

# Interprofessional practice in primary care: development of a tailored process model

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**Purpose:** This study investigated the improvement of interprofessional practice in primary care by performing the first three steps of the implementation model described by Grol et al. This article describes the targets for improvement in a setting for children with complex care needs (step 1), the identification of barriers and facilitators influencing interprofessional practice (step 2), and the development of a tailored interprofessional process model (step 3).

**Methods:** In step 2, thirteen qualitative semistructured interviews were held with several stakeholders, including parents of children, an occupational therapist, a speech and language therapist, a physical therapist, the manager of the team, two general practitioners, a psychologist, and a primary school teacher. The data were analyzed using directed content analysis and using the domains of the Chronic Care Model as a framework. In step 3, a project group was formed to develop helpful strategies, including the development of an interprofessional process through process mapping.

**Results:** In step 2, it was found that the most important barriers to implementing interprofessional practice related to the lack of structure in the care process. A process model for interprofessional primary care was developed for the target group.

**Conclusion:** The lack of a shared view of what is involved in the process of interprofessional practice was the most important barrier to its successful implementation. It is suggested that the tailored process developed, supported with the appropriate tools, may provide both professional staff and their clients, in this setting but also in other areas of primary care, with insight to the care process and a clear representation of “who should do what, when, and how.”

**Keywords:** process mapping, pediatrics, interprofessional collaboration, implementation.

## Introduction

People with chronic, complex care needs are best served by a collaborative effort involving a variety of health care professionals operating in the community. Such interprofessional activities are poorly conceptualized, and different terms and definitions are used in research and daily practice.<sup>1-3</sup> In this study, the term “interprofessional practice” from the interprofessional framework described by Reeves et al<sup>1</sup> is used and defined as “interventions which are activities or procedures incorporated into regular practice to improve collaboration and the quality of care.”<sup>1</sup> In this research, the improvement of the interprofessional primary health care process is considered, with a focus on collaboration and coordination of care, client-centeredness, and the primary care context. Interprofessional collaboration has been a topic of great interest in the health care literature for a long time, although implementing this has been found difficult in many settings. Various theoretical frameworks, and theories have been developed

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to facilitate this.<sup>4-7</sup> The Chronic Care Model (CCM) has been frequently used to improve interprofessional delivery of chronic care, by means of system changes. Research has demonstrated its ability to improve health outcomes and improve the quality of care.<sup>7,8</sup> Therefore, this model was used in this research, to understand the current health care processes and improve the interprofessional practice.

The CCM incorporates six domains<sup>7</sup> that need to be considered by professionals working together:

1. Selfmanagement support: working collaboratively with clients and families to help them to acquire the skills and confidence to manage their own illness.
2. Clinical information systems: reminder systems to support practice guidelines, feedback to physicians, and administration for planning patient care.
3. Decision support: use of resources to improve the knowledge and skills of the health-care providers.
4. Delivery system redesign: a defined division of labor within the team (case management).
5. Health care organization: organizational interventions at a wider organizational level.
6. Community resources: use of available resources outside the organization.

Client-centered care can be recognized in the CCM, through the Selfmanagement support domain.<sup>9</sup> Mead and Bower<sup>10</sup> identified five requirements for good client-centered care. These were: taking a biopsychosocial perspective; the “patient as person;” the sharing of power and responsibility; the therapeutic alliance; and the “doctor as person.”

Interprofessional practice is especially difficult in primary health care. The term “primary care” also has a variety of connotations and is often used in a different way in different countries.<sup>11</sup> As practiced in The Netherlands, primary care is best described by the following definition:

Primary health care is care which provides integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.<sup>12</sup>

In The Netherlands, paramedical professionals, such as occupational therapists (OTs), physical therapists (PTs), and speech and language therapists (SLTs), work in primary care as individuals within private practices. Primary care, in The Netherlands, has little tradition of structured interprofessional collaboration. Professionals often work according to their own standards, without mutual consultation, and without collaboration. As a consequence, collaborative goals for the

clients are nonexistent, there is no coordination of the care process, and treatments are not well integrated.<sup>13</sup> This is highly unsatisfactory for both clients and professional staff, neither of whom has an overall view of the process. There is no shared understanding of the nature of the appropriate care, of the agencies responsible for delivering it, of the scheduling of this delivery, or of the methods by which it should be delivered.

In primary health care, there is a clear need for a proper interprofessional process in which collaboration, coordination, and client-centeredness are essential elements. In this study we focused not on the content of the treatment, but on the organizational and collaborative processes that support interprofessional, client-centered care. Such a change in interprofessional collaboration is complex and therefore, needs a systematic approach that supports systematic implementation in practice. For this purpose, the frequently used “implementation model” described by Grol et al was used.<sup>14,15</sup> Implementation is described by Grol et al as:

A planned process and systematic introduction of innovations and/or changes of proven value; the aim being that these are given a structural place in professional practice in the functioning of organizations in the health care structure.<sup>15</sup>

This model identifies five phases for the effective implementation of health care plans.<sup>15</sup> In this paper, we describe the first three steps of this model: (1) targets for improvement or change; (2) analysis of current care and setting; and (3) development of strategies to change practice. Because of time and financial constraints, we focused on these first three steps.

The aim of this study was to improve interprofessional practice, using the first three steps of the implementation model. The following research questions led this study:

- What are the targets for improvement of the current care process?
- What are the barriers and facilitators for interprofessional practice in the current care and setting?
- What strategies can be selected/developed to overcome these barriers and facilitate interprofessional practice in this context?

## Methods

### Setting for the study

The setting of this study was a primary care center for children with complex care needs, where multiple professionals treat children simultaneously. We used the umbrella term “children with complex care needs” to denote children who experience difficulties in several areas involving activity

and participation. Most of these children experience a lot of difficulties but have enough resources to receive regular primary education. They have difficulties in specific areas, such as motor skill, learning, and speech and language, as well as in more general areas that are emotional, behavioral, or social in nature. To meet the care needs of these children, many professionals in primary care, such as OTs, PTs and SLTs, can be involved. In The Netherlands, these professionals may work independently in separate locations or together in primary care centers as self-employed workers. The setting of our study was a primary care center, staffed by three OTs, two PTs, and one SLT. Most of the children were referred to the center by their general practitioner (GP). The GP was kept informed about the start, the progress, and the end of the therapy. Because the children's problems were often related to school activities, there was frequent contact between the therapists and school teachers as well. The professionals of the primary care center (OTs, PTs, and SLT) took the initiative to start this project, and they, together with a researcher (SS), formed a project group. This group was responsible for guiding the first three steps of the implementation model.

## Step 1: targets for improvement or change

In the first step, members of the project group informed one another about their experiences, needs, and wishes concerning interprofessional work in the primary care center. After this, together with the researcher, they agreed upon the aspects they thought had to be improved.

## Step 2: analysis of current care, target group, and setting

In the second step, the existing pattern of collaboration between the primary care professionals was analyzed using qualitative semistructured interviews, conducted by the primary researcher (SS). The purposive sampling method was used to collect participants. The aim was to gather information from all the stakeholders involved in treating children in this particular setting, so that a complete picture of care provision could be obtained. The stakeholders identified by the project group were:

- The parents of children receiving treatment from a number of professionals at the time of the study, or who had received such treatment in the previous 6 months
- OTs, PTs, and SLTs
- The manager of the center
- A psychologist from outside the center
- Primary school teachers

- GPs.

Apart from the interviews with the GPs and primary school teacher (which were conducted by telephone), all interviews were conducted face-to-face. All participants gave informed consent for the interviews to be audio taped and for the data gathered to be used anonymously.

Open-ended questions were asked about the collaboration in the care process, whereas directed questions were asked about the six domains of the CCM, for example, "How would you describe your current collaboration in the care process with the other professionals?" or "What hampers the collaboration with the other professionals in the care process?" The questions were adapted to the perspective of the particular stakeholder being interviewed. The interviews (which each lasted between 60 and 90 minutes) were audio taped, transcribed, and were then member checked for accuracy by the interviewees.

Following this, the interviews were subjected to a directed content analysis, using the domains of the CCM.<sup>16</sup> One researcher read and reread the interviews and selected text fragments related to the aims of the research. Then, the fragments were coded, using the components of the CCM as a framework. The codes were discussed with the members of the research team until a consensus was reached. These codes were then, using the fragments, described in terms of barriers and facilitators.

## Step 3: selection and development of strategies

The results of step 2 were used to inform the selection of strategy type and its contents. The project group decided that the strategies had to focus on the process of providing care and tools that supported this process. Also, a visual representation of the new coordinated, collaborative care process would be best suitable to provide clarification for professionals and parents. The method of process mapping (method suggested by the researcher) was used to develop an interprofessional process model. During process mapping, the core processes are identified and evaluated in terms of how the patients and professional staff interact within the system. It can be used before implementation, as a "blueprint" for the design of a new (health care) process – the visualized process model is the result of the process-mapping procedure. Generic symbols are used to present different sorts of actions (such as steps, decisions, and sequences) in the process model.<sup>6</sup>

During three of the project group meetings, the process mapping took place in an iterative way. The primary

researcher (SS) directed this process-mapping procedure. After each meeting, the developed documents were sent to, or discussed with other professional stakeholders with whom the project group worked, to incorporate their points of view. In the first meeting, the professionals discussed the ideal process for a client, from the first contact to the end of the care process. The researcher encouraged the professionals to illustrate their improvements of the process with case examples, for example “What would the ideal starting point be if client x would contact you again?” The professionals discussed the steps until consensus was reached and a new process model was developed. In the second meeting, the process model was again discussed, and some alterations were made. In this meeting the professionals also discussed the steps in the process, the division of tasks in each step, and the tools needed to support these steps. The professionals themselves developed some of the tools, as these were not available. In the last meeting, the professionals again discussed their care process and tools, and also developed an appropriate time frame for their situation.

## Results

In this section, the results of the three steps of the implementation process are described. Step 1 contains a short description of the agreed-upon targets for improvement. Step 2 describes the results of the qualitative semistructured interviews. In step 3, the process model that was developed is presented.

### Step 1: targets for improvement or change

The project group decided on three objectives for improved interprofessional practice:

1. Developing a shared care process, which informs both professionals and clients (parents).
2. Structured collaboration.
3. The client (child) is central in the care process.

### Step 2: analysis of current care, target group and setting

In the second step, 13 participants were interviewed: one OT, one SLT, one PT, five parents, the manager of the primary care center, two GPs, one psychologist, and one primary school teacher. The OTs, SLT, and PTs already consider themselves to be working as a team and are titled as such in the results. The results of the interviews are presented in

Table 1, where they are structured according to the domains of the CCM (and will be further described below).

#### Self-management support: collaborating with patients and families to help them acquire skills and confidence to manage their own illness

In the existing care process, treatment goals were not reported, there was no collaborative care plan, and there was a lack of transparency towards parents. The professionals each made their own treatment plan; these were not aligned and discussed between different professionals. Because the treatment goals were not reported in writing, these were subsequently not given to parents or to other professionals. Sometimes professionals discussed the treatment of children between themselves (after obtaining consent from the parents). However, the parents were not always well informed about the nature of this collaboration between professionals. All but one of the professionals thought more transparency towards parents was desirable. The satisfaction of parents regarding individual communications with professionals could be identified as a facilitator to support of self-management.

#### Clinical information systems: reminder systems for practice guidelines, feedback to physicians, and administration for planning patient care

The professionals did not use an electronic clinical information system. However, the professionals were of the opinion that this could enhance their communication and collaboration. The communication between professionals was unstructured – they would talk about clients incidentally or contact one another by telephone. They expressed the desire to have a structured communication, for example, in the form of a team meeting. The GPs were mostly unaware that the professionals tried to collaborate and even that they had contact with one another. The GP was not actively included in the collaboration between professionals and was only kept informed about the start, the progress, and the end of the therapy. As well, the referral to another discipline was not structured. One facilitator for collaboration was the availability of administrative support in the primary care center.

#### Decision support: improving the knowledge and skills of the health-care providers

The professionals indicated that no interprofessional protocols or guidelines were available for this group of children. Also, the professionals admitted that they lacked knowledge about the other disciplines, hindering effective referrals.

**Table 1** Results step 2: analysis of current care, target group, and setting

Domain	Barriers	Facilitators
Self-management support	No written report of treatment goals No collaborative care plan Lack of transparency (towards parents) about collaboration	Individual communication between professionals and parents
Clinical information systems	No use of digital clinical information system No structured communication between professionals GPs are sometimes not aware of the ongoing collaboration No integrated role for the GP Referral to another discipline is not structured	Administrative support is available
Decision support	No interdisciplinary protocol or guidelines available Lack of knowledge about other disciplines No multidisciplinary meetings	
Delivery system redesign	No structured care process No division of tasks No case manager Lack of leadership in the team	
Health care organization	Performance results are not monitored and measured	Joint consultation about the child All therapists working at the same location A lot of agreement within the team Mission statement exists for the team Team members trusting each other No competition between professionals
Community resources	No agreement about collaboration with community partners External collaboration is complex and time consuming Interdisciplinary treatment is not financially compensated Collaboration with teachers is unstructured	Desire for working with community partners Community partners are eager to collaborate

**Abbreviation:** GP, general practitioner.

They also mentioned that team meetings could enhance their knowledge about the other disciplines.

### **Delivery system redesign: a defined division of labor within the team (case management)**

The professionals described that in the existing care process, there was no structure and coordination. The children enrolled in different therapies, with different (sometimes even overlapping) procedures. The professionals described that they did not have a system for division of tasks for procedures that overlapped in different treatments. The professionals took initiatives to collaborate but did not know “who does what” and “when.” There was also no single contact person for the parents, and parents described having to give the same information repeatedly to different professionals. The professionals and parents reported they would like to appoint one person to be the first contact person and who would coordinate the whole care process, described by the professionals as a case manager. The professionals described that they found it difficult that there was no leader of the “team” of professionals with respect to the organization of collaboration. A lot of efforts undertaken to collaborate failed because there was no one who addressed responsibilities.

### **Health care organization: organizational interventions at a wider organizational level**

The professionals described that performance results, such as client satisfaction and accomplishment of treatment goals, were not measured. However, the participants also defined a lot of facilitators for their collaboration. For example the professionals occasionally held a meeting with both parents and another discipline present. Furthermore, most of the professionals (apart from the psychologist) worked at the same location, which may facilitate the organization of collaboration. The team of professionals working in the primary care center described that there was a lot of agreement within their team about how they want to work together, which was documented in a mission statement. Furthermore the team described they trusted one another and denied feeling any competition between the disciplines.

### **Community resources: use of available resources outside the organization**

The professionals of the team reported they would like to collaborate more with community partners. The school teacher and psychologist were motivated to work with the



team. However, both described that there was little agreement about the form of collaboration, and how and where in the care process they would be involved. The teams experience of the collaboration with these community partners was very valuable but also took a lot of time and organization. The time spent on the organization of collaboration (planning team meetings) and the actual collaboration (team meetings, contact by telephone) was not financially compensated.

### Step 3: selection and development of strategies

The project group discussed the steps needed to improve the interprofessional practice. They agreed, from consideration of the barriers and facilitators, that the focus would have to be on providing more structure in the care process for all stakeholders involved, in order to provide properly coordinated, client-centered, interprofessional practice. Therefore, two general strategies were chosen. These were, respectively, the development of an interprofessional process model using the method of process mapping and the development of tools needed to support the implementation of this process.

#### Development of the process model

The major issues that needed to be resolved were to define:

- What sort of care should be provided.
- When that care should be provided.
- Who would be responsible for providing each of the components of the care.
- With whom that person should be in communication.
- What tools are needed to provide that care.

During three project group meetings, the project group designed a process that was visualized in a process model in an iterative way and that incorporated these issues in a structured way (see Figure 1). The professionals decided that the process model had to be clear, specific, and also understandable for clients (and their family).

The professionals discovered that the treatment phases of the different disciplines overlapped and could be used to guide the interprofessional care process. These phases were: enrollment (first contact and making an appointment), examination (analysis of the problem and developing a treatment plan), treatment, and evaluation. In the process model map, the leftmost “Who” column indicates the division of labor within the team – that is, the participant responsible for the various actions. Three roles were identified, namely the professionals (OT, SLT, PT, GP, psychologist), the case manager (who is one of the professionals), and the parents

(and child). A case manager had to be assigned to every child and is responsible for coordinating the care process (a clear task description of this case manager had to be developed). The second “How” column indicates the tools necessary to perform the identified actions; it includes several different formats (documents). The middle column indicates the central “What.” All of the identified actions are necessary and therefore act as tools for process measurement. For example, tick-boxes can be used to indicate completed actions and therefore can act as a measure of progress. The fourth “Output” column indicates the output of the various actions; these are mostly reports (documents). The last “When” column serves as a timetable for the actions.

#### Development of tools to support the process

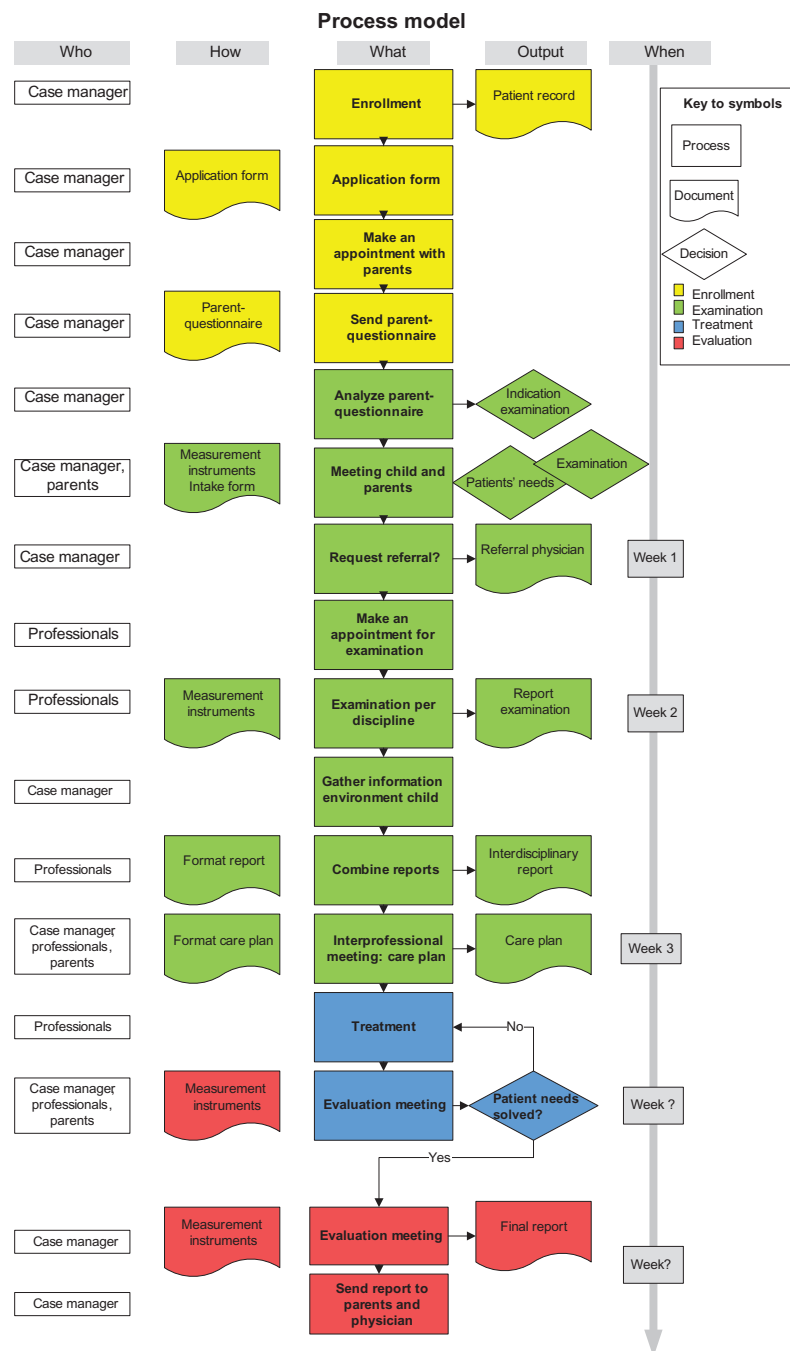
The next step was the development of tools to support the implementation of the process. These were chosen based on the barriers in step 2. Most tools were selected because of the need to gather interprofessional information about the client or for practical reasons (for eg, the application form). These tools were:

- Interprofessional application.
- Interprofessional parent questionnaire.
- Interprofessional intake form.
- Interprofessional report (based on examination phase).
- Collaborative care plan.
- Interprofessional meeting and a satisfaction inquiry (one of the measurement instruments).

### Discussion

In this report, an effort to improve interprofessional primary care is presented, following the first three steps of the “implementation” model of Grol et al.<sup>15</sup> The existing care, target group, and setting were intensively analyzed using qualitative semistructured interviews, resulting in a representation of barriers and facilitators. After this, an interprofessional process model, with necessary tools, was developed.

The barriers and facilitators affecting interprofessional primary care were identified using the CCM as a framework. Other research<sup>13,17–19</sup> aimed at developing interprofessional practice found similar barriers. They also acknowledged the inadequate unstructured communication that exists within the health care community and the lack of coordination within it. Gulmans et al,<sup>13</sup> investigating the collaboration existing in cerebral palsy care, reported that parents had to act as informal messengers between professionals. They also reported that a clear and explicit division of roles was lacking. Our research discovered similar problems. The problem of



**Figure 1** The visualized interprofessional practice process.

unclear role divisions was, in our exercise, addressed by the creation of the role of case manager. Many barriers to the provision of efficient interprofessional practice were identified, but not all could be overcome. One such was the lack of financial support required for the case manager.

Most barriers that were identified reflected the lack of structure and coordination in the existing organization of care provision. The development of the interprofessional process model, supported with tools, was the main strategy

used to ameliorate this situation. Barach and Johnson<sup>6</sup> argue that process mapping can be very useful for redesigning care provision and can be used in many types of scenarios. In the interprofessional framework of Reeves et al,<sup>1</sup> similar intervention types are presented, such as checklists, meetings, communication tools, forms, and pathways. However, they did not indicate practical strategies for primary care professionals regarding how to implement them, as this study does, using the visualized process model.<sup>14</sup> The great merit

of a process map is that it provides all parties involved with a clear and explicit representation of the various processes involved in the provision of interprofessional practice. The uniqueness of this study lies in its development of strategies that are both simple and practical, and which other professionals can develop to adapt to other contexts.

The data of the problem analysis was collected systematically, and data quality was ensured through the use of several different methods for its collection. During the development of strategies, there was a significant degree of involvement of professional staff. The interprofessional process was developed with only the core stakeholders. Other stakeholders were not involved, which could have influenced the feasibility of the process model. In the future, the care process can be improved and extended by involving other stakeholders. Parents also were not involved during the design of the process model. It is recommended that in future studies, clients should be involved during the development of a process map, should be equal partners in the project group, and should be involved in steps 4 and 5 of the implementation model. During the conduct of interviews and focus groups, and in the analyses of data, the principal researcher remained conscious of the danger that her own experiences, values, and background could distort findings and their interpretation.

This study involved a small group of professionals and child clients operating in a primary care setting. Generalization of the results to other settings is not automatically warranted. However, it is thought that several of the recommendations resulting from the problem analysis may be adopted by other private practices, disciplines, and patient groups functioning in the community.

The visualized process model provides an example of how the care process can be restructured, in a way that addresses complex interprofessional processes and that can be adapted for other settings. Identifying the “what,” “when,” “who,” and “how” of health care provision, and making this explicit for all stakeholders can be useful. However, because the process-mapping procedure described in this study was tailored to a specific setting, it may not be applicable to other client groups or settings. It is important that the medical and paramedical staff operating in primary care become more process and interprofessional oriented, when dealing with clients with complex needs.

## Conclusion

Although the effectiveness of the process model was not tested in this research, it does represent a good example

of a structured and coordinated care strategy developed in a bottom-up fashion. In order to encourage other professionals in other settings to use this process and to improve its effectiveness, it would be useful to further perform the fourth and fifth steps of the implementation model: development, and testing and execution of implementation plan; and continued evaluation and adaptation of the plan. In step 4, it would be useful to develop process, structure, and outcome indicators that can be used to monitor the care process as it progresses. Future research should focus on evaluating the use of process models in daily practice and possibly, develop interprofessional process models for other client groups in primary care. Furthermore, it is important to continuously involve clients/parents and all stakeholders in health care quality improvements, as this would improve the client-centeredness and feasibility of the process of care in interprofessional practice.

## Acknowledgments

This study is funded by The Foundation Innovation Alliance (SIA-Stichting Innovatie Alliantie) in The Netherlands (2008-7-4P). The authors are grateful to the participating parents and professional staff. Special thanks are given to Ingrid Kempinski, a physiotherapist, who initiated the formation of the group of professionals participating in this study. Also, the authors would like to thank Dr IGP Duimel-Peeters, Senior Assistant Professor, Maastricht University, for her guidance in the first part of this research.

## Disclosure

The authors report no conflicts of interest in this work.

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