is available to receive this care. Sharing dependency is also present when one employee provides care both for diagnosis and for treatment, so any type of care can only be provided when the employee is available to do so. Within current research the care program of a department asks for coordination as the dependencies between care pathways need to be managed in order to provide care successfully.

2.3 Coordination practices

Besides the various reasons to implement coordination within organizational processes, Malone and Crowston (1990) also point out that there are various ways to conduct coordination. In this research, the ways in which coordination occurs are named the coordination practices. Some explanations for the diversity in coordination practices can be given. The way of coordinating might be influenced by organizational aspects like structure and routines (Gittell, 2002a; Li & Wang, 2006). Another reason is supported by McDonald and colleagues (2007), arguing that different target populations within healthcare might ask for different ways to coordinate the care process. Malone and Crowston (1994) investigated how dependencies in different contexts are managed, such as in computer science, biology and economics. Current study focusses on how coordination is performed, not on the reasons of way coordination is performed that way. There are several manners in which the diversity of coordination practices can be structured. Malone and Crowston (1994) choose to describe coordination according to how certain dependencies are being managed. Other authors describe the diversity of coordination practices through dimensions like the people involved with coordination, how communication occurs, or through relationships related to coordination (Gittell, 2002a; Tsai, 2002; Willem, Buelens, Scarbrough, 2006). This caused many available dimensions of coordination practices. Two of the most discussed dimensions include the hierarchical structure of the organization and the (un-)intentional nature of coordination (Kato & Owan, 2011; Li & Wang, 2006; Malone & Crowston, 1994; Tsai, 2002; Willem et al., 2006).

Within the dimension derived from the hierarchical structure of the organization, the employees involved in coordination fulfill a central role. In this dimension, authors describe coordination as vertical or horizontal (Li & Wang, 2006; Tsai, 2002; Willem et al., 2006). When vertical coordination is applied, employees from the top of the organization direct coordination efforts (Kato & Owan, 2011). In this dimension, the managers are the ones coordinating. Horizontal coordination authorized the employees from the operational level of the organization to choose their own coordination efforts (Kato & Owan, 2011).The (un-)intentional nature of coordination can be described through programmed and non-programmed coordination (Willem et al., 2006). With programmed coordination, most coordination efforts are previously planned and determined, for example through a coordination plan (Li and Wang, 2006). Coordination can also be of more spontaneous nature, which is non-programmed coordination. In this dimension, coordination efforts emerge naturally, without planning beforehand.

The dimensions of vertical/horizontal and programmed/non-programmed coordination describe how coordination is performed. These coordination practices are displayed in a matrix (Figure 4), with the dimension of the practices insinuated within the given names. Each practice has its own advantages and disadvantages, which are explained later on. Important to consider is the chance that departments might adopt different coordination practices over time. Vissers and Beech (2005) state, that operational leveled employees should be involved with coordination at the short term, implying a more horizontal coordination practice. On the long term, they add, strategic leveled employees must be involved to secure sustainable performance of the entire chain (Vissers & Beech, 2005). In this case the department would change from a horizontal practice to a more vertical practice. Of course, changes in the programmed or non-programmed dimension of coordination practices are possible as well.

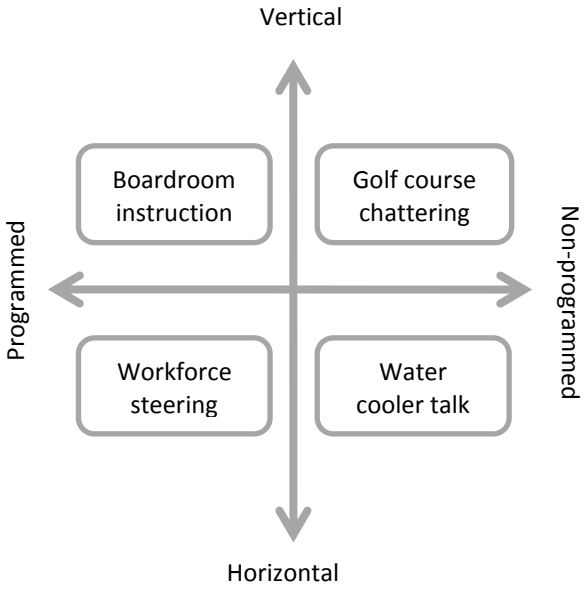


Figure 4. The coordination practices

2.3.1 Boardroom instruction

The boardroom instruction refers to a coordination practice where the strategic/tactical layer of the organization initiates coordination with a programmed character. There is a central authorized person within the organization that entails all information and coordinates it to members lower in hierarchy (Kato & Owan, 2011; Nidumolu, 1996). For example, from the boardroom employees are instructed in what to do and how to do it, as management initiates coordination. In this vertical coordination approach, employees have no change to act opportunistically and independent, which might be a risk of a supply chain approach (Li & Wang, 2006). The programmed dimension entails that coordination occurs, often by sharing information, at previously planned meetings, such the boardroom meetings of management. According to Willem and colleagues (2006), programmed and vertical coordination often only facilitates the sharing of easy understandable knowledge. Disadvantages of the vertical dimension are the possibility of limiting proactivity, initiatives and sharing of knowledge and causing communication problems like noise or interpretation flaws between managers and employees (Tsai, 2002). The dimensions might be recognized through formal process descriptions, plans, rules, procedures, manuals, standards, policies and hierarchical decision making.

2.3.2 Golf course chattering

This practice is named golf course chattering as the higher levels of the organizations (e.g. the strategic/tactical level) initiate coordination during spontaneous meeting, as can be compared to directors meeting at the golf course. The disadvantages of the vertical dimensions of limited proactivity and initiatives, as described above, still need attention. However, compared to the practice of boardroom instructions, golf course chattering accounts for intense sharing of complex knowledge, due to the less programmed dimension (Willem et al., 2006). Non-programmed coordination can happen through unscheduled meetings which evokes unplanned communication between members of those meetings (Van de Ven et al., 1976). Coordination activities “are not specified in advance by the organization, but are rather worked out on the spot by organizational members” (Argote, 1982, P. 423). Coordination is based upon new information causing mutual adjustments by the interacting people (Van de Ven et al., 1976). Argote (1982) explained that non-programmed coordination is especially useful when organizations experience a great deal of uncertainty, because programmed coordination would put increased demands to provide the appropriate response to a given situation.

2.3.3 Water cooler talk

The third practice, water cooler talk, has a horizontal and non-programmed coordination dimension. Coordination initiatives can be taken during interactions with colleagues when meeting, while getting some water. Coordination unofficially emerges among the employees of the operational level of the organization (Li & Wang, 2006; Willem et al., 2006), as operational leveled employees have the authority to initiate coordination, without interference of management (Kato & Owan, 2011). A downside of the horizontal dimension is the possibility of opportunistic behavior to arise among employees (Li & Wang, 2006). Li and Wang (2006) explain that this type of coordination provides the chance for individuals to only optimize their individual benefits. A water cooler talk is informal of nature resulting in shared values among employees. Because of the shared values, there are more interactions and knowledge sharing among employees working in different parts of the organization compared to situation with a formal coordination practice (Tsai, 2002). There is more room for flexibility because of the non-programmed dimension of coordination (Argote, 1982).

2.3.4 Workforce steering

Workforce steering refers to the coordination practice where operational leveled employees initiate coordination during planned meetings with colleagues. The last practice encloses programmed and horizontal coordination efforts. The horizontal dimension of this practice fosters the spread of new ideas and cooperative relationships among employees which increases knowledge flows within organizations (Tsai, 2002). This practice often promotes shared values and trust among employees which also increases sharing of knowledge (Willem et al., 2006). Programmed efforts are often prescribed by plans and programs during scheduled meetings (Argote, 1982; Van de Ven et al., 1976), or as in this example: team meetings.

2.4 Recognizing coordination practices

Four types of coordination practices are explained above. To compare coordination between the departments it is necessary to investigate which coordination practice is present at those departments. In order to recognize the dimensions of coordination existing at the departments, some indications must be given. In current research, these indications are defined as the coordination characteristics through which a coordination practice can be recognized. For example, to determine if coordination at a department has a vertical or horizontal dimension it is necessary to look at the hierarchical structure behind coordination. In other words, who initiates and performs coordination. The hierarchical position can be divided into operational, tactical or strategic leveled employees (Vissers & Beech, 2005). The hierarchical position of the employees initiating coordination is the coordination characteristic to determine if a vertical or horizontal dimension is present at the department.

The programmed and non-programmed dimension of coordination refers to the way in which interactions about coordination occur at the departments. They might be planned beforehand, demonstrating programmed coordination, or emerge spontaneously, which described non-programmed coordination. Gittel (2002a, 2002b) states that interactions between people are central to coordination. With the theory of relational coordination, Gittell (2002a) focuses on communication and relationships when looking at coordination-related interactions. The way in which communication and relationships within these interactions occurs might stimulate or stifle coordination (Gittell, 2002a). Within current research, the communication and relationship aspects of interactions are investigating, proving important information about coordination and its programmed or non-programmed dimension at the departments. Communication entails the frequency, timeliness, accuracy and problem-solving aspects of interactions. The relationship ties between employees involve the shared goals, shared knowledge and mutual respect among employees. The focus on relationships between employees, when exploring coordination is

supported by the supply chain approach. A good relationship between employees of different parts of the chain is necessary to successfully incorporate a supply chain (Mentzer et al., 2001). Recognizing the programmed or non-programmed dimension is done by investigating if the interactions stimulating coordination are mainly of programmed or non-programmed nature.

Together the employees, communication and relationships form the characteristics of coordination which are used to recognize which coordination practice best typifies coordination at the departments.

Employees		**Communication**		**Relationships**	
Horizontal	**Vertical**	**Programmed**	**Non-programmed**	**Programmed**	**Non-programmed**
Operational	Tactical Strategic	Frequent, in time, accurate and with a problem solving intention through previously planned meetings	Frequent, in time, accurate and with a problem solving intention through emerging interactions	Mostly individual goals employees strive for Little shared knowledge No feeling of respect among employees	Shared goals, which fosters non-programmed communication Sharing knowledge automatically Mutual respect

Table 1: The characteristics of coordination and the dimensions of coordination practices they help recognize

2.4.1 Employees

As stated above, through the characteristic of employees it can be recognized if the vertical or horizontal dimension of coordination is present at the department. The vertical and horizontal dimension is related to the hierarchical position of employees initiating coordination. An organization can be divided into operational, tactical and strategic levels (Min & Zhou, 2002; Vissers & Beech, 2005). The operational level entails the day-to-day flow of patients, resulting in activities, like workforce scheduling and patient record keeping, restricted to one part of the process. The tactical level includes the coordination of production, resulting in managing client throughput and focusing on interfaces between parts of the process. The strategic level focuses on the entire care process, resulting in planning policies and evaluation of changing in patient flows (Min & Zhou, 2002; Vissers & Beech, 2005). Coordination can be typified by a horizontal dimension when coordination is mostly initiated and performed by operational leveled employees. When coordination is mostly performed and initiated by tactical and/or strategic leveled employees, then the vertical dimension can be identified. As described earlier, Vissers and Beech (2005) add the importance of timing regarding which organizational level to include in coordination. Coordination might be initiated and performed by employees of other hierarchical levels in time, which might cause a change in dimension and, therefore, a transformation of coordination practice. The hierarchical position of employees initiating coordination has some consequences to the effectiveness of coordination (Gittell, 2002a). Status differences can be a barrier to coordination as it undermines relationships among employees and by that, cause communication difficulties (Gittell & Weiss, 2004). To reach process wide gains, constant interaction and an aligned view between employees of different hierarchical levels is necessary, as authors of the supply chain approach explain (Goedee & Entken, 2008; McKone-Sweet, Hamilton & Willis, 2005). This collaboration between different hierarchical levels is required for successful implementation of care pathways as well (Evans-Lacko et al., 2010; Grol & Grimshaw, 2003). For all employees to be aware of dependencies between the activities they perform, organization wide coordination is necessary (Vissers & Beech, 2005).

2.4.2 Communication

The dimension of programmed and non-programmed coordination is related to the way interactions about coordination happen. Coordination is expressed through communication (Malone & Crowston, 1994). To foster performance gains through coordination, communication must be done in a frequent, timely and accurate manner (Gittell, 2002a; Lambert & Cooper, 2000; Malone & Crowston, 1994). It is also important that employees communicate with a problem-solving intention to increase coordination outcomes (Gittell, 2002a). Employees might communicate in a fault-finding fashion, rather than a problem-solving one. Communicating in a fault-finding fashion can diminish the advantages of coordination by causing a closed and unfriendly environment (Gittell, 2002a). So, for coordination purposes it is important to consider the frequency, timeliness, accuracy and problem-solving content of communication. When these factors of communication are mostly expressed through previously planned meetings, the coordination practice has a programmed dimension. With the non-programmed dimensions represented when these coordination factors are mainly addressed in a non-programmed fashion.

2.4.3 Relationships

The programmed and non-programmed dimension of coordination practices can be recognized through the communication efforts among employees, but attention must be given to the influence of relationships between these employees, when describing their communication efforts. High-quality relationships support high-quality communication among employees working in different parts of the organizations (Carmeli & Gittell, 2009). Therefore, when high-quality relationships between employees are present, it is likely that interactions about coordination happen in a spontaneous emerging manner. When less high-quality relationships among employees exist, communication between employees will not occur automatically. Consequently, programmed interactions are necessary to initiate coordination. High-quality relationships are defined by shared goals, shared knowledge and mutual respect among employees (Gittell, 2002a). Some employees pursue their own task goals, without reference to the overarching goals of the process, while others see their activities in light of the overall goal. Understanding each other through shared knowledge facilitates coordination, as does respecting the work and competences of others. When people initiative and performing coordination, share the same goals, knowledge and have respect for each other's work it is likely they see each other's activities and the dependencies in work processes as well (Malone & Crowston, 1994).

3. Methodological Framework

After presenting the theoretical ramifications of coordination, this chapter presents how coordination is studied within the current research. First, the departments are selected according to a strategy explained in this chapter, followed by an explanation of how the information of dependencies within the care programs of these departments is gathered. The characteristics of coordination are collected in a prior planned manner, which displayed the coordination practice of that department. The rationality behind analyzing the gathered data, in order to answer the research question and sub-questions, is also explained.

3.1 Research design

The research question of this study is answered by conducting a comparative case study within a mental healthcare context. The focus is on departments working with care pathways. The limited theory available on managing the dependencies between care pathways asks for in-depth investigation. First, the dependencies within the care program of a department are presented. As each department can apply coordination in different ways and not much is known of how coordination is applied in mental healthcare, the coordination practices of these departments are compared. The theory explained that coordination practices might change over time, so alternations in these practices are presented as well. The units of observation are the employees and the units of analysis are the departments the employees represent.

3.2 Data collection

The research data is collected in two stages. First, the dependencies within the healthcare process need to be visible, as these dependencies are the reason to apply coordination. Within this research, these dependencies are found through document study and interviews with key persons of the departments. Then, the data is gathered in order to create an overview of how coordination is applied at the departments. This data contains information regarding the coordination characteristics and is used to identify and describe the coordination practice of that department. Data collection is done conducting semi-structured, in-depth (retrospective and cross sectional) interviews with employees of the departments. In order to execute these interviews, the narrative approach of Riessman is used to collect all relevant data about coordination. The narrative approach provides the opportunity to collect all information about how coordination is done at the departments, by making it possible for employees to elaborate on their experiences in a complete manner and without theoretical restrictions (Riessman, 1993).

3.3 Sampling strategy

The research focusses on coordination at three mental healthcare departments. To describe the coordination practice at the department, employees are interviewed. Choosing the departments and employees is done through the strategy of purposive sampling. This form of non-probability sampling is an appropriate alternative when probability sampling is not possible, even though it does affect the generalizability of the study (Singleton & Straits, 2010). For the departments it is important to be part of a mental healthcare organization, working with care pathways. As theory predicts, differences in organizational aspects might influence coordination. Therefore, two mental healthcare organizations are included in the study. It is presumed the organizations differ on some organizational aspects and therefore coordinate in different ways. Theory predicts that differences in coordination exist when other target populations are represented. To investigate if these reasons for differences in coordination practices exist, two departments with the same target population but from different organizations are included and the two departments of the same organization represent different target populations. Employees are chosen according to their position within the hierarchy of the organization. To cover the total care program of the department, employees are also

selected according to their position within the care process. The dependencies within the care programs are revealed through brief interviews and document study. Interviews are held with key persons of the departments. The key persons are employees within the departments who obtain knowledge about the care pathways and have an overview of the entire care program of the department. The interviews with these persons covered initial information about the department and possible dependencies. These key persons were also asked to provide relevant documents about the care process and pathways of the department. According to this convenience sampling of documents, the dependencies within the process are revealed.

3.3.1 Departments

The chosen departments are the Center of Autism Adults and Act-team of 'Stichting Geïntegreerde Geestelijke Gezondheidszorg Eindhoven en de Kempen' (GGzE) and the Center of Autism of GGz Breburg. Since mental healthcare organization GGzE requested a research to improve the use of care pathways, this organization is involved from the start. GGzE is located in the south of the Netherlands and helps around 15.513 clients from the region of Eindhoven per year (GGzE, 2012). The center Autism Adults of GGzE started working with care pathways since 2009, being an interesting case to investigate, with regard to this study. Center Autism Adults is specialized in the diagnosis and treatment for adults with an autism spectrum disorder. The department of the Act-team for first psychosis is the second department of GGzE involved in the study. This department also started working with care pathways in 2009. The Act-team provides intensive, ambulatory support with a multidisciplinary team for clients with a first psychosis. These departments of GGzE might display the assumed difference in coordination, because of their difference in target population, but without this difference to be caused by a variance in organizational aspects. The other mental healthcare organization involved, is GGz Breburg. Due to connections between GGzE and GGz Breburg, the researcher was able to include them in the research. GGz Breburg has locations spread throughout the mid and west of Noord-Brabant, the southern province in the Netherlands. This organization provides healthcare to around 16.371 clients per year (GGz Breburg, n.d.). From GGz Breburg, the center Autism is included. The center focusses on the same target group as center Autism Adults of GGzE, providing care for adults with an autism spectrum disorder. Comparing these two departments of Autism provides information about the influence of different organizations on the type of coordination.

3.3.2 Employees

How coordination occurs at a department is derived from the interviews held with employees of the department. The position of an employee within the organization and within the process defined the selection criteria. Following the differentiation of Vissers and Beech (2005), an organization can be divided into an operational, tactical and strategic level. A care program can be differentiated in various ways. As care pathways have a central position within the research, employees are chosen in order to cover all pathways present within the care program of the department. As coordination might have changed over time, two groups of employees are selected per department. One group is covering past events of coordination, the other covering how coordination is applied in the current situation. In this way the transformation of coordination can be studied. Three employees are chosen to cover the operational level of the organization, also representing different pathways of the department, and two employees are selected to represent the tactical and strategic level of the organization. The number of employees aimed at interviewing is not entirely realized (See table 2). At the department of Autism Adults of GGzE, eight employees are interviewed: two of them, covering the tactical and strategic level of the organization; six of them, covering the operational level and different care pathways. One group of four employees (three operational leveled and one from strategic/tactical level) covered past events, the other group of four represent current events. At the Act-team, all of ten initiated interviews are held following most of the selection criteria. The criterion

of two tactical or strategic leveled employees per time frame is not accomplished, due to availability issues. In total, two employees covered these levels, and the other eight employees outlined coordination from an operational perspective covering all facets of the care program of the department. One group represented paste vents, the other explained current coordination efforts. At the department of Autism at GGz Breburg nine employees are included. Two employees cover the tactical and strategic level of the organization, leaving the operational level to be represented by seven employees. All care pathways of the department are represented. As care pathways were introduced not longer than a year ago, all employees are asked about changes within this year.

	Hierarchical level	Past	Present
Aimed interviews	Operational	3	3
	Tactical	1	1
	Strategic	1	1
Total: 10		5	5
Center Autism Adults GGzE	Operational	3	3
	Tactical/strategic	1	1
Total: 8		4	4
Act-team GGzE	Operational	4	4
	Tactical/strategic	1	1
Total: 10		5	5
Center Autism GGz Breburg	Operational	-	7
	Tactical/strategic	-	2
Total: 9		0	9

Table 2. Sampling of employees

3.4 Measurement

In order to collect as much relevant data as possible about coordination, an operationalization of the concept is necessary. As described in the theoretical part of this thesis, coordination practices can be recognized through several coordination characteristics. These characteristics are the basis for the operationalization of coordination. During the interviews, the operationalization of coordination also presents the topic list for the interviewer. The operationalization table can be found in Appendix A. Prepared questions, as presented in the operationalization of coordination, can be used when following the narrative approach (Riessman, 1993), but freedom for interviewees to share their story in their own way, typifies the narrative approach. For this reason, the questions proposed within the operationalization table might be altered or not even asked during the interviews, as long as all characteristics of coordination are explained. Semi-structured interviews are applied.

The questions presented in the operationalization table are derived directly from the theory of coordination. This increases validity, because the questions cover the main concepts of the study. Indirect questions are used. This is important to reduce the chance of social desirability. To limit this bias even more, sensitive questions are avoided; anonymity of respondents is guarded by analyzing without the mentioning of names; and the data is collected in face-to-face interviews (Singleton & Straits, 2010).

The study also includes how coordination occurred in the past. The narrative approach helps interviewees to look back and remember past events (Riessman & Quinney, 2005). To facilitate employees with remembering past events, Singleton and Straits (2010) advise to use an event history calendar (See Appendix B, for an example). This calendar presents information about events from the time span under investigation during the study. Providing some information to the employees about that time enables them to recall other events of interest (Singleton & Straits, 2010). The information for this calendar is retrieved from the document study and interviews with key persons, collected in the first part of data gathering. Caution is necessary when presenting this calendar to the employees,

as it might direct their answers. The narrative approach, as well as the event history calendar, limits possible recall bias for employees interviewed to explain coordination in the past.

To guide the reliability of the research, the consistency of response is important. To account for this consistency, several employees are interviewed per department. Their answers are compared to retrieve a consistent view of coordination of that department. Even though, face-to-face interviews often have a high response rate, there is a possibility that employees would not corporate due to productivity pressures, which increases the change for non-response. To limit this bias, the researcher gained agreement with the management of the departments, so employees would be given time to participate in the interviews. The researcher also had the advantage of following a traineeship at GGzE at the time of the research, which made it easier to get into contact with the departments and other mental healthcare organizations.

3.5 Data analysis

The first gathered data is retrieved from the interviews with key persons of the departments and relevant documents issued by these persons. During the interviews, the employees are asked to explain the work method used at the department, the development, implementation and use of pathways and possible problems or issues they face concerning the continuity of the care process of the department. These questions are semi-structured of nature with the goal to look into the work process of the department. The key persons are asked to provide relevant documents related to the presented questions, in order to explore these topics more into detail. Information concerning possible dependencies within the care program of the department is highlighted, as is information needed to create the even history calendar. The information from the document study and interviews with key persons is summarized into a brief explanation of how dependencies appear per department.

The second part of data analysis concerns the interviews with employees in order to retrieve information to recognize the coordination practice of the departments. To be able to analyze the gathered data, the interviews are audio recorded and transcribed. In order to sort out the data, Ritchie and Lewis (2003) advise to label the transcripts. To make the first sortation, the data is labeled according to the operationalization of coordination. This labeling is done by coloring the paragraphs within the transcribed interviews, providing information about a certain concept of the operationalization of coordination. Table 6 of Appendix C presents the used labels. Table 7 of Appendix C provides a part of a labeled interview. An additional label of ‘care pathways elaborations’ is added. This label includes all gathered information about care pathways offered during the interviews, which might present extra information about the dependencies in the care program or other relevant information of how the departments work with care pathways. The ‘other’ label highlights important aspects to coordination, not explained in the theory described in chapter 2. This labeled data is clustered into tables as presented in table 8 of Appendix C. Each department has its own table offering all information shared per employee.

The following step in analyzing the data is through data reduction. The different stories of all employees of each department, presented in the tables, need to be reduced to one story. This story describes coordination at that department. This reduction is done through content analysis. All information per department is arranged by categories. These categories need to be clearly defined, exhaustive and mutually exclusive (Singleton & Straits, 2010). The employees often provide similar information regarding coordination of the department. To group this information, categories are formed to structure the information. During the interviews, as well as through theory concerning coordination, it became clear coordination could best be described through the interactions happing at the department. Therefore, the first category to structure the information is ‘interactions’. All interactions, planned or unplanned are listed in the results table (table A) of each department. Next,

each type of interaction is analyzed more into detail. In order to recognize the coordination practices, information concerning employees, communication and relationships is described. First, it is outlined which employees are involved in the interactions. Then, the timeliness and frequency is described, followed by an explanation of the content of the interaction. This content regarded if the communication has a problem solving intention and if the relationships are of high quality, by presenting all information about shared goals, shared knowledge and mutual respect. During the analysis it became clear a second results table needed to be added to present additional data. Results table B presents the hierarchical position of the employees, to be able to recognize the vertical and horizontal dimension of the coordination practice. This table also presented if there were any changes in coordination efforts at the department, it obtains all the elaborations about care pathways, and other information important for current research.

The next step is detecting patterns within the reduced data, in order to answer the research question (Ritchie & Lewis, 2003). To make a comparison between departments, the dimensions of coordination practices, presented in chapter 2, are used. Data about programmed or non-programmed coordination is assembled, as well as horizontal and vertical coordination. This makes it possible to analyze which type of coordination practice is most appropriate to describe coordination of a department and by that, making it possible to compare how coordination occurred at the departments. At this point, the data is ready for answering the research question.

4. Results

The results chapter presents the outcomes of the analysis. First the information about the departments is presented, followed by revealing the dependencies. Then the characteristics of coordination are presented with possible changes over time. With these characteristics, the coordination practices of the departments are described.

4.1 The cases

In this research, three departments within mental healthcare are investigated about how coordination is used to manage dependencies between care pathways. At GGzE two departments are studied: the center of Autism Adults and the Act-team. The third department, center of Autism, is a department of GGz Breburg. Information about the departments is presented below.

	GGzE (GGzE, 2012)		**GGz Breburg (GGz Breburg, n.d.)**
Region	Region of Eindhoven		Region Tilburg, Breda, Etten-Leur
FTE December 31st 2012	1.745		1.625
Clients in care in 2012	15.513		16.371
	Center Autism Adults	**Act-team**	**Center Autism**
Employees	42 (25,19 FTE)	17 (13,28 FTE)	38 (28,16 FTE)
Clients	+/- 500	125	+/- 360
Target population	Adults with autism spectrum disorder	Clients with first psychosis	Adults with autism spectrum disorder

Table 3. Information of departments retrieved from the annual plans of the organizations or the departments themselves.

4.2 The dependencies

Through the document study and interviews with key persons of the departments, it became clear that each department is working with care pathways in its own way. GGzE started developing care pathways in 2007 at several departments throughout the organization. From 2009 onwards, several departments implemented pathways for the care they provide. GGz Breburg started developing care pathways in 2012, putting them into practice at the end of that year. The pathways of each department are presented below. Whereas pathways for the treatment phase of the care process at GGzE seem not developed and implemented, at GGz Breburg, especially, the treatment phase is working according to care pathways. The squares present the care programs of each department, whereby each separate square is one (possible) care pathway. Where the darker squares represent the care pathways implemented at the department, the lighter squares are pathways which are under development, but not in use at the moment. The key persons were asked to describe where possible problems within the care program of their department might be. Of each department the care program, care pathways and possible problems within the care program are described, resulting in an overview of dependencies present at the departments.

4.2.1 The departments

Center Autism Adults of GGzE has developed and implemented the care pathways of assessment, intake and diagnosis. These pathways are evaluated several times in 2009 and 2010, leading to improvements in usability, but also in effectiveness in terms of faster throughput times. Still the department noticed not all employees working according to the pathways, requesting another evaluation to find out reasons behind this. Care pathways for the treatment phase have been under development with no implementation so far. Most problems become visible through waiting times. Clients have to wait for six to eight weeks before assessment can be done, eight months before

diagnosis and two months before there is room at the intake pathway. The care program of Center Autism Adults shows a flow dependency as each pathway is dependent upon the previous or next pathway in order to help a client or send the client to the next part of the care program.

Figure 4. Pathways of Center Autism Adults, revealing a flow dependency

The Act-team is working according to the specific Assertive Community Treatment (ACT) method. The aim of the method is the re-integration of clients within a three year timeframe. A multidisciplinary team provides ambulatory, custom made healthcare services, taking the specific needs of the individual client into account. The care pathways are introduced in 2009. As stated by the theory, the treatment phase within this team has a maximum timeframe of three years. Within the treatment phase, only the action of evaluating the treatment plans of clients is specified. Because no further time and action specifications are provided, the treatment phase does not represent the definition of a care pathway. The intake phase of the Act-team does have standardized action and time aspect and therefore can be seen as a care pathway. There has been no explicit evaluation of the care pathway at this department and no aspirations to evaluate them in the future. Even though the treatment phase is no explicit care pathway, the intake phase and treatment phase are interdependent upon each other. For the target group of the department, it is important that they receive care as soon as possible. Therefore, there must always be room for admittance at the intake pathway. There is room, when employees are available to provide care, which is also dependent upon the throughput of client to the treatment phase. In the past, the reputation of the department was damaged because clients could not be admitted due to capacity problems. Clients went to other care providers and it took time and effort to repair this loss of image. The possible capacity problems of the Act-team present a flow dependency when clients are not able to go from intake to treatment. It also presents a sharing dependency. The sharing dependency becomes visible when looking at employees as a resource. Some employees of the department work in the intake pathway and also in the treatment phase. In this aspect, capacity problems might occur when the workload for the treatment phase for those employees is too large, so they are not able to provide the care for the intake phase. This might cause the problem that clients cannot be admitted immediately.

Figure 5. Pathways of Act-team, revealing a flow and sharing dependency

Center Autism of GGz Breburg included pathways for intake, diagnosis and several treatment phases of their care program. The pathways are still under evaluation, with the notion that most of the treatment pathways did not reach their ending times yet, therefore no data about the performance gains can be given. The use of pathways is closely monitored for each client and each employee. At

the time of investigation, the diagnosis pathway is not in use at the department itself. Due to a sharing dependency, emerging because employees have to work in the diagnostics pathway as well as in the treatment pathways, waiting lists occurred to enter the diagnosis pathway. The sharing dependency is managed by outsourcing this work to an external organization, so employees now only have to work in the treatment pathways. A flow dependency is also present at this third department. Waiting times might occur when clients can be move from a diagnosis pathway to the treatment phase of the care program. At this moment, short waiting times exist for one or two treatment pathways, displaying a manageable liability. The center Autism of GGz Breburg developed and implemented several care pathways for treatment, each presented a specified part of treatment such as care specially focusing on work and living arrangements. Sometimes, clients receive care from more than one pathway. Receiving care provided by several pathways at the same time presents a fit dependency.

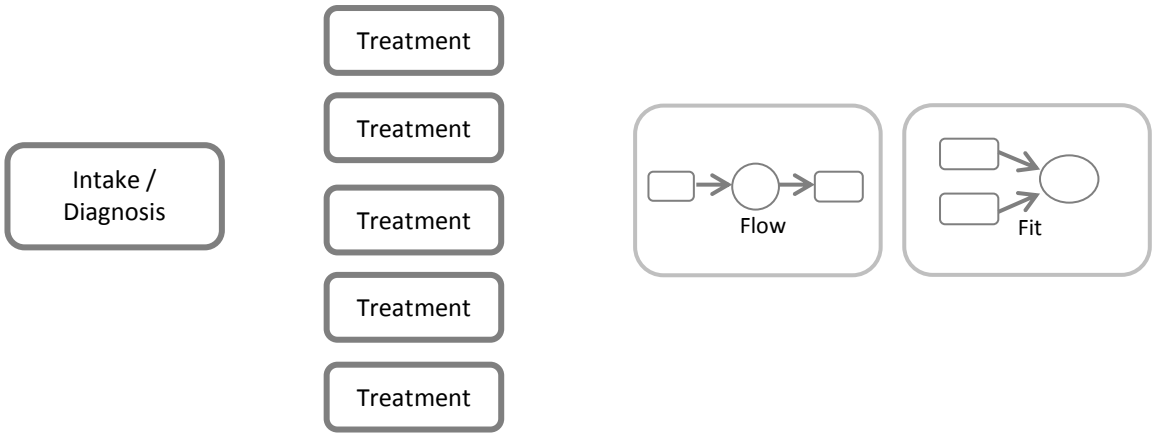


Figure 6. Pathways of Center Autism, revealing a sharing and fit dependency

4.2.2 The overview

All departments under investigation are presenting flow dependencies within their care pathway. At the department of Autism Adults of GGzE current waiting times make visible how dependencies can cause problems in the total care program of the department. At the Act-team past events present how possible capacity issues might threaten the care program and are the only department with a sharing dependency. The department of Autism at GGz Breburg outsources care so manage a possible dependency, but have to deal with a fit dependency which is not present at the other departments. The table below summarizes the care pathways in use at the departments and which dependencies are in need of management. How coordination is done at the departments is discussed next.

	Pathways in use	**Year of implementation**	**Dependencies**
Center Autism Adults	Assessment Diagnosis Intake	2009 2009 2009	**Flow dependency**
Act-team	Intake	2009	**Flow and sharing dependency**
Center Autism	Intake/diagnosis Treatment 5x	2012 2012	**Flow and fit dependency**

Table 4. Care pathways and dependencies of the departments

4.3 Coordination

During the interviews with employees, some additional information about care pathways is shared. This information is first presented, followed by coordination related data. Describing how the departments coordinate the care programs is done by describing the coordination practice of that department. To find out which coordination practice best describes coordination, the characteristics of coordination first need to be investigated (see table 5). To recognize if coordination at the department is vertical or horizontal of nature depends on the employees initiating coordination. For each department the coordinating employees and the organizational level they represent are studied. To display if coordination is programmed or non-programmed, the characteristics of communication and relationships need research. When communication occurs frequent, in time, accurate and intentionally problem-solving, mainly through programmed interactions, the programmed dimension is recognized. When these aspects of communication mostly happen through non-programmed interactions, the non-programmed dimension is recognized. When the relationships between employees can be described by shared goals, shared knowledge and mutual respect, it is likely that the coordination practice has a non-programmed dimension. When these aspects of relationships are not found, coordination is most likely to happen in a programmed fashion. If coordination practices changed over time is also researched at the departments. This information is gathered by interviewing twenty-seven employees, resulting into a dossier of 230 pages with transcribed information. This data is reduced to the results tables as presented in Appendix D.

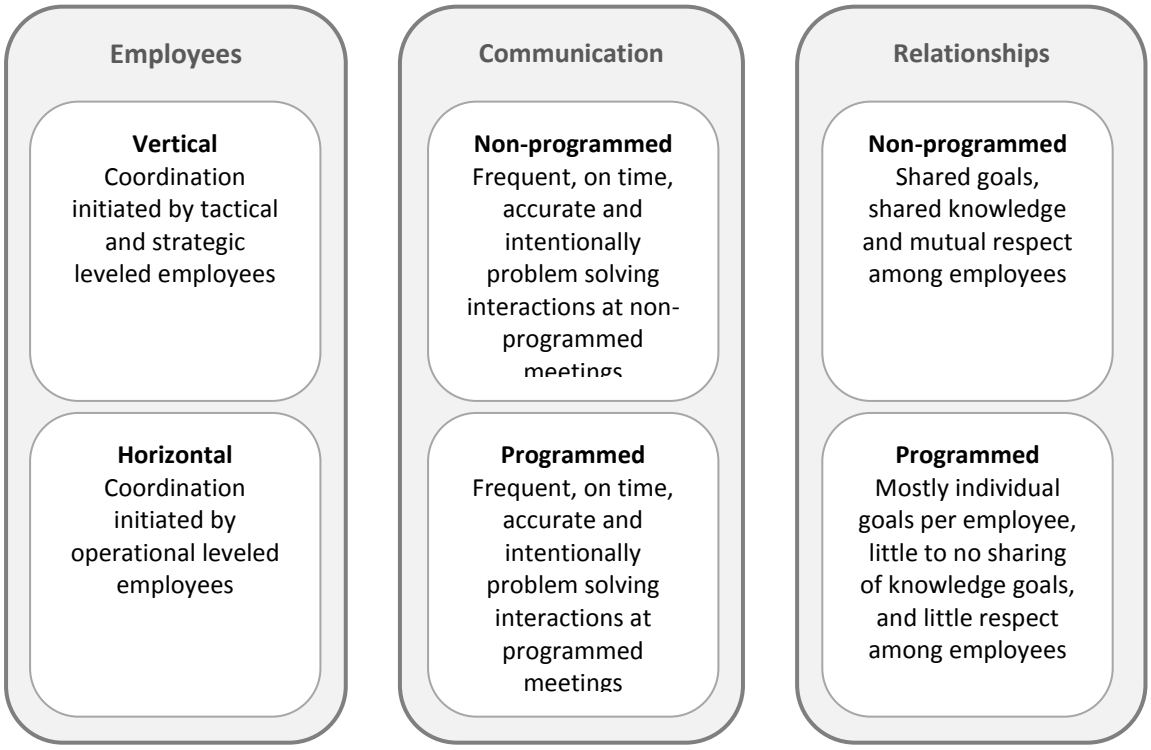


Figure 7. The characteristics of coordination and the dimensions of coordination practices they help recognize

4.3.1 Center Autism Adults

The eight employees interviewed at the center of Autism Adults of GGzE involved a psychologist, two healthcare psychologists, a systems therapist, a case manager, a care coordinator, an employee of the client coordination point and a quality coordinator.

Care pathways

The care pathways are developed executing a top-down decision. Demands of healthcare insurance companies and long waiting lists, forced the department to become more efficient. By describing the actions and durations of these actions for one specific part of care, the pathways provided more clarity for client and employee. They forced employees of the Center of Autism Adults to look more critical to the ending phase of the care provided by the department. The ending phase is the moment that the department stops providing care to a specific client, because the client does not need care anymore, or the needed care is not part of the care that this department provides. When this happens the department will refer the client to another care provider. Before the pathways, employees would keep clients in care longer than needed or provide care to clients who, strictly speaking, should move on to other care providers. The pathways also caused an increase in administrative procedures for employees. A pathway for the treatment part of the care program of the department never evolved, because the ending times for the treatment phase are difficult to predict. Forecasting in mental healthcare is more difficult than in regular healthcare, as mental disorders have no standard time in which a client is cured. Now, three to four years after care pathway implementation, these are no longer on the minds of employees. New colleagues do not even know what the idea behind care pathways entails. Contradictory, an employee explained that pathways are, indeed, discussed within the multidisciplinary team-meetings (MDT's). About the set times of pathways an employee explained: 'I notice nothing about the set times for care pathways, we work according to our own protocol'. While another employee seems to be aware of these times: 'the pathways frustrate me, because the timeframes are not achievable'. The set times of pathways have been evaluated but not controlled. Only the client coordination point (CCP), which controls logistical processes at the department, seems to work conferring to the pathways, guarding the process of clients according to set times.

Employees

The quality coordinator and employee of the CCP represent the tactical/strategic level of the organization, leaving the rest of the employees of the department to represent the operational level. The psychologist works within the diagnostics phase of a care process. The healthcare psychologist works at the treatment and diagnostics phase, and is also present at the CCP meetings. Participating within the CCP provides the employee with knowledge about the entire care process of clients. The care coordinator and case manager are both responsible to guard all life areas of a client, therefore monitoring all parts of care provided for a client, but only focusing on the treatment phase of the care program. They assemble questions from the client and commence colleagues to answer them, when the case manager or care coordinator cannot do this by themselves. One employee called them the persons with: 'coordination responsibility'. Not all clients, thought, are linked to a care coordinator or case manager. This depends upon the intensity of care needed. The care coordinator and case manager are the only employees at the operational level initiating coordination. The task of the quality coordinator is to guard and improve the logistical part of the process. To be able to do this a complete view of the care provided is necessary as well as positions of clients within that process. He retrieves this information during the CCP meetings. The CCP-employee takes care of the input and throughput of clients, receiving information from colleagues of the department. She provides input for the CCP-meetings and evaluated the pathways in the past. The quality coordinator and CCP-employee initiates coordination of logistical processes, like client throughput. At the Center of Autism Adults, the care coordinator, case manager, quality coordinator and CCP-employee initiate coordination, and by that, manage the dependencies between the care pathways. The case manager and care coordinator are only a minority of the operational level, with coordinating care only for the treatment phase of the care program. Consequently, the vertical dimension is more suited to describe the coordination practice of the department.

Communication and relationships

Interactions at this department occur in three programmed meetings where most disciplines are present: the multidisciplinary meeting (MDT), the diagnostics meeting and the evaluation of treatment plans. The MDT, twice every week, is a moment where employees can raise questions about clients and receive new insights to further the process. As explained during an interview: 'because of the MDT you refer clients easier to colleagues who can answer their questions better' and another employee elaborated 'because of the MDT you know what colleagues are doing'. It depends on the schedule of employees if they are present at this meeting. When one does not attend the meeting, it will cause no lack of information, as one employee made clear: 'we are stars in reporting, so all shared information can be traced back'. Another employee raises questions about colleagues' reports and, therefore, asks questions directly to clients. According to him, reports are often lacking relevant information. The MDT meeting is a frequent held meeting, where communication is not always accurate but has a problem solving intention. The diagnostics meeting, held twice a month, discusses complex cases more into detail. Employees have the possibility to assign clients to be discussed in this meeting. This meeting happens not very frequent, but provides accurate communication and helps in solving problems. Evaluating treatment plans is done once a year per client. With all colleagues involved with the client, the progress of the client is discussed and further steps are considered. The frequency of this meeting is low. So it is questionable if the interactions during these meetings are done in time. Communication is accurate and with a problem solving intention. The client coordination point (CCP) needs some special attention when describing programmed gatherings. The CCP controls the logistical processes of the department. One employee called it the 'point of coordination' within the department. The CCP always knows the position of a client within the care process. During CCP-meetings, every week, the quality coordinator, the program coordinator, a healthcare psychologist and an employee conducting only CCP-activities come together to talk about the logistical process, client applications, client throughput and debates about the required next step in the care process of a client. This meeting initiates a lot of coordination activities.

In addition to these programmed gatherings employees feel free to ask questions directly to colleagues, this is of non-programmed nature. These interactions are fostered, one employee explained, 'because the department is located within two buildings on close distance, making it easier to share knowledge with colleagues', and 'there are short lines within the department, so I can always ask questions'. Noticeable is the fact that employees tend to ask questions to colleagues with the same expertise. This is second by the programmed meetings for psychologists or case managers, where they talk about clients and share expertise only with colleagues of the same discipline. The communication and collaboration within groups of the same discipline cause the creation of 'islands of disciplines' to quote an employee. Contradictory, another employee stated: 'we use each other's expertise', indicating multiple disciplines to work together 'as it is preferable to discuss clients with other colleagues'. A multidisciplinary approach is rendered through the MDT-meeting. Multidisciplinary interaction outside these programmed meetings, happen (only) twice a month. This does not apply for employees without colleagues of similar discipline in the team; they stated that one of the other employees will be involved when problems or question arise. It can be stated that non-programmed interactions happen not as often as programmed interactions. One of the employees explained, that colleagues are only focused on their own part of the process, because there is no time to look beyond that part. This is caused, he continuous: 'by increased work pressure, uncertainty and lack of communication'. Above results illustrate a workplace with little to no shared goals and limited sharing of knowledge, requesting programmed coordination and where frequent, accurate, and problem solving communication mostly happens during programmed meetings. The programmed dimension is recognized.

Transformation over time

In the years between pathway introduction and now, some things have changed. The vision of keeping the client in care during their entire life is replaced by the vision of looking critical to the necessity of care at this moment. Also, some clients were not linked to an employee, so when crisis occurred it was unclear who was responsible. Linking these clients got more attention now, but still not all employees know which clients are linked to them. One employee explains: 'we don't have the capacity for all clients'. Waiting lists increased, causing the introduction of the function of care coordinator. With this function, clients receive care faster, but more superficial than care provided by a case manager. They provide the 'first aid for clients' to quote an employee. Even though, it seems clients need more intensive care as provided by case managers, not care coordinators, 'as the care coordination provides no quality care', the change indicate that more operational leveled employees will initiate coordination activities in the future. The last change centers around the treatment plan evaluations. Previously, these evaluations took place between the client and the employee providing the main care to this client, without interference of other team members. Now, these evaluations are discussed with all disciplines present. The CCP is also involved. Or as an employee explained: 'The CCP tells you what you may or may not do'. This also indicates a more horizontal form of coordination, as operational leveled employees are getting more involved.

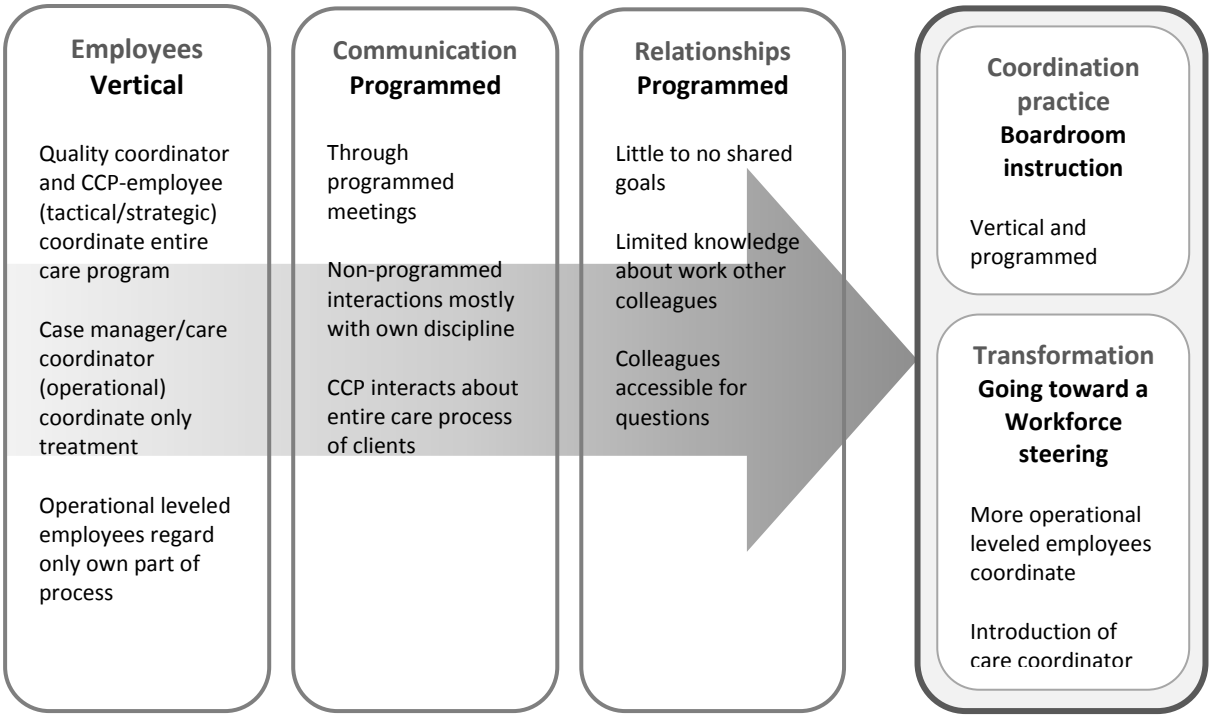
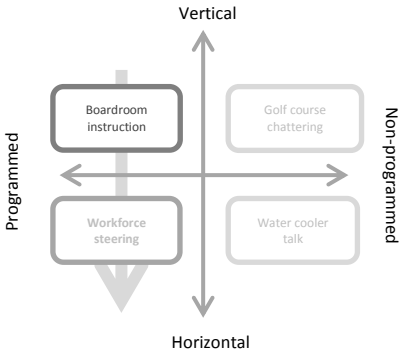


Figure 8. Results Center Autism Adults

Coordination practice

Within the department of Autism Adults at GGzE, there are four functions with the responsibility to manage the dependencies within the care program. The care coordinator and case manager focus on the care provided in the treatment part of the care program. They coordinate only this part of the care process, and by that, do not manage the dependencies between care pathways. The quality coordinator and CCP-employee regard the total care program, having the responsibility to deliver the right care to clients, within a continuous and streamlined process. As they represent the strategic and tactical level of the organization it can be stated that the vertical dimension best describes coordination at the department. Frequent, timely, accurate and problem solving interactions happen

mostly during programmed gatherings. Complementing this, with the fact that little to no goals are shared and only limited knowledge is shared among employees, the dimension of programmed coordination is recognized. The way in which coordination at the department of Autism Adults of GGzE occurs can be described by Boardroom instructions. Changes within the department might lead to a more horizontal coordination practice. When all clients are linked to an operational leveled employee and all employees are present when treatment plan evaluations are discussed, the dependencies between pathways can be managed more by operational leveled employees compared to the current situation. In that case, workforce steering describes coordination at the department. These changes are in motion, but not yet realized.



4.3.2 Act-team

At the Act-team all of ten initiated interviews are held. The functions of the employees involved: a work and school related counselor, a secretary, a healthcare psychologist, a case manager/care coordinator (double function), two community psychiatric nurses, a living counselor, a psychiatrist, a quality coordinator and the team coordinator who also functions as a psychologist within one sub-team of the department.

Care pathways

It is interesting to see that, even though the care pathways were developed and introduced in 2009, the employees within the department have no knowledge of them. One employee of the department was part of the project group which developed care pathways at other departments within GGzE and stated: 'I don't see care pathways within the Act-department'. An employee stated the contrary: 'I work with care pathways a lot'. The quoted employee refers to the frequency in which treatment plans of clients need to be evaluated and the intake phase of the care program. For intake there is a protocol describing the actions and the times at which these actions need to be performed. This indicates that care pathways at the Act-department are only visible when concerning the treatment plan evaluations and intake phase. Another employee stated: 'the procedure of care pathways are getting dusty'. Within the team, there is an expectation that colleagues take responsibility as soon as the set times for the actions at the intake phase of treatment plan evaluations are passed. In some situations, though, employees inform each other that timeframes have been passed, without those employees noticing this by themselves. The department has some communication problems with other departments in- and outside the organization. The care pathways 'might help to streamline the care between these departments', one employee explained. The system, USER, is a tool which can guard the process. The system, however, is difficult to work with and has reliability issues. The system enlarges the administrative procedures, causing postponements or tasks not to be accomplished. An employee explains: 'the assistance the system should provide is over-shadowed by flaws and frustration'. The target group of the department is hard to predict, causing timeframes to be abstract and hindering the development and use of care pathways.

Employees

In terms of organizational levels represented by the employees: the quality coordinator represent the tactical level, the team coordinator embodies the strategic level, leaving the rest of the employees to be of operational level. Employees like the counselors and psychologist, focus only on the treatment part of the care program, while other colleagues focus on the entire care program of a

client. The community psychiatric nurse and care coordinator have the responsibility to guard the process of a client, having a 'helicopter view' when assembling and distributing all care related questions. Looking at the logistical proces, the quality coordinator gathers signals related to waiting lists and application and discusses these with the team coordinator. The team coordinator is the link between the department and the organization, the logistical and operational processes and acts upon the signals received from the quality coordinator. The secretary keeps track of the set times for treatment plan evaluations and, therefore, makes sure the care processes of all clients are reviewed and continued on time. The quality coordinator and team coordinator initiate some coordination activities, but it can be stated that the dependencies between the different parts of the care program are mostly managed by the operational leveled employees themselves. This presents a horizontal dimension of coordination.

Communication and relationships

Looking at the programmed meetings, there is a morning meeting, every morning, with all employees working that day. All clients are mentioned and possible problems or questions regarding a client can be discussed briefly. The goal of this meeting is, according to an employee: 'not forgetting about clients'. To quote an employee: 'because of this meeting, I stay informed about clients I don't meet often'. Another employee was less enthusiastic, as mentioning the names of clients without elaborating about them is no value adding activity. The morning meeting happens very frequent, therefore on time (before problems concerning the dependencies occur) and with an accurate and sometimes problem-solving intention. The treatment plan meeting is held every six months per client, where all disciplines involved in providing care to that client are present. 'This treatment plan review is the formal line of coordination of the care process with the care coordinator as the leading men' an employee explained. Informally, coordination is guided by the employee most involved with the client. The treatment plan occur not very frequently, but with accurate communication and with the intention to solve any problem concerning the care program of the client. The team meeting, every Thursday, rotates in topic: discussing complex cases; about a theme relevant for the department; about organizational changes; and, reflection and evaluation of a colleague on a work related activity. The content of these meetings can often be selected by employees. Except for the organizational topic, this is chosen by the team coordinator. This team meeting focusses only once a month on the dependencies within the care program, during the discussion on complex cases. Therefore, this programmed meeting is not very relevant when describing coordination. Other programmed meetings are dependent of individual disciplines. The psychologists and psychiatrist have their job related meetings with other psychologists or psychiatrists of the organization. The communication between the Act-department and other departments within GGzE or at external organizations asks for more effort. As one employee mentioned: 'we need to make agreements with those departments about providing care and communicating about clients'. Where another added: 'these arrangements need close attention because they have been overlooked'. Every department has their own way of working 'which makes collaboration difficult'.

Besides this long list of programmed meetings at the department, the non-programmed interactions are important to discuss. Significant for this department is the method of Assertive Community Treatment (ACT), which prescribes a more intensive team-approach when treating clients. The shared working space, elicited by the ACT-method, facilitates sharing of knowledge and non-programmed interactions with colleagues, throughout the day. These multidisciplinary interactions emerge when employees 'just want to brainstorm with colleagues', when treatment stagnates, or when 'I have doubt about actions undertaken'. Employees mention the communication to be 'informal of nature' and 'there is safety within the team' to quote employees. This is also due to the ACT-method, 'which forces us to be very accessible to each other' is explained. One employee mentioned that the communication is not that good. He mentioned some examples of miscommunication occurred at the department. He added: 'the alignment within the team is less

than I expected'. The team coordinator and quality coordinator review lists of clients every few months, not formally planned, to verify if no clients are missing by one another. As they state: 'then we notice that there are differences in the registration of others'. This is a moment of control and makes sure every part of the organization has the same overview of clients and their position within the care program of the department. Even though, there are many programmed meetings at the department, frequent, accurate and problem solving communication mostly happens at the spot, non-programmed. During these interactions care related topics about clients are discussed, initiating the coordination of care program wide actions. This indicates a non-programmed dimension.

At the department the sharing of knowledge has a main priority. One employee states 'We need to be flexible in taking over each other's tasks', two employees explained. As an employee mentioned 'all employees are responsible to have an overview of all clients and their care processes'. This indicates a high level of sharing knowledge among employees. Concerning the sharing of goals, some employees described the goal regarding only their aspect of providing care, while others described a department wide goal. These (mostly) shared goals and high level of shared knowledge, together with the importance of the non-programmed interactions when regarding the management of dependencies, indicate a non-programmed dimension of coordination.

Transformation over time

The department faced some difficulties in the past, causing capacity problems and waiting times to increase. These problems caused the introduction of the team coordination at the department. As an employee explains: 'before the team coordinator was introduced everything was mixed up, everyone was interfering, what caused noise and commotion'. This central person gathers information and questions asked by team members and she ensures these questions are passed on to the right persons. Possible frustrations within the team are limited, working in its full capacity and with no waiting times. An employee elaborated: 'there are no waiting lists and we don't want them. They are disastrous for the department'. Still the coordination of some clients is happening disorderly 'because of the changes we had'. One employee explained that the ACT-method asks for a self-managing approach, and maybe this approach can be implemented again, now the department is working according to plan. The introduction of the team coordinator indicated that the department shifted to a more vertical dimension. As the dependencies between pathways are still managed by operational leveled employees and the function of the team coordinator seem to be redundant at this moment, the horizontal dimension remains intact.

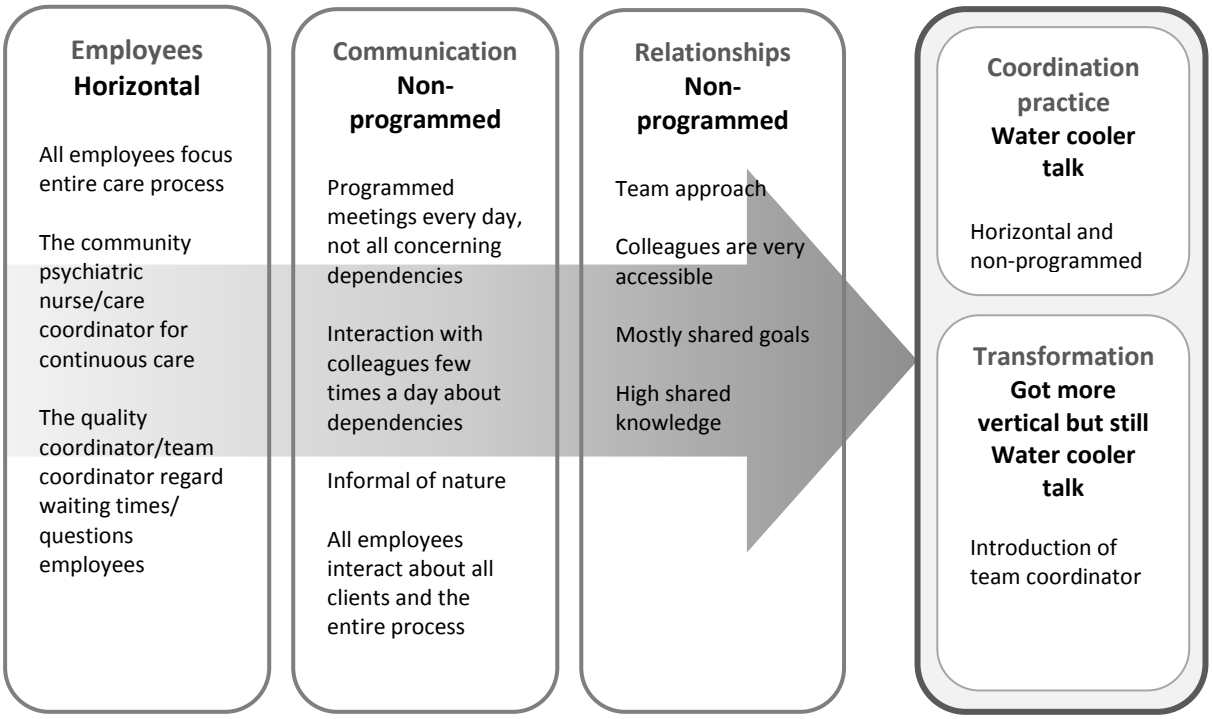
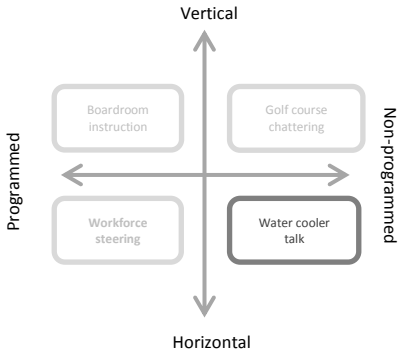


Figure 9. Results Act-team

Coordination practice

Looking at the table above, the team-approach, as instructed by the ACT-methodology, accentuates the coordination at the department. Frequently, there are programmed meetings, but most frequent, accurate and problem solving interactions concerning coordination of care pathways, happens through non-programmed communication. These are the interactions throughout the day among employees, to guard a continuous process, but also the interactions between the quality coordinator and team coordinator about waiting lists. Therefore the non-programmed dimension best describes coordination at the Act-department. The operational leveled employees of the department are the ones initiating most coordination activities, recognizing a horizontal dimension. Coordinating with a water cooler talk practice describes the way in which the dependencies between care pathways are managed at the department. The introduction of the team coordinator indicated that coordination became more vertical, but with the dependencies between pathways still managed by the operational level the horizontal dimension remains the best dimension to describe coordination at the department.



4.3.3 Center Autism

At the department of Autism at GGz Breburg, the nine employees included were: two community psychiatric nurses, two case managers, one work and school related counselor, a living practitioner, the secretary, the manager business operations and the manager treatment, who has a double function working as clinical psychologist besides the manager function.

Care pathways

The care pathways are introduced to improve throughput times, establishing a critical eye on the ending phase of providing care. 'We do not want to keep clients in care longer than necessary' an employee stated. Even though, some employees explained having difficulties letting clients go. The pathways offer a clear overview of what care is provided by the department. Client now know what they can expect and employees have an overview of tasks to perform. The timeframes incorporated into the pathways are fixed. Per client it is described which care is provided and in which period of time. Only with convincing and well founded arguments, there is a possibility to prolong this period. Prolonging the timeframes must be discussed the treatment plan review with all disciplines. One employee said: 'I'm not consciously watching the set times of a pathway, I'm focusing on the actions that are mentioned'. For employees, it is unclear what happens when more care is needed, but the period of the care pathway is about to end. Employees explained that it is importance to have options to deviate from the pathways, if required. They point out that there is no room for individual demands of clients within the pathways, forcing clients to fit within pre-described formats. 'Individually necessary requirements should be possible', an employee argues. Besides this, the employees feel rushed because of the pathways. The system Value Care is used to present a clear overview of where the client is positioned within the care pathway and gives notion when the ending phase of a pathway is nearing. Often it is explained that pathways created a lot of administrative activities, 'especially for us, secretaries' the secretary specified.

Employees

The manager business operations and manager treatment embody the tactical/strategic level of the organization, where all other members of the department represent the operational level. The secretary possesses limited knowledge about the position of clients within the care process, although she assists the other employees of the department on all sorts of areas. She has information about waiting lists, but no other client-related information. To quote: 'as secretary you are notified last'. The manager treatment discusses the information about waiting lists more into detail. The community psychiatric nurses and case managers retain a general view of the process and guide clients throughout the care process. They have a 'helicopter view', as some employees stated. Worth mentioning is the fact, that not all clients are connected to a case manager or community psychiatric nurse. The boundaries of tasks and responsibilities between these functions are a bit vague. 'This could be described with more detail' an employee elaborated. A clear description could enhance the expectations towards each other. The work and school related counselor is focused on the part of the care process linked to this specialization. She explained, during the interview, that she also encompasses information on other care associated activities of that client. The living practitioner helps clients to develop skills in order to clean the house, structure administration and finance. Her activities only represent this part of providing care to a client. Even though, she contacts the therapist of the client a lot in order to facilitate on all care-needing areas. The manager business operations concentrates on all work related facilities needed within the department and, therefore, is concerned about logistics, calculates productivity of employees, and looks at the financial consequences of care provision. It can be stated that all employees of the Center of Autism are involved in initiating coordination activities at the department and by that, manage the dependencies between care pathways. Hence, the horizontal dimension is recognized.

Communication and relationships

The third department under investigation has some preplanned meetings. Every week there is a treatment plan review, followed by a multidisciplinary meeting right after the review. The meeting takes place with all disciplines of a team. The department consists of three teams, each representing a location: Tilburg, Breda and Etten-Leur. Each team, separately, evaluates the treatment plan of a client, with employees taking responsibility for enforced actions. The multidisciplinary part of the

meeting allows employees to ask questions or discuss problems they face during the provision of care for clients. At the beginning of this meeting, the production reports of each employee and the entire department are displayed to see how well employees are doing, providing care within the set times of the pathways. In addition to these care related meetings there is a policy meeting, every month, to discuss organizational aspects. Other meetings occur, because of the function of some employees, like meetings about the content and execution of courses or meetings with the managers of the department. Besides interacting with employees, the manager business operation also encounters with directors of the organization and managers of other departments. The manager business operations and manager treatment come together to talk about department related subjects, from care content to logistical or organizational aspects. Interactions mostly happen frequent, accurate and with a problem solving intention during previously planned gatherings. Regarding the non-programmed communication, colleagues interact a few times a month about practical subjects, such as the pathways. This indicates that the coordination dimension of the department is programmed.

The knowledge and experiences of employees are shared through these gatherings. However, the geographical distance between the teams cause 'islands within the department' as employees mentioned. To quote an employee 'I do not dare to introduce everything in this meeting, because I don't know the team that well'. While one employee stated: 'everyone knows where another colleague is working on', another explains: 'I don't know exactly where my colleagues are working on, that is a utopia'. Employees have their own caseload and goals to work on, describing their work to be 'solo'. . One employee goes to treatment plan reviews, solely for the reason to create more interactions with colleagues. 'Communication can be better; this is second by the results of a satisfaction survey among employees'. Communication is not very accurate, direct and open, some employees explain. While another employees contradicts this and describes communication as open. It is important to report about clients, even though, 'some employees are not as good in this'. Communication from employees to managers is good, but one employee stated 'communication at the level of the team could be better'. Communication from the top of the organization contains much noise: 'the organization often made a decision already, even when they ask you for input'. Opposing this individualistic aspect of working at this department of GGz Breburg, almost all employees described their goal as overarching the part of the process they work in. Even though, the sharing of knowledge only happens during planned meetings, therefore the programmed dimension describes coordination at the Center Autism of GGz Breburg.

Transformation over time

The department started working with care pathways in 2012. During this first year of implementation of pathways some changes occurred. In this period, the care related goals for clients are formulated more clearly. It caused the purpose of providing care to be more focuses and reduced clients to 'float' within the care program of the department. One employee stated: 'there still are clients who have no contact person'. Another problem received attention just after pathway implementation. Due to care pathways clients are assigned to a pathway suiting their care demands. Within this pathway, care can be provided by several employees of the department. This creates a chance of devouring responsibilities among these employees. Some employees highlighted the importance of linking one contact person to a client throughout the entire pathway. Both problems are solved due to the introduction of a pathway planner for each client. This pathway planner monitors the client through all different services provided within a pathway ensuring a continuous process. This change suits the horizontal dimension of the coordination practice of the department, so the coordination practice of the department stays the same.

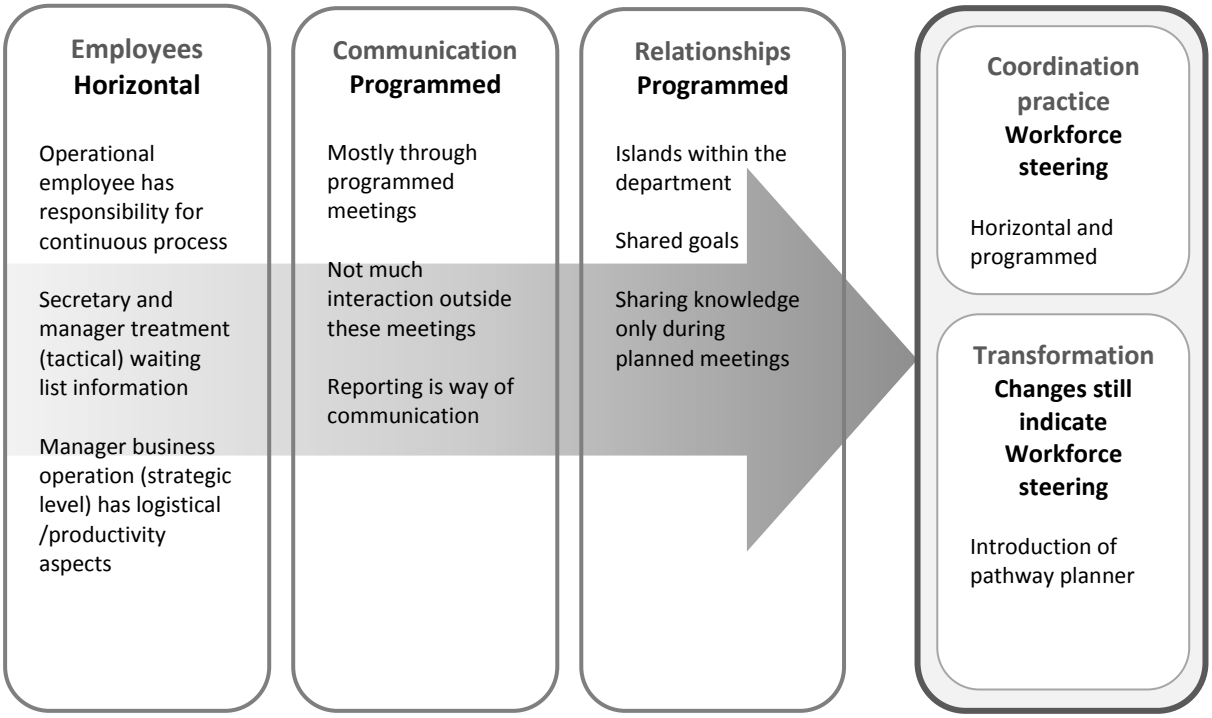
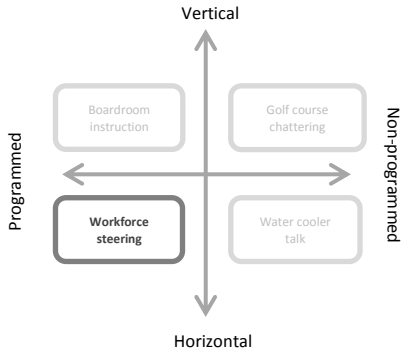


Figure 10. Results Center Autism

Coordination practice

At the department of Autism at GGz Breburg employees often work alone, without much interaction outside of planned meetings. This indicates that coordination is most present in a programmed manner, matching the dimension of programmed coordination. Coordinating the care program of the department happens through monitoring devices, like Value Care, and presenting the productivity of employees once a week. Even though, monitoring and the control on a continuous care process at the department is done by the manager treatment and manager business operations, all operational leveled employees initiate some coordination activities. The employees act upon the results displayed through Value Care and the productivity numbers, without the managers to dictate what they most do. This makes the horizontal dimension most fitted to describe coordination at the department. Coordination practice 'Workforce steering' is recognized through the gathered data. With the addition to address a pathway planner at the department, coordination becomes even more horizontally initiated. Therefore Workforce steering stays the best coordination practice to describe coordination at the department.



5. Conclusion

This chapter presents an answer to the research question of the study: How are care pathways coordinated at three departments within mental healthcare organizations in the Netherlands? *First, the conclusion about the dependencies are explained, followed by the coordination practices applied at the departments and the similarities and differences among the cases.*

In summary, the way in which the dependencies are managed at the studied cases is displayed through the following figure. For each department, the coordination practice is presented, with the lighter grey arrow to indicate the transformation of coordination practice at the department of Autism Adults at GGzE. The main differences are presented per department, and the similarities are demonstrated in the square besides the matrix.

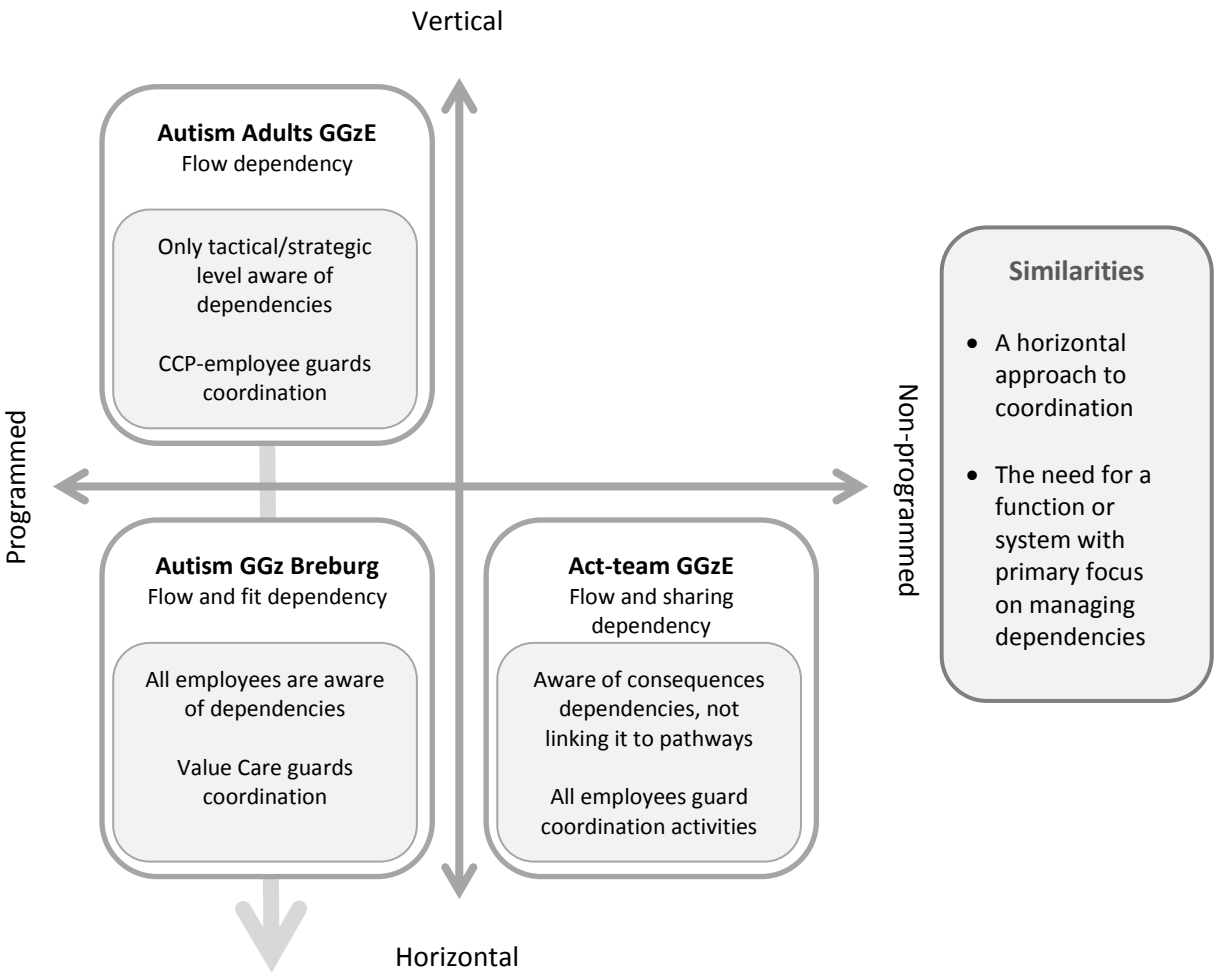


Figure 11. Summary of coordination at mental healthcare departments

Dependencies

The reason to coordinate is to manage the dependencies between care pathways. First of all, it must be stated that only at the department of Autism of GGz Breburg all employees are consciously working according to the implemented care pathways, being aware of the set actions and times throughout the entire care program. At the two departments of GGzE, the care pathways seem to be in the background, receiving no attention or awareness of most employees. A noticeable result is that three mental healthcare departments seem to face flow dependencies within their care

program. At the department of Autism Adults it caused waiting times throughout the entire care program, stating the urgency to manage the dependency. The Act-department was confronted with the dependency in the past, but seems to manage it well in current situation. The department of Autism of GGz Breburg faces minor waiting times only for one or two care pathways within the care program. The possible sharing dependency at this department is seems to be managed successfully by outsourcing the work done within the diagnosis pathway to an external organization, so no liability of this dependency has to be expected. The Act-department, however, does have to deal with this sharing dependency, as it might cause capacity issues in the future. The department of GGz Breburg is, the only department in the research implementing several care pathways for the treatment phase of the care program, resulting in a fit dependency as clients can be in two treatment pathways at the same time. In sum, it can be stated that all three dependencies are possible within mental healthcare processes, with the flow dependency forming the greatest liability for a streamlined, continuous care program.

Coordination practices and transformation over time

Even though, all departments investigated present a flow dependency, they seem to manage this dependency in their own ways. The department of Autism Adults of GGzE incorporated the coordination practice of Boardroom instruction, a vertical and programmed coordination practice. The Act-department manages its dependencies with a Water cooler talk coordination practice, coordinating with a horizontal and non-programmed dimension. The department of Autism of GGz Breburg coordinated programmed and horizontally, presenting the coordination practice of workforce steering. There is a tendency for mental healthcare organizations to manage the dependencies with a workforce steering coordination practice. Two out of three departments, the Act-department and Autism of GGz Breburg, coordinate according to a horizontal dimension and two out of three, Autism Adults of GGzE and Autism of GGz Breburg, incorporated a programmed coordination dimension. This tendency to coordinating following the workforce steering practice, however, cannot be directly linked to the flow dependency visible at all three mental healthcare departments as the department of Autism of GGz Breburg is the only department coordinating according to Workforce steering. Though, when regarding the evolvements over time, also the department of Autism Adults of GGzE is changing to a more horizontal practice. More operational leveled employees seem to initiate coordination and when this trend is followed, the department will coordinate according to the workforce steering practice in the future. The other two departments displayed no significant changes in coordination practice. One change is observed at all departments, which is the introduction of a new function at the department. Sometime after the implementation of care pathways, all departments integrated a person or system with some sort of coordinating task. The department of Autism Adults of GGzE introduced the care coordinator to quickly assemble all important care related questions of a client, making sure all care is provided at the right time, by the right colleagues, focusing only on the treatment part of the care process. The Act-team installed a team coordinator to ensure the team-approach is functioning as proposed so capacity problems, as faced in the past will not occur in the present and future. The Autism department of GGz Breburg introduced the pathway planner to keep an eye on the set times and actions of care pathways, by monitoring which care is already provided to a client.

Similarities and differences

There are some similarities as to how the care pathways are coordinated at the three departments included in the research. First of all, important for this study is the results that most department coordinate according to a horizontal dimension. At the department of Autism Adults of GGzE coordination initiatives are mostly taken by strategic and/or tactical leveled employees, but also at this department, the case manager and care coordinator initiate coordination even if it is only within one part of the care program. Findings concerning this department, present a shift to include more

operational leveled employees within coordination, causing a change to a horizontal coordination practice. Another similarity is the introduction of a new function or system at all three departments, as explained above. All departments started working with care pathways without these functions, but included a new function as pathways were in use. It appears to be necessary to add some sort of monitoring function or system within the department to make sure a seamless, continuous care program is guarded. There must be someone or something at the department whose primary task is to manage the dependencies within the care program. Previous existing functions within the department would not be enough to secure this coordinating function.

Besides these two similarities, there are also two differences between the cases. The first difference stresses the awareness of dependencies between the care pathways within the care program among the employees of the departments. Only the department of Autism of GGz Breburg seems to address these dependencies vividly, causing all employees to be aware and be able to act upon them. At the Act-department most employees are aware of the consequences of dependencies, because of past events, without actual knowledge about care pathways. Therefore, they know what possible problems in the care program of their department might be, without linking these problems to the care pathways. The awareness of dependencies at the department of Autism Adults of GGzE is only present at the tactical/strategic level of the department. The employees of the operational level are only concerned with their own part of the care program, making sure they keep their job. The second difference between the departments regards who or what guards that coordination activities are performed within the care program. At the department of Autism Adults of GGzE, the employee of the CCP assembles all information concerning clients' position within the care program, discussing these with other colleagues to make sure that dependencies within the program are managed. The department is reliant on this employee to guard coordinative activities and problems might occur when this person is not around. On the other side, at the department of the Act-team all employees are involved in managing dependencies, all guarding coordination, even though it must be stated that these employees have no knowledge about the care pathways. They are aware of possible weaknesses within the care program and initiate coordinative activities to manage these weaknesses. At the department of Autism of GGz Breburg this is done through a technical system, Value Care. Value Care provides employees with information about their clients and those care processes, causing employees to take responsibility and minimize the possible problems caused by dependencies.

6. Discussion, limitations and recommendations

The results and conclusion explained before, lead to some discussion in light of the theoretical framework of the research. The study has some limitations which are explained in paragraph 6.2. More research can be done to clarify coordination within the mental healthcare context, resulting in recommendations for future research. The practical recommendations end this chapter.

6.1 Discussion

The conclusion described above leave some room for discussion. There are three points in the research that are especially interesting to debate, these are the care pathway implementation at the three departments, the differences of coordination practices and the transformation of practice over time.

6.1.1 Successfulness of care pathways implementation

Current study focusses on the coordination of care pathways, but results present that not all employees within the researched departments are actually aware of those pathways, let alone work according to the set times and actions of those pathways. At some point in time, two departments encountered difficulties implementing care pathways, indicating that the diffusion of this innovation has not succeeded. At the Act-department the innovation of care pathways seems only partially adopted, where at the department of Autism Adults of GGzE, the care pathways seem to be abandoned, with employees following their own protocol instead of the actions and times addressed within the pathways. Only the department of Autism of GGz Breburg is using the care pathways as they were intended. At all departments, the care pathways are developed with employees representing of diverse disciplines of the department and including employees of every organizational level. Evans-Lacko and colleagues (2010) explained, that successful pathway implementation largely depends of this multidisciplinary involvement, contradicting the findings of pathway implementation at the Act-department and department of Autism Adults, as a multidisciplinary involvement is done without realizing department wide implementation. There must be another aspect, besides multidisciplinary involvement, more important for pathway implementation. The research of Greenhalgh, Robert, Macfarlane, Bate and Kyriakidou (2004) described some facilitators and barriers to the implementation and diffusion of innovations. It is advised that innovations should be compatible with the goals and values of the users of this innovation (Greenhalgh et al., 2004), which is not the case at the Act-department and department of Autism Adults. During the interviews, employees of the Act-team and the department of Autism Adults explained that care pathways decreases the quality of care they can provide within the set times. There is no room to look at the individual demands of clients, which indicates that employees are not able to modify the care pathways; even though, this would enhance the use of innovations when the users are able to modify them (Rogers, 1995).

This indication for successful pathway implementation, however, is also not presented at the department of Autism of GGz Breburg, where all employees are, indeed, working according to the pathways. The employees of this department also expressed their concerns about the impossibilities to include individual demands of clients into the pathways. There is, however, one noteworthy difference between the two departments of GGzE and the department of Autism of GGz Breburg, which is the communication and feedback to employees after the development of care pathways. The department of GGz Breburg imbedded the technical system Value Care, keeping the employees of the department aware of the pathways and dependencies within the care program. This use of a technical system to remind the employees of the set times of the pathways, is a facilitator to effective implementation advised by Grol and Grimshaw (2003). Malone and Crowston (1994), even describe the use of technical system within the coordination process to be more effective and cost reducing compared to coordination initiatives taken without the use of such a system. These authors

explained that the technical system replaces expensive human capital, increases the amount of coordination initiatives and increases the amount of employees involved in coordination as it enlarges the communication about coordination. It can be discussed, that the implementation of a technical system is a prerequisite to effectively work with the care pathways. A prerequisite, even more essential then the cooperation of all organizational levels within development, or compatibility of the innovation with existing values of the departments.

6.1.2 Differences in coordination practices

Within the coordination theory of Malone and Crowston (1994), it is stated that different dependencies will be managed in different ways, raising the expectation that when the same dependencies arise, these will be managed in comparable ways. But even though, all departments have to deal with flow dependencies, all three departments coordinate according to different practices. With Gittell (2002a), and Li and Wang (2006) stating that coordination practices might be influenced by organizational aspects like structure and routines, it might be expected that some resemblances between the cases of the same organization appear. Current findings, however, show the contrary. The Act-department and department of Autism Adults, both from GGzE, incorporated complete opposite coordination practices. This implies that there is something more influencing the way coordination is initiated at the departments, besides organizational characteristics. One such influence might be the organizational climate, which can be seen as a bridge between the organizational characteristics and individual behavior (Guldenmund, 2000). The organizational climate encompasses a “wide range of individual evaluations of the work environment” (Neal, Griffin & Hart, 2000, p. 100). Compared to organizational culture, the climate stems from perceived feelings of organizational members, whereas culture entails the shared values and beliefs among employees (Guldenmund, 2000). In the paper of Guldenmund (2000) is also explained that the climate will ultimately lead to the culture of the organization. With the organizational culture representing the entire organization, the concept *organizational* climate also implies organization wide representation, although, it might only entail the evaluation of direct work environments like the departments investigated. This organizational climate influences the behavior of employees and influences the way in which they communicate and interact (Guldenmund, 2000). The differences seen between the Act-team and the department of Autism Adults might, therefore, be explained because of different organizational climates within those departments, fostering different ways of communicating.

Including the theory of Gittell (2002a) of relational coordination to recognize coordination practices within the departments, also leaves room for discussion. The communication and relationships among employees of the department might be influenced by a concept like psychological safety, which affects the coordination practice of that department. Edmondson (1999) defined psychological safety as a shared belief of safety which stimulates employees to ask for help, admit errors and seek feedback without the treat that the organization, team or department will punish someone for speaking up. Following this definition, operational leveled employees will probably share their opinions and take initiatives sooner when psychological safety is guarded within the department. Therefore, within a department containing psychological safety, horizontal coordination will be fostered, as at the departments of the Act-team and Autism of GGz Breburg. The department of Autism Adults coordinates according to a vertical dimension, where employees are only trying to survive and deal with the high work pressures, as employees explained during the interviews. The need to survive and high work pressure tends to a situation where the psychological safety is low. Psychological safety is related to mutual respect among employees and the sharing of knowledge (Edmondson, 1999), which elucidates a relation between psychological safety and the quality of relationships within a department. So, when there is psychological safety within a department, this will enhance high-quality relationships. As is presented in this paper, high quality relationships foster communication in non-programmed settings. This would entail that the water cooler talk

coordination practice would reflect the department with the highest psychological safety. The Act-department incorporated this coordination practice, also being the department where employees communicate actively about all work related subjects. The predicted influence of organizational characteristics on the way departments coordinate their care pathways, is possibly overruled by the influence of the organizational climate and psychological safety within a department.

6.1.3 Transformation over time

The theory of Vissers and Beech (2005) explained that short term involvement of operational leveled employees within the coordination practice, must be balanced with interests of the strategic and tactical level of the organization in the long run, to secure sustainable performance. This theory is supported by supply chain management literature which states that chain wide performance is secured when coordination is initiated by strategically leveled employees (McCone Sweet et al., 2005). There is some logic behind this, as the dependencies between the care pathways only form a problem when they are not managed well, so when the cooperation or collaboration between the pathways is bad. As managers or highly stated employees oversee the consequences that problems between departments might cause for the entire chain, it must be recommended that strategically leveled employees need to coordinate when striving for sustainable performance. So, when looking at the findings of this research some questions raise. The proposed change that Vissers and Beech (2005) explained is not second by the results of this study. Two departments do not intend to change of coordination practice, and the one department that does presents a change, is moving towards a more horizontal dimension and by that contradicts the conclusion of Vissers and Beech. Besides the department of Autism Adults, the other two departments investigated present no change in practice and stick to a horizontal coordination dimension. It is already explained that the horizontal approach stimulates knowledge sharing among employees, which stimulates coordination, but stating that this aspect would overrule the necessity of strategically leveled coordination with regard to sustainable performance gains, seems rash. So what else could make the departments choose a horizontal approach? One possibility could be that the strategic and tactical level of the organization are not included enough in the operational processes to be able to manage dependencies between separated parts within this process. The knowledge based theory of the firm of Grant (1996) seconds this idea. Grant (1996) explains that to initiate coordination, people need some knowledge about the dependencies that needs management and because knowledge might be tacit and hard to transfer, the strategic levels of an organization are not capable to inherent this knowledge. Therefore, it is advised to look closely at the dependencies that need management and when these dependencies are not fully understand by management, coordination should be initiated operationally. Assuming that the dependencies at the departments of Autism Adults, Act-team and Autism of GGz Breburg all comprehend knowledge possessed only by operational leveled employees, the horizontal coordination practice would make sense.

This notation of Grant implies that the degree in which strategic and or tactical leveled employees encompass the knowledge needed to manage the dependencies determines which dimension of horizontal or vertical coordination is applied. This explains why the applied (or almost applied) coordination practices of the departments have a horizontal dimension, but is does not explain why a department would change toward a more horizontal dimension. This could be caused by a change in personnel at the tactical or strategic level of the organization, with these new employees not incorporating the required knowledge, knowledge their predecessors did entail. For example, at the department of Autism Adults, the CCP-employee, working at the tactical level, incorporated a lot of knowledge from the operational leveled employees. This assembling and understanding of information is a personal asset and interest of her (she explained during the interview). So when she decides to leave the organization, and would be replaced by an employee without these assets, the department would be forced to incorporate a horizontal approach because the required knowledge for managing the dependencies is no longer available at the tactical level. But during the research, no

such change in personnel was discussed, leaving a gap in the explanation why the organization would change to a more horizontal approach. During the interviews, the employees of the department of Autism Adults mentioned, that being productive was more important than a few years ago. The increased work pressure and thereby stress perceived by the employees provoked them to incorporate a more horizontal coordination approach. The study of Entin and Serfaty (1999) seconds this finding explaining that team would incorporate other forms of coordination in situations of high workload and stress. In these situations, the most effective form of coordination is desired, so more time can be spend on actually doing the job. Essential to coordination is knowing where the dependencies are located, with communicating as the main form to initiate coordination. Entin and Serfaty (1999) explain that the most effective form of coordination is implicit coordination, where extensive communication is limited due to mutual mental models. With mutual mental models, employees obtain information about the actions and needs of colleagues, necessary to coordinate these actions, without explicit communication. Acquiring these actions and needs without extensive communication indicates horizontal coordination practices, as operational levelled employees need only a few interactions which are highly problem-solving, accurate and timely of content. Following this research, the transformation of coordination practices might mostly be reliant on the context the department is working in, with stressful and high work pressure contexts asks for a more horizontal coordination practices then other contexts.

6.2 Limitations

There are some limitations to define with regard to the research. An assumption in literature about care pathways is the causal relationship between the pathways (Joosten et al., 2007). For example, the pathway of diagnosis leads to the treatment pathway, which leads to the client leaving the department (see figure 1, at the introduction of the research). Within the mental healthcare context, this causality is harder to realize. Some clients receive diagnosis at other organizations, before admitting to the department, where other clients choose to only receive the care provided in the diagnosis phase of the care program without proceeding to treatment. Besides these examples, there are more options for clients not to go through the care program as predicted. Without this causal relationship it is harder to implement and work according to the care pathways (Joosten et al., 2007), but it also makes it harder to compare the care programs of the mental healthcare context with the supply chains present within the manufacturing context. In current research, the dependencies between care pathways are explained through the comparison with supply chains, and with the relationship being questionable; the dependencies between pathways could be less pressing than originally thought. This is a limitation, but with the findings of current research indicating dependencies between the pathways, the worthiness of the research is secured.

A second limitation of the research is the choice of theoretical framework. Coordination is described according to two dimensions, but more dimensions are available. Also the characteristics to recognize the coordination practices are chosen according to relevant literature but other characteristics are available within coordination literature as well. The limitation is that the choice of the researcher to include these dimensions and characteristics led to the described conclusions, with the possibility that these findings and conclusions could be different when other choices would be made. Regard the dependencies, for example. Within recent study, the three types of dependencies of Malone and colleagues (1999) are chosen, to name: flow, sharing and fit dependencies. These types are used to describe the possible dependencies within the care programs of the departments as well, stating the importance to implement coordination activities at the departments. Another possibility would be to describe dependencies according to the research of Thompson (1967). Thompson (1967) described interdependencies to be pooled, sequential or reciprocal, which can be coordinated through strategies like standardization, planning and mutual adjustment. When this line of though would be followed, the research would be very different, as it would be when other coordination dimensions or characteristics were included. The theoretical framework of current

research might present a limitation, however including the most relevant and available literature possible. This limitation raises the question if theories about coordination are complete, sufficient or maybe in need of elaboration or tailoring to indicate coordination within the mental healthcare context. This idea is furthered emphasized in the recommendations.

The other limitations focus more on the chosen methods of the study. First of all, gathering the data according to the narrative approach has its disadvantages. The story employees told, about the coordination practices at the department might not be the entire truth or even the entire story to tell about the department. This liability is diminished by including several employees to describe the coordination practice of one department. The research of Riley and Hawe (2005) argues that the narrative approach to research brings even more advantages then there are possible liabilities.

The fourth limitation regards the generalizability of the research. The three investigated cases present an indication of coordination within a mental healthcare context, through generalizability to other departments within mental healthcare, or other contexts needs some caution. Especially the conclusion that three departments coordinate in three different ways indicate that coordination within other departments, organizations or contexts might be different as well.

The last limitation considers the possibility that the research findings and conclusions are influenced by the personal interpretation of the researcher. Objectivity is almost impossible, Singleton and Straits (2010) explained, due to the interpretation of findings without consciously being aware of possible interpretations. The objectivity of the conclusion of this research is limited. It is recommended that the measurement done in this research, should be conducted by other researchers as well, determining the intercoder reliability, the level of agreement, between the findings (Singleton & Straits, 2010).

6.3 Recommendations

Current research suggests some directions for future research and provides some practical advises to organizations dealing with dependencies within their work processes. These recommendations are explained below.

6.3.1 Recommendations for future research

A research about how the dependencies within care programs are managed is presented in the paper. Current research provides no insights or indications of the effectiveness of the coordination practices at the departments and its contribution to increase performance goals of the departments. For organizations and for research it is interesting to obtain information about the performance outcomes of each coordination practice presented in current research. It would be interesting to know if and how the coordination practices influence the productivity or profitability of work processes. Even more interesting would be, to investigate the most efficient coordination practice given a certain situation. To do this, attention must be given to the actual costs of performing a particular coordination practice, the effectiveness of coordination on managing the dependencies, the effects of coordination practices on the performance outcomes of a department, while regarding the contexts and situations in which these practices are applied.

Future research must also provide insights in the proposed relationship between the organizational climate, psychological safety and the coordination practice of a department or organization. Not enough research is done to state the way in which the organizational climate and psychological safety affects coordination initiatives. For instance, Edmondson (1999) states that psychological safety enhances high quality relationships, while Carmeli and Gittell (2009) explain that high quality relationships (e.g. relational coordination) positively influence psychological safety among

employees. Future investigations might give more attention to the relationships between these concepts.

The investigation of the transformation of coordination leaves some unanswered questions. It is unclear if coordination changes over time, even though presented theory does indicate some form of change. Research can focus on how, why and when coordination changes. Are coordination practices chosen according to the context in which organizations are positioned? So, are coordination practices a strategic choice of organizations? Or, is it dependent upon the knowledge of employees within the department and therefore, not consciously chosen but determined by the assets the department possess?

The differences in the way the three departments of this research coordinate their care program indicate that more cases need to be studied to create some generalizable theory about coordination at mental healthcare organizations. During the research presented in this paper, the theoretical framework is a gathering of several scientific findings. To increase generalizability, it is recommended to study coordination in a unified way. To construct a correct theoretical framework to research coordination, more empirical research must be done.

6.3.2 Recommendations for practice

Some practical suggestions can be recommended because of this research. First of all, when comparing the two mental healthcare organizations, it is noticed that a technical system like Value Care of GGz Breburg offers several advantages. It enhances the use and effectiveness of care pathways, and it is also indicated that coordination is more cost efficient when supported by a technical system. For these reasons it is recommended to design and implement a system when implementing an innovation or initiate coordination activities. It is possible that currently used systems are already effective to use as a coordination tool, if this system is, indeed, understandable for all employees and provides clarity and awareness on dependencies between parts of the process.

Regarding the awareness and knowledge about dependencies, it is important that this is shared throughout the whole organization and not limited to one hierarchical level or even one or two employees. Effective coordination requires involvement of all hierarchical levels, and dependencies can only be managed when they are noticed. It will request some effort and continuous attention within the organization. As organizational changes often need a change agent, Gittell (2000) suggest that coordination needs a supervisor. Gittell (2000) explains that these supervisors have the ability to observe behaviors, to provide feedback and to share organizational wide goals, which assists in managing highly complex and interdependent processes.

7. References

Argote, L. (1982). Input Uncertainty and Organizational Coordination in Hospital Emergency Units. *Administrative Science Quarterly, 27,* 420-434. Doi: 10.2307/2392320

Aronsson, H., Abrahamsson, M., & Spens, K. (2011). Developing Lean and Agile Health Care Supply Chains. *Supply Chain Management: An International Journal, 16,* 176-183. Doi: 10.1108/13598541111127164

Bahinipati, B.K., Kanda, A., & Deshmukh, S.G. (2009). Coordinated Supply Management: Review, Insights, and Limitations. *International Journal of Logistic: Research and Applications, 12,* 407-422. Doi: 10.1080/13675560802476382

Barbieri, A., Vanhaecht, K., Van Herck, P., Sermeus, W., Faggiano, F., Marchisio, S., & Panella., M. (2009). Effects of Clinical Pathways in the Joint Replacement: a meta-analysis. *BMC Medicine, 7.* Doi: 10.1186/1741-7015-7-32

Campbell, H., Hotchkiss, R., Bradshaw, N., & Porteous, M. (1998). Integrated Care Pathways. *BMJ, 316,*133-137

Carmeli, A., & Gittell, J.H. (2009). High-Quality Relationships, Psychological Safety, and Learning from Failures in Work Organizations. *Journal of Organizational Behavior, 30,* 709-7029. Doi: 10.1002/job.565

Christopher, M. (2000). The Agile Supply Chain: Competing in Volatile Markets. *Industrial Marketing Management, 29,* 37-44. Doi: 10.1016/S0019-8501(99)00110-8

De Allegri, M., Schwarzbach, M., Loerbroks, A., & Ronellenfitsch, U. (2011). Which Factors are Important for the Successful Development and Implementation of Clinical Pathways? A Qualitative Study. *BMJ Quality & Safety, 20,* 203-208. Doi: 10.1136/bmjqs.2010.042465

Deneckere, S., Euwema, M., Van Herck, P., Lodewijckx, C., Panella, M., Sermeus, W., & Vanhaecht, K. (2012). Care Pathways Lead to Better Teamwork: Results of a Systematic Review. *Social Science & Medicine, 75,* 264-268. Doi:10.1016/j.socscimed.2012.02.060

De Vries, J., & Huijsman, R. (2011). Supply Chain Management in Health Services: An Overview. *Supply Chain Management: An International Journal, 16,* 159-165. Doi: 10.1108/13598541111127146

Edmondson, A. (1999). Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly, 44*, 350-383. Doi: 10.2307/2666999

Entin, E.E., & Serfaty, D. (1999). Adaptive Team Coordination. *Human Factors, 41,* 312-325. Doi: 10.1518/001872099779591196

Evans-Lacko, S., Jarrett, M., McCrone, P., & Thornicroft, G. (2010). Facilitators and Barriers to implementing Clinical Care Pathways. *BMC Health Services Research, 10,* 182-187. Doi: 10.1186/1472-6963-10-182

GGz Breburg (n.d.). In *Over GGz Breburg.* Retrieved from http://www.ggzbreburg.nl/Over-GGz

-Breburg.aspx

GGzE (2012). *Jaardocument 2012.* Retrieved from http://www.ggze.nl/sites/ggze.nl/files/jaardocument_ggze_2012_publiek.pdf

Gittell, J.H. (2000). Paradox of Coordination and Control. *California Management Review, 42,* 101-117

Gittell, J.H. (2002a). *A Relational Theory of Coordination: Coordinating Work through Relationships of Shared Goals, Shared Knowledge and Mutual Respect.* In Relational Perspectives in Organizational Studies by Kyriakou, O., & Özbilgin, M.F. (2006). Cheltenham, UK: Edward Elgar Publishing Limited

Gittell, J.H. (2002b). Coordinating Mechanisms in Care Provider Groups: Relational Coordination as a Mediator and Input Uncertainty as a Moderator of Performance Effects. *Management Science, 48,* 1408-1426

Gittell, J.H. & Weiss, L. (2004). Coordinating Networks Within and Across Organizations: A Multi-level Framework. *Journal of Management Studies, 41,* 127-153.

Goedee, J., & Entken, A. (2008). *(Ont)keten. Implementeren van Werken in Ketens.* Den Haag, the Netherlands: Uitgeverij LEMMA

Grant, R.M. (1996). Toward a Knowledge-Based Theory of the Firm. *Strategic Management journal, 17,* 109-122.

Greenhalgh, T., Robert, G., MacFarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of Innovations in Service Organizations: Systematics Review and Recommendations. *The Milbank Quarterly, 82,* 581-629.

Grol, R., & Grimshaw, J. (2003). From Best Evidence to Best Practice: Effective Implementation of Change in Patients' Care. *The Lancet, 362,* 1225-1230. Doi: 10.1016/s0140-6736(03)14546-1

Guldenmund, F.W. (2000). The Nature of Safety Culture: a Review of Theory and Research. *Safety Science, 34,* 215-157.

Hoffart, N., & Cobb, A.K. (2002). Assessing Clinical Pathways Use in a Community Hospital: It Depends on What 'Use' Means. *The Joint Commission Journal on Quality Improvement, 28,* 167-179.

Joosten, T.C.M., Bongers, I.M.B., & Janssen, R.T.J.M. (2009). Application of Lean Thinking to Health Care: Issues and Observations. *International Journal for Quality in Health Care, 21,* 341-347. Doi: 10.1093/intqhc/mzp036

Joosten, T.C.M., Bongers, I.M.B., & Meijboom, B.R. (2007). Care Programmes and Integrated Care Pathways. *International Journal of Health Care Quality Assurance, 21,* 427-486. Doi: 10.1108/09526860810890440

Joosten, T.C.M. (2012). *Redesign in Mental Healthcare. An Exploratory Study into the Effects of Redesign on Multiple Areas of Performance in Mental Healthcare.* Ridderkerk, the Netherlands: Ridderprint BV

Kato, T., & Owan, H. (2011). Market Characteristics, Intra-Firm Coordination, and the Choice of

Human Resource Management Systems: Theory and Evidence. *Journal of Economic Behavior & Organization, 80,* 375-396. Doi: 10.1016/j.jebo.2011.04.001

Khandaker, G.M., Gandamaneni, P.K., Dibben, C.R.M., Cherukuru, S., Cairns, P., & Ray, M.K. (2013). Evaluating Care Pathways for Community Psychiatry en England: a qualitative study. *Journal of Evaluation in Clinical Practice, 19,* 298-303. Doi: 10.1111/j.1365-2753.2012.01822.x

Lambert, D.M., & Cooper, M.C. (2000). Issues in Supply Chain Management. *Industrial Marketing Management.29,* 65-83. Doi:10.1016/S0019-8501(99)00113-3

Li, X., & Wang, Q. (2006). Coordination Mechnisms of Supply Chain Systems. *European Journal of Operational Research, 179,* 1-16. Doi: 10.1016/j.ejor.2006.06.023

Malone, T.W., & Crowston, K. (1990). What us Coordination Theory and How Can It Help Design Cooperative Work Systems? *CSCW 90 Proceedings,* 357-370. Doi: 10.1145/99332.99367

Malone, T.W., & Crowston, K. (1994). The Interdisciplinary Study of Coordination. *ACM Computing Surveys, 26,* 87-119. Doi: 11.1145/174666.174668

Malone, T.W., Crowston, K., Lee, J., Pentland, B., Dellarocas, C., Wyner, G. … O'Donnell, E. (1999). Tools for Inventing Organizations: Toward a Handbook of Organizational Processes. *ManagementScience, 45,* 425-443.

McDonald, K.M., Sundaram, V., Bravata. D.M., Lewis, R., Lin, N., Kraft, S.A. … Owens, D.K. (2007). *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies (Vol. 7: Care Coordination)* (Report No: 04(07)-0051-7). Retrieved from the Agency for Healthcare Research and Quality: http://www.ncbi.nlm.nih.gov/books/NBK44015/

McKone-Sweet, K. E., Hamilton, P., & Willis, S. B. (2005). The Ailing Healthcare Supply Chain: A Prescription for Change. *The Journal of Supply Chain Management, 41,* 4-17. Doi: 10.1111/j.1745-493X.2005.tb00180.x

Mentzer, J.T., DeWitt, W., Keebler, J.S., Min, S., Nix, N.W., Smith, C.D., & Zacharia, Z.G. (2001). Defining Supply Chain Management. *Journal of Business Logistics, 22,* 1-25. Doi: 10.1002/j.2158-1592.2001.tb00001.x

Min, H., & Zhou, G. (2002). Supply Chain Modeling: Past, Present and Future. *Computers & Industrial Engineering, 43,* 231-249. Doi: 10.1016/S0360-8352(20)00066-9

Neal, A., Griffin, M.A., & Hart, P.M. (2000). The Impact of Organizational Climate on Safety Climate and Individual Behavior. *Safety Sciene, 34,* 99-109.

Nidumolu, S.R. (1996). A Comparison of the Structural Contingency and Risk-Based Perspectives on Coordination in Software-Development Projects. *Journal of Management Information Systems, 13,* 77-113

Renholm, M., Leino-Kilpi, H., & Suominen, T. (2002). Critical Pathways: a systematic review. *Journal of Nursing Administration, 32,* 196-202. Doi: 10.1097/00005110-200204000-00008

Riessman, C.K. (1993). *Narrative Analysis*. California, the United States of America: Sage publications, Inc.

Riessman, C.K., & Quinney, L. (2005). Narrative in Social Work: A Critical Review. *Qualitative Social Work, 4,* 391-412. Doi: 10.1177/1473325005058643

Riley, T., & Hawe, P. (2005). Researching Practice: the Methodological Case for Narrative Inquiry. *Health Education Research, 20,* 226-236. Doi: 10.1093/her/cyg122

Ritchie, J., & Lewis, J. (2003). *Qualitative Research Practice: a Guide for Social Science Students and Researchers.* London, England: Sage

Rogers, E.M. (1995). *Diffusion of Innovations.* New York, the united States of America: Free Press

Sermeus, W., Vleugels, A., Vanhaecht, K., Alewaters, H., Glorieux, A., Van Gerven, E., Heyrman, J., Aertgeerts, B., De Lepeleire, J., & Peers, J. (2009). Onderzoek naar de Toekomst van Transmurale Zorgpaden binnen Vlaanderen. Leuven: KUL. Retrieved from Kenniscentrum WVG:https://wvg.vlaanderen.be/applicaties/kenniscentrum/themas/gezondheid/rapport.asp?id=138

Singleton, R.A., & Straits, B.C. (2010). *Approaches to Social Research.* New York, the United States of America: Oxford University Press.

Thompson, J.D. (1967). *Organizations in Action: Social Science Bases of Administrative Theory.* New York, the United States of America: McGraw-Hill Book Company

Tsai, W.P. (2002). Social Structure of 'Coopetition' within a Multiunit Organization: Coordination, Competition and Intraorganizational Knowledge Sharing. *Organization Science, 13,* 179-190. Doi: 10.1287/orsc.13.2.179.536

Van de Ven, A.H., Delbecq, A.L., & Koenig, R. (1976). Determinants of Coordination Modes within Organizations. *American Sociological Review, 41,* 322-338

Vanhaecht, K., Bollmann, M., Bower, K., Gallagher, C., Gardini, A., Guezo, J. … Panella, M. (2006). Prevalance and Use of Clinical Pathways in 23 Countries: an International Survey by the European Pathway Association. *Journal of Integrated Care Pathways, 10,* 28-34. Doi: 10.1258/j.jicp.2006.124

Vanhaecht, K., Panella, M., Van Zelm, R., & Sermeus, W. (2010). An Overview on the History and Concept of Care Pathways as Complex Interventions. *International Journal of Care Pathways, 14,* 117-123. doi: 10.1258/jicp.2010.010019

Vissers. J. & Beech, R. (2005). *Health operations Management: Patient Flow Logistics in Health Care.* London, Great Britain: Routledge Taylor & Francis Group

Willem, A., Buelens, M., & Scarbrough, H. (2006). The Role of Intra-Unit Coordination Mechanisms in Knowledge Sharing: A Case Study of British MNC. *Journal of Information Science, 32,* 539-561. Doi: 10.1177/01655551506067128

Appendices

The appendices of this paper are presented in this section.

Appendix A
This appendix presents the operationalization table as introduced in chapter 3, the methodological framework

Appendix B
An example of an event history calendar, as used for the interviews at the department of Autism Adults at GGzE, is portrait. This appendix is announced in chapter 3.

Appendix C
Table 6 explains which labels are used during the labeling of the transcripts. Table 7 presents an example of this labeling, with table 8 displaying how the labelled parts of the transcripts are gathered within one table to structure the data. All transcribe interviews, labelled interviews and excel documents with the gathered information, can be asks by the researcher.

Appendix D
This last appendix includes the results tables of the three departments. Each department has two tables. First, the tables of center Autism Adults of GGzE are presented, followed by the results tables of the Act-department of GGzE and the results tables of center Autism of GGz Breburg. The information presented in this table is elaborated upon in chapter 4.

Appendix A: Operationalization table

Definition of coordination		Characteristics	Elaboration	Starting questions	Probe questions	Elaboration questions
"the act of managing interdependencies between activities performed to achieve a goal" (Malone & Crowston, 1990, p. 361	**Dependencies**	Fit	several activities produce the same resource together	Can you tell me who you are and what you do at the department?	• Can you tell me about your function and tasks within the department?	Can you elaborate about that?
		Flow	one activity produces a resource that is needed by another activity		• What are your activities on a working day within the department?	What does that entail?
		Sharing	several activities use one resource		• What is the goal of your work?	Can you give me an example for that?
	Vertical/ horizontal dimension	Employees	Operational	How is the collaboration at the department?	• With whom and when do you collaborate?	
			Tactical		• Are there specific meeting you participate in?	
			Strategic		• If you have a question or problem, when and where do you pose that question?	
	Programmed/ non-programmed dimension	Communication	Frequency and timeliness		• Can you tell me something about the communication?	
			Accuracy		• Do you interact with other colleagues about your work?	
			Problem-solving	How is a client guided through the care process?	• Can you tell me what the next step of a client is in his or her care process?	
		Relationships	Shared goals		• To whom can the client address when a question rises?	
			Shared knowledge	What do you know about the care pathways at your department?	• What influence did the pathways have in your work?	
			Mutual Respect		• Did the pathways influence the collaboration and or communication at the department?	
	Other	Pathways elaborations	Information provided by interviewees concerning care pathways		• What are the effects of pathways for the client?	
					• Are there differences in the way client are guided through their care process because of the pathways?	

Table 5. Operationalization table

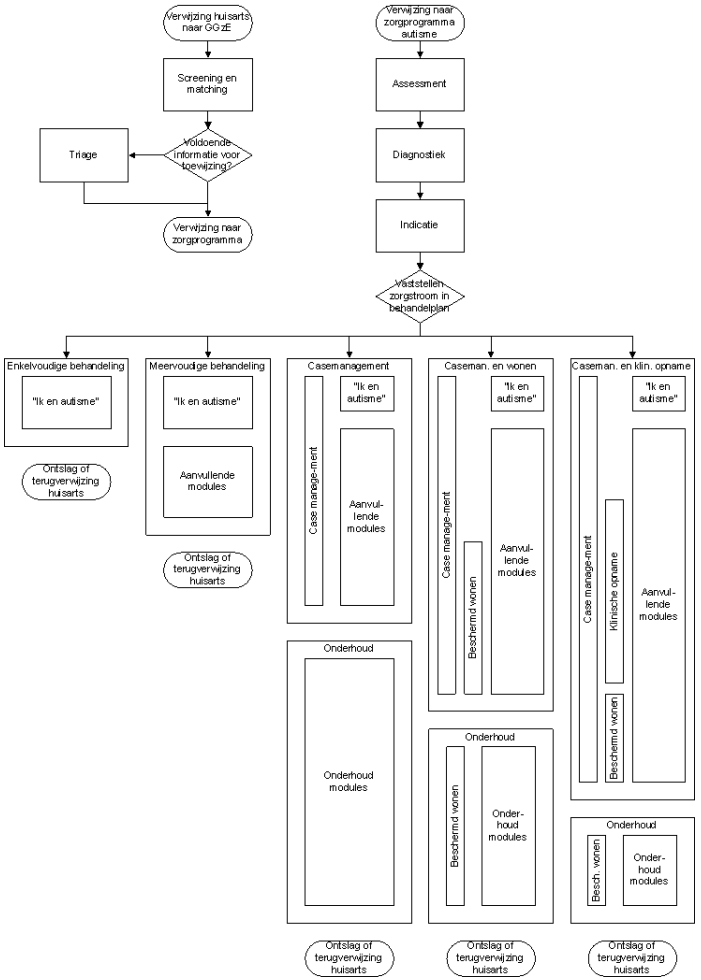
Appendix B: Event history calendar

The presented event history calendar is the document used to inform employees of the Center of Autism Adults before retrospective interviews are held.

De ontwikkeling van zorgpaden bij GGzE

GGzE richt zich al enige tijd op de zorglogistiek van de zorg die de organisatie levert. De klinische paden zijn een methode om deze zorglogistiek te organiseren. Deze klinische paden zijn per 2007 bij GGzE geïntroduceerd, ontwikkeld en geïmplementeerd. Deze klinische paden hebben betrekking op een goed gedefinieerde cliëntgroep gedurende een goed gedefinieerde tijdsduur. Het doel van deze paden is het verbeteren van de kwaliteit van zorg, verminderen van risico's en verhogen van de cliënttevredenheid. Tot 2011 werden klinische paden vooral gebruikt bij de voorbereidende fases van een behandeling (zoals intake, assessment en diagnostiek).

Hieronder zie je een plaatje van de zorgstromen bij Autisme. Voor assessment en diagnostiek zijn nog lopende zorgpaden ontwikkeld. Bij het deel van behandeling ging dat wat minder succesvol.



Eind 2008 bleek dat de wachttijden bij Autisme nogal fors waren en dat de instroom van cliënten niet soepel verliep. Het ontwikkelen van zorgpaden kon hierbij helpen. Eind 2008 is een projectteam samengesteld die eerst een zorgpad assessment en diagnostiek zouden ontwikkelen. Om dit te kunnen doen werd eerst de hulpvraag van de cliënt in kaart gebracht, waarna bekeken kon worden welke acties er uitgevoerd werden en binnen welk tijdsbestek dit plaats moest vinden. Er werd gewerkt volgens het 30-stappenplan van Vanhaecht. In januari 2009 werd de pilot gestart en in juni 2009 werd de eerste meting verricht. In april 2010 werden opnieuw metingen verricht bij de klinische paden assessment en diagnostiek. Voor de behandelingsfase van het zorgtraject was het wat moeilijker op een klinisch pad te ontwikkelen. Problemen die hier ontstonden was het koppelen van een vaste actie, tijd en persoon. Een klinisch pad voor behandeling is daardoor niet in gebruik genomen.

Appendix C: Labeling and assembling

Labeling
Frequency
Timeliness
Accuracy
Problem solving
Shared goals
Shared knowledge
Mutual Respect
Operational
Tactical
Strategic
Pathway elaborations

Table 6. Labeling options

E: haha, heel veel. Dat is ook heel veel, ik vind het heel leuk. Als je het de hulpverleners hier vraagt , dat klinkt heel arrogant, maar die zeggen dat altijd van: Rianne in de inhoudelijke spil ondersteuner van het centrum. Dus alles komt bij mij aan aanvragen. Dus extern, DAK, maar ook Grijze generaal, en intern. Als pietje hier vraagt van die en die cliënt is hier binnen het MDT besproken en ik moet een Mindfullness training. Dat komt ook weer bij mij op lijsten en als melding binnen het CCP. Dus alle stromen, instromen, komen bij mij. De doorstroom en de uitstroom.
M: Dus in het kort gezegd weet jij eigenlijk altijd waar een cliënt zit
E: ja een beetje wel, en dan besteed ik natuurlijk wel dingen aan hiernaast uit, aan het secretariaat, want dat kan ik niet allemaal in mijn eentje. Dus de brieven versturen en dingen. Maar de hele stroom ligt bij mij en van daaruit stuur ik aan.
M: dan kan ik ook zeggen dat heel het logistisch geregel zeg maar valt dan onder jouw verantwoordelijkheid?
E: ja.
M: hoort daar ook het vlak bij, dat jij weet, bijvoorbeeld bij behandelaars of bij personen die diagnostiek doen, die hebben dadelijk weer plek?
E: nee dat wordt geroosterd. Ja bij de psychologen, die geven dat aan en af en toe zijn er controles. Nee de diagnostiek wordt per twee maanden geroosterd. In de zomer drie maanden. Dus nu is het juli augustus september. Dan in juni vraagt Annelies als hoofd diagnostiek, die gaat zitten uitrekenen hoeveel cliënten ze kan hebben. Dus die zegt in haar team van welke, want ze heeft natuurlijk ook mensen die niet alleen diagnostiek doen, die zijn psycholoog. Dus dan wordt dat onderzocht, van nou. En dan zegt ze tegen mij eehm, ik kan voor deze drie maanden dertig mensen gebruiken. Nou dan ga ik naar de lijst en naar de dossiertjes uitzoeken. Want er zijn natuurlijk bepaalde mensen die hebben voorrang, dat is afgesproken in het CCP.
M: wat zijn daar de voorwaarden van?
E: er zijn verschillende criteria om een behandeling van binnen de GGzE verder te laten lopen, dus als het het crisis team is of het EKT. Die krijgen eits voorrang. Als ze vastlopen op het werk. Want dat is vaak dan al laat dat het UWV dan pas begint. Dat wordt goed nagekeken. en dan zitten er ook in elke roostering, in elk blok zeg maar van twee maanden zitten een paar mensen van buiten de regio en een paar mensen die een second opinion willen. Dus zo, die eerste verdeling ga ik doen. En dan hou ik er misschien nog 10 of 15 over en dan gaat het gewoon volgens het riitie.

Table 7. Example of labeling, a part of a transcript.

Assembling

Actors	Frequency	Timeliness	Accuracy	Problem Solving	Other	Shared Goals	Shared Knowledge	Mutual Respect	Pathway elaborations
Employee 1 Operational: I'm IPS coach at the department of autism. I provide individual treatment and therapy.									
Employee 2 Tactical:									

Table 8. Assembling the gathered findings of coordination components of a department, per employee.

Appendix D: Results table

Within the results tables thee outcomes of the interviews are presented. The coordination characteristics of employees, communication and relationships can be traced back in order to recognize which coordination practice best suits coordination at the department. Evolvements over time are displayed in the second tabled per department. This table also shows the tasks of each employee to indicate which level they represent and information about care pathways given by the employees of the department. Other subjects, talked about during the interviews, and relevant for the research are also summarized in this table.

Results department Autism Adults GGzE

Interactions	Involved employees	Frequency/timeliness	Problem-solving/shared goals + knowledge/mutual respect
Multidisciplinary meeting (MDT)	All disciplines, but not all colleagues of the department. Directed from above	Twice a week **Programmed**	• Receiving new insights for the approach of a client • These meetings provided more fluency for a client going through the care process.
Diagnostic meeting	All disciplines	Twice a month **Programmed**	• The complex cases are discussed
Client coordination point (CCP)	Quality coordinator, program coordinator, psychologist, employee CCP, other colleagues	Every week **Programmed/ non-programmed**	• Logistical process, client applications, next step within the care process for a client (placing them on waiting lists) receiving conclusions and advisements for colleagues • The CCP knows where clients are within the care process. Here waiting lists are monitored and a critical view on the content of care delivered for a client is given.
Treatment plans	All disciplines	Once a year per client **Programmed**	• To evaluate the care provided to a client and discuss further care • They are leading for the process of the client.
Between colleagues	Between colleagues	Dependent upon employee **Non-programmed**	• To ask questions about clients, how to proceed or handle a situation.
External organizations	Care coordinators and/or case managers	Unknown **Programmed**	• The care provided for a client.
Waiting list	Clients	Once **Programmed**	• Providing information for waiting list clients
Pathway development project group	Different disciplines of the department and one person from organizational level	Once a week/month became less **Programmed**	• Developing and implementing care pathways for the department • All parts of the care provided needed to be clear

Psychologist meeting	Psychologists	Unknown **Programmed**	• To help a colleague of the same discipline
Case manager meeting	Case managers	Unknown **Programmed**	• To help a colleague of the same discipline
CCP employee and quality coordinator	On center level	Every two months **Programmed**	• The policy of the center is discussed as well as the pathways

Table A.

Employees	• A healthcare psychologist is involved in the treatment and diagnostics phase of the process and can be part of the CCP. • Care coordinator and case manager entail information for the entire process. He sees clients about all the life areas. They are leading in the guidance of clients. They assemble the questions of the client and when necessary commence colleagues to answer them. • The quality coordinator looks at the logistical parts of the care process. • The employee of the CCP takes care of the input and throughput of clients. She is always noticed when clients take an next step. The employee of the CCP guards the overview. Input for the CCP meeting is presented through the advice and conclusions of colleagues. Before a client can go on with the care process, the CCP needs to agree on the action taken. They have an overview of the waiting list. • A psychologist is only working in the diagnostic phase of the process
Evolvement over time	• There were less planned meetings before. More things were arranged between colleagues, informal. • The department is looking more critical if the care they provide is the right one. • The treatment plan was only discussed with the client, not with other team members within the DMT • The care coordinator was introduced to reduce the waiting lists, but now we see that clients are more often in need of a case manager instead of a care coordinator. • Previously it was unclear who was linked to the client and why. This is becoming more standard, but still not all clients have a contact person. The capacity is the problem, it is not enough. There is more structure now. • First there was a lifeline approach, presuming clients to need help their whole life. Now there is a course of life approach, looking at the phase of life of the client and see if help is needed.
Pathway elaborations	• Pathways are directed top-down, caused by demands of health insurance companies, reducing waiting lists and becoming more efficient. • They provide clarity for the client and employees about what we are doing. It can be used to predict when room for new clients arises. • Pathways made us look more critical to the ending phase of treatment • It takes creativity out of employees • A pathway for treatment is not possible or at least very hard because we cannot predict how long client need treatment. • Eventually pathways are no longer used. Some employees don't even know what they entail, it seems that only the CCP is working with them. The times presented are not achievable, leading to the dismissing of those plans by employees. They are not flexible for capacity, so being sick is no option. • Care pathways provide clarity for the guidance of clients.

Other	• There is not a lot of collaboration within the department. Employees work alone, on islands of discipline. The multidisciplinary collaboration is rising. • Office: because the department is located in one building, sharing of knowledge is easier, but employees of one room represent one discipline • Because of increased work pressure, uncertainty and bad communication employees are focused on their own work, their own part of the care process. There is no time to look beyond your own part. • There is no standard procedure of who is the contact person for the client. Not all clients have a care coordinator or case manager. • The system USER should present employees information of clients who are linked to them, but it is difficult to retract this data.

Table B.

Results department Act-team GGzE

Interactions	Involved employees	Frequency/timeliness	Problem-solving/shared goals + knowledge/mutual respect
Morning meeting (MM)	With colleagues of one team (different disciplines) working that day	Every day **Programmed**	• All clients, possibility to share problem briefly • Mentioning every client keeps the focus on clients, without possibility of forgetting someone
Work meeting	All colleagues of the department	Once a month **Programmed**	• Organizational subjects important for the department
Intervention	Sub-teams of mixture between the two teams	Once a month **Programmed**	• To help and reflect on team members work practices and provide feedback
Theme	All team members	Once a month **Programmed**	• (Often) new organizational or care related aspects
Cases	All team members	Once a month **Programmed**	• To discuss clients more into detail • For these clients their process is discussed, leading to new care steps
Treatment plan	All disciplines related to the case.	Once every six months per client **Programmed**	• To evaluate past care process and discus next steps • This plan provides an overview of care delivered in the next 6 months
Multidisciplinary meeting	All colleagues	Several times a day or during MM **Non-programmed/ programmed**	• To compare, adjust or just tune into colleagues progress involving a client. • Provides insights of where a client is in the receiving of care of another colleague.
Other departments GGzE	Some employees of the department	Unknown **Non-programmed**	• To talk about clients receiving care at those departments but still in help at the team • To straighten the procedures between the department and the team in order to realize one continuous care process.
Psychologist meetings	Only for the psychologist	Unknown **Programmed**	• Job related aspects

Psychiatrists meeting	Between the two psychiatrists	Unknown **Programmed**	• About the team, clients, strategy and vision
Secretary	With client coordination point	Daily **Non-programmed**	• Administrative procedures • The client coordination point inspect if set times/dates are being followed.
Quality coordinator	Other departments, managers, directors	Several meetings on organizational level **Programmed**	
Team coordinator	Directors, quality coordinator	Unknown **Programmed**	• Business of the department, strategy, progress

Table A.

Employees	• The counselors and psychologist only focuses on their expertise and their part of the process • The quality coordinator gathers signals related to waiting lists and applications • The team coordinator is the link between the organization and the team, making sure that the signals received by the quality coordinator are received and acted upon. She secures the continuous process. • The secretary knows which clients enter and leave the care program of the department and keeps track of the set times for treatment plan and arranges meetings to discuss them. She is not always informed when these meetings are canceled, causing these meeting to be delayed or even forgotten • The community psychiatric nurse (SPV) assembles all care related questions of the client, commencing colleagues to provide care for these questions if he cannot do it by himself. Therefore he has a general view of the care process of a client. • The care coordinator is responsible to obtain the organizational requirements at the set times. He has the helicopter view, assembling the questions of the client and when necessary commencing colleagues to answer them.
Evolvement over time	• Less than a year ago there were some problems within the teams causing waiting times to arise. This is solved with a change of team members and appointing a team coordinator. Now the waiting lists are gone and the team is working to its full capacity. • Before the team was working according to own work methods without regard to the management. Administration was no main priority. Now more collaboration arises.
Pathway elaborations	• Most employees do not know what pathways are; let alone what the pathways of their department are. There are some set times for parts of the care process, but these times are not always obtained. • Other employees, who have knowledge about pathways, state that pathways provide clarity and should be used to streamline the care between ambulant and clinical care. • The target group makes it hard to hold on to previously set timeframes. For some clients the pathways are not suitable.
Other	• The department is a safe environment for employees with an informal character. Colleagues are very accessible. • The method used at the department (ACT) asks for a teamwork-approach therefore supporting the sharing of knowledge • Collaboration with other departments, internal and external, is difficult because of different cultures. • The office: The team works in a shared working place, making it very easy to share knowledge and receive insights in each other's work.

	• The Act-method asks for an integrative way of working, meaning that the caseload of the team is shared between its members, who react organically upon care questions. The team therefore guards the process. • Sometimes clients watched the process. • USER should be there to guard the process and help employees reminding of the set times. This program is hard to work with for the employees, very error-prone and not reliable. It enlarges the administration process, causing postponements or not accomplishing tasks.

Table B.

Results department Autism GGz Breburg

Interactions	Involved employees	Frequency/timeliness	Problem-solving/shared goals + knowledge/mutual respect
Treatment plan review (BPO)	All disciplines of the team. Separating the different locations	Every week, twice a year per client **Programmed**	• The progress of treatment is discussed as well as possible follow-up steps. • With the entire team a care process of a client is reviewed, leading colleagues to take responsibility for the progress. Productivity of employees is presented.
Multidisciplinary meeting (MDO)	All disciplines	every week **Programmed**	• Possible questions can be discussed with colleagues enabling the sharing of knowledge and experience between colleagues.
Policy meeting	Entire department of Autism	Once a month **Programmed**	• Not client related, but about policy aspects.
Colleagues	Colleagues	Once, twice a month **Non-programmed**	• To share experiences or ask for help on mostly practical aspects. To talk about pathways. • Sharing information about the progress of a client
Desk support	Colleagues	Unknown **Non-programmed**	• When a crisis emerges, employees can contact a colleague at the desk support
Employees and managers	Managers and employees	Unknown **Non-programmed**	• Employees can ask for a meeting with the managers when needed.
External organizations	Because of collaboration agreement	Unknown **Programmed**	• Because of collaboration agreement
Course meetings	Those employees providing that course	Unknown **Programmed**	• To streamline the courses provided at different locations.
Region meeting	Living practitioners and case manager of location Etten-Leur	Once a month **Programmed**	• To talk about clients within this region. Also pathways are discussed here • To streamline processes between practitioners and case managers
Board meetings	Manager business operations, the board of the organization and other managers	Unknown **Programmed**	• To discuss policy aspects, personnel aspects, finance and healthcare developments.

Managers	Manager treatment and manager business operations	Unknown **Programmed**	• About department related aspects, from care content to organizational aspects

Table A.

Employees	• The community psychiatric nurse concentrates on all life areas of a client and throughout their entire care process. • The case manager collects all care questions of a client and deploys these questions to colleagues when necessary. They have a helicopter view of the care process of a client and they are often the pathway planner. • The work and school related counsellor looks at this part of the care process, but entails information about the position of a client within the process • The therapist keeps a general view of the process and asks for help of other discipline when necessary, as the main task it to guide clients through the process. • The manager treatment keeps an eye on the waiting lists • The secretary entails limited knowledge about the progress of clients even through see is seen as the one keeping the department whole.
Evolvement over time	• Before pathways were introduced, the goals of treatment were not described as careful, leading some client to float within the process. • Before pathways were introduced client had one person who followed him throughout the care process, now several colleagues can be involved, creating a chance of devouring responsibilities. Therefore it became more important to link a contact person to a client; this issue is getting more attention.
Pathway elaborations	• The pathways are introduced to improve throughput times and to look more critical to the ending phase of treatment. • The pathways fit clients into the care provided, but individual care demand of a client should be included as well. Now there is no room for this individual attention. The needed care sometimes has no place within the pathway a client goes through. • Pathways provide a clear overview of what client can expect and make colleague more critical to what is necessary. • Waiting lists for diagnostics are too long, so this part of the process is outsourced. • Prolonging pathways is only possible with the right arguments. • Value care keeps an overview of the position of a client within the care pathway and gives notion when the end nears. • The productivity list of each employee presents how well everyone is doing in with regard to the pathways and providing care. • All clients within care pathways have a pathway planner, with the task to keep track on the progress of a client within the set timeframe. There is a system called pathway planner as well.
Other	• Communication about work processes might be increased, especially evaluations about the work process. • Communication from the top of the organization is often not clear for employees. • All employees have their own caseload with goals to achieve, working alone. Reporting about clients is therefore crucial. • Islands within the teams are (partially) caused by the geographical distance between the different locations Tilburg, Breda and Etten-Leur. • It is a bit unclear where boundaries between functions lie, as are the responsibilities per function.

Table B.