Innovation in the Public Sector

Publin Report No. D12-5
Dutch case study WP4

Process Innovation in Mental Health Care

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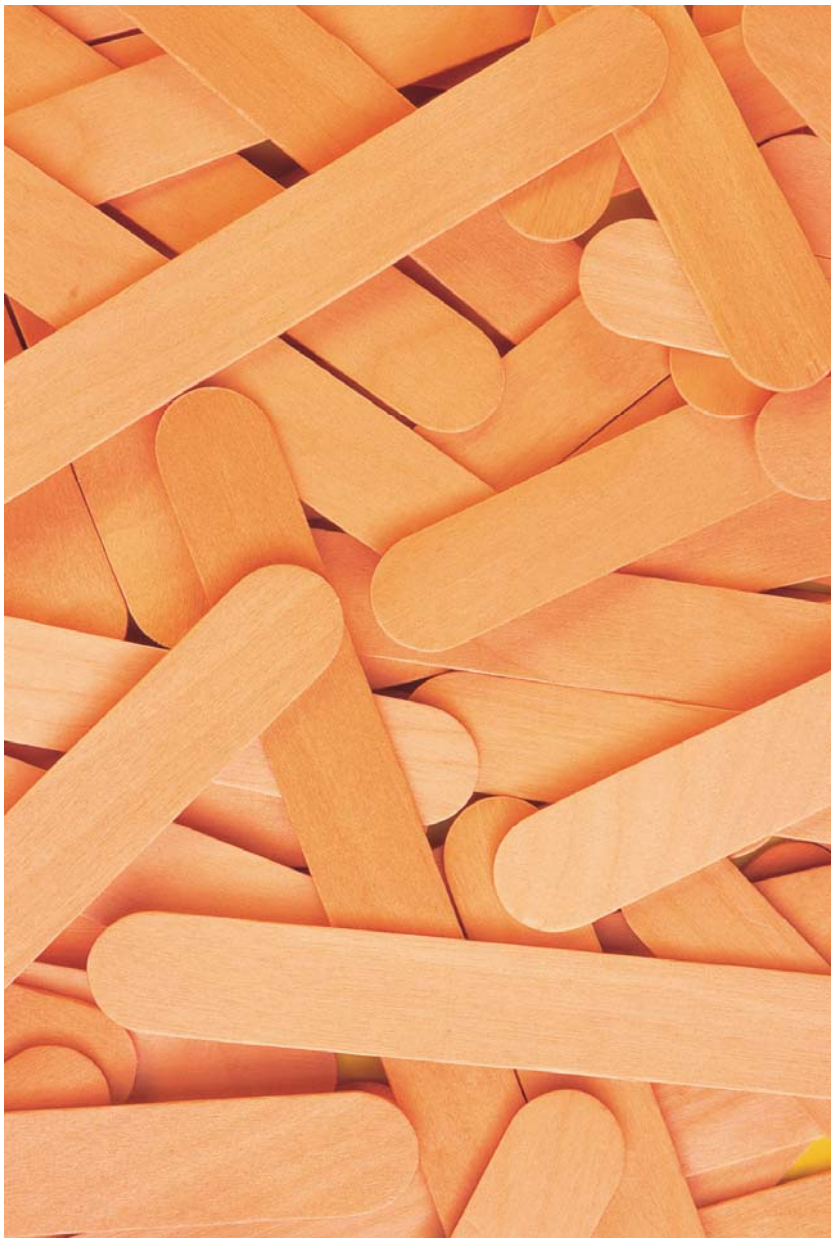

This document is a report produced by the PUBLIN research project. PUBLIN is part of the Programme for research, technological development and demonstration on "Improving the human research potential and the socio-economic knowledge base,1998-2002" under the EU 5th Framework Programme. For more information, see www.step.no/publin/.

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PROCESS INNOVATION IN MENTAL HEALTH CARE:

Development and implementation of clinical pathways in psychiatric hospital Vijverdal.

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6 June, 2005

Published by NIFU STEP, Oslo, Norway 2005

CONTENT

SUMMARY

The present case study focuses on the implementation of process innovation within the context of mental health care. The study aims to contribute to theory development about innovation in health care. The study is part of Publin, a European research effort into innovation in the public sector. The study describes the implementation of clinical pathways in a psychiatric hospital in Maastricht (The Netherlands). This process innovation has been linked with a flow-oriented organizational redesign. A systems model has been used to analyze the innovation process. Special attention has been paid to crucial interfaces within the local innovation system. These interfaces are allocated along two basic dimensions of the systems model: (1) interfaces between functions in the health care value chain, (2) and the interfaces between the different system levels. The study can be regarded as a blend of case study, survey, participant observation and action research. The results of the study underline, that innovation in health care implies an intensive organization development effort. The proposed systems model appears to be an adequate toolkit for understanding the innovation process and the interactions and interdependencies in the innovation system.

INTRODUCTION

Debates about innovation in health care are taking place at almost any level of the health care system: from hospital floor to management-ranks, from the front-end to the back-end of health care, and at the level of regulators and policy-makers. Research in The Netherlands (Ravelli 2005) indicates that in just one sector in that country (mental health care) hundred of care renewal projects are running at the same time: with an average of fourteen projects in each psychiatric hospital. Evidently (Den Hertog et al. 2005) reforms are needed to get grip on the basic parameters by which the performance of the health care system can be established: costs, quality of care, waiting lists, safety, satisfaction of workers and patients. This study is focused on the diffusion and implementation phase of health care innovation and aims to contribute to the development of innovation theory and innovation policy-making in this domain. This choice is based on two arguments. First literature indicates that diffusion and implementation represent very problematic phases of the innovation trajectory in health care. There appears to be a wide gap between knowing and doing (cf. Pfeffer and Sutton 2000). Second, theory-building appears still to be in its infancy. That applies to the study of innovation in general (Klein and Sorra 1996), more specifically innovation in the service sector (Tether and Metcalfe 2003), and in health care (Den Hertog et al 2005). What we are largely missing are (Klein and Sorra 1996, p. 1056) "….integrative models that capture and clarify the multi-determined, multilevel phenomenon of innovation implementation".

Turning knowledge into practice

Knowledge plays an important role in the innovation of health care practice. Evidence-based medicine has become (Lemieux-Charles, McGuire, and Blidner 2002, p.49) a movement to introduce rationality into the innovation process and improve the quality of innovations being adapted in health care settings. However, at the same time, this movement (Denis et al. 2002, p. 60) draws its vitality from the observation that there seems to be a significant gap between what is known and what is used in practice. This gap may have serious consequences for people's health. According to Sackett (1997, p. 7), the issue is not longer how little medical practice has a firm basis in scientific evidence, rather than how much of what is firmly based is applied in the front lines of patient care. Diffusion and implementation appears to be vulnerable phases in health care innovation. Illustrative is a study (Schrijvers et al. 2002) describing 21 innovation projects in the Netherlands. The study shows that health care can be made more effective, safer, faster, patient-friendly and professionally satisfying. By projects that make everybody a winner: the patient, the doctor, nurse, manager, the regulator and taxpayer. However, the study also indicates that diffusion and implementation of these good and often proven ideas appears to be a serious problem. The copying of best practices appears not be a successful strategy. "Getting it right the second time" (Szulanski and Winter 2002) might be the real challenge.

Theory building

An earlier explorative study (Den Hertog et al. 2005) showed that diffusion and implementation are under-researched areas. That observation applies to research of innovation implementation in general (Klein and Sorra 1996), in the service sector (Tether and Metcalfe 2003) and more specifically in health care. However, one can

establish that the attention for the diffusion and implementation stage of the innovation trajectory in health care is growing. Interesting in this respect are comparative studies focused on specific health care innovations. In this vein, Lemieux-Charles et al. (2002) studied the diffusion and implementation of the Coordinated Stroke Strategy (CSS) in policy experiments in four regions of the province Ontario (Canada). Savitz et al. (2000) have evaluated the implementation of Clinical Process Innovations (CPI) in16 integrated delivery systems. Other examples are Adinolfi's (2003) study into the implementation of Total Quality Management (TQM) in 14 Italian and Irish hospitals and the analysis of Adler et al. (2003) of the implementation of clinical pathways in seven children's hospitals in the United states. Studies like these underline that innovation in health care is a process that is strongly embedded in local social, institutional and organizational structures. Implementation of innovations appear (Denis et al. 2002) to float on networks of supporting actors, that co-evolve over time, and flourish in contexts where there is a strong mapping of risks and benefits onto the interests, values and power distributions of organizations involved. Furthermore it appears that the "organizational learning capability" plays a key role in determining the "change readiness" of health care services.

This study

The present case study is the Dutch contribution to Publin, a EU sponsored research project in the innovation in the public sector (see: www.step.no\publin). The case tells about an innovation in mental health care: the development and implementation of clinical pathways in the psychiatric hospital Vijverdal in Maastricht (The Netherlands). The study describes a five-year period (2000-2005). Of special interest is the linking of the pathways with the organization redesign of the care process. This redesign has been strongly influenced by the concept of flow-oriented design as developed (De Sitter et al. 1997) in the Dutch sociotechnical school. The study tries to map the driving and blocking forces at different stages and levels of the health care system. This mapping process builds on the model of health care innovation developed in an earlier explorative study (Den Hertog et al. 2005). The model describes health care services as nested and interacting systems. Two main axes are used for that purpose: the horizontal axis of the health care process. Cooperation and conflict between internal functions and disciplines will be described from this perspective. The second axis concerns the different system (management and policy) levels that can be observed: (1) the operational, or care level, (2) the level of functional management, (3) of service management, and of the larger care system. The study can be regarded as a "nested case study". That means that it contains more than one story. The main story is that of professionals and care managers involved in changing the organizational context of their work. The second storyline is about the continuous pressures from the outside world, regulators, (regional) policy-makers, and other health care services, to reduce costs and improve quality of care. The earlier explorative study (Den Hertog et al. 2005) indicated that the interactions between the service-level and system-, or policy level are crucial to understand the innovation process. That is the reason that the two cases to be carried out according to the technical annex of Publin are derived from the same social and organizational context. This paper will draw a sketch of the general and local context of the innovation. Next the story of the change process will be told, and major issues will be discussed. The paper will be concluded by implications for theory and policy building.

Within the Publin project the case study also serves as a contribution to a case comparison. This contribution is summarized in a separate research note.

MAPPING HEALTH CARE INNOVATION

Innovation in industry and in services appears (Tether and Metcalfe 2001) to follow different patterns. The systems that breed innovation in services are more dynamic. Innovation systems co-evolve in course of time as answers to problems and opportunities. Tether and Metcalfe (2001) underline that we still know very little about these development patterns. That observation might be extended (Den Hertog et al. 2005) to research about innovation in health care. In this study the advice of the fore-mentioned writers is followed: in order to understand how these innovation processes work, we have to have a far more detailed understanding of micro innovation systems and how they are constructed around connected sequences of problems and opportunities. The present study is carried out in this perspective. An innovation process in a mental hospital is described. The aim is to trace the innovation process and to project the change patterns on a map of the health care system. In Gestalt-terms one might say: the map of the health care system is the background, and the story of the innovation process is the foreground. The use of systems models implies the use of two basic dimensions.

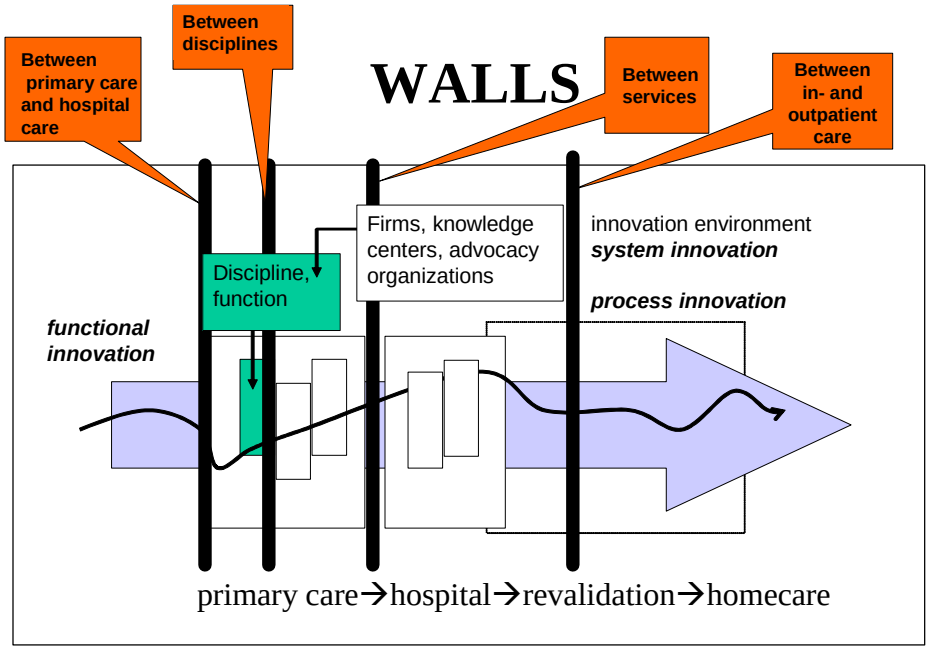

Figure 1: interfaces along the horizontal dimension

The first or horizontal dimension refers to the *process* by which the system transforms inputs into outputs. Or in normal language: the treatment and care of people. The transformation takes place with the help of various functions (disciplines, technologies

and techniques). The functions together represent the process. Or in normal language again: patients go through a process from diagnosis and intake, to treatment, care and after care. In this process one can observe two kinds of innovations: (1*) functional* innovations originating from health care disciplines and health care technology, and (2*) process* innovation which concerns the design of the health care organization. The introduction of a new psycho-pharmaceutical treatment might be regarded as a functional innovation, while a new team-based intake procedure is to be regarded as a process-innovation. The functions that are fulfilled in the health care process can be allocated in different organizations in the health care value chain. On might think in this respect about ambulatory mental health care, home care, rehabilitation centres and general practitioners ("GP's" or "family-doctors").

The vertical dimension of the system regards the different levels of management and policy-making. Four levels can be distinguished: (1) the operational level where doctors, nurses and other professionals are dealing with the treatment and care of patients, (2) the level of health care functions, where disciplines are managed, (3) the management level of the service organization as a whole, and (4) the health care systems level, where policies for regional or national health care systems are formulated. At most levels there are lateral links with professionals and policy makers in neighbouring health care services.

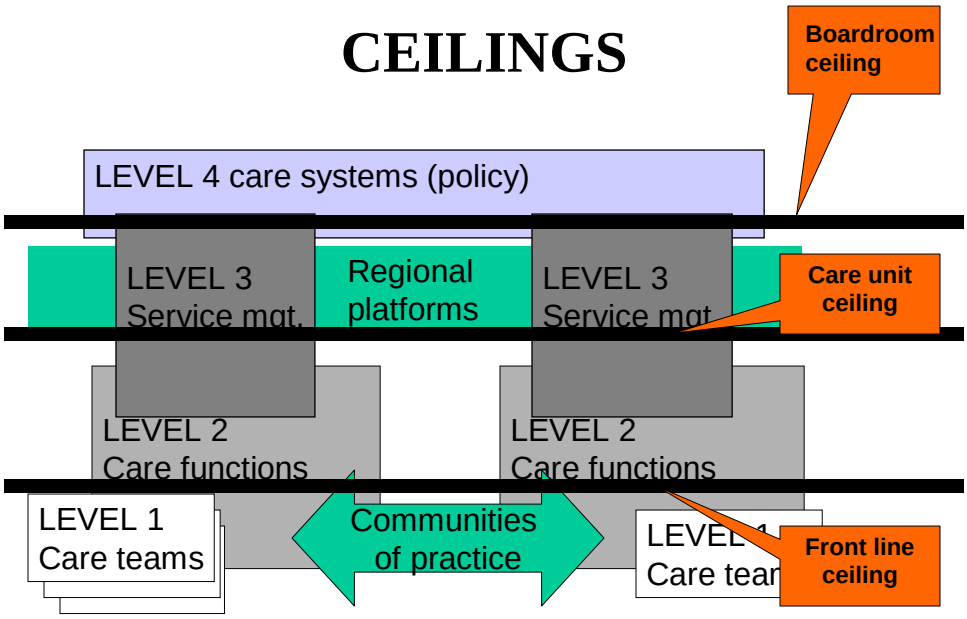

Figure 2: Interfaces along the vertical dimension.

It has to be remarked that the horizontal and vertical processes have a different nature or character. That means that every process has its own language, standards, procedures, and

dynamics. The first process is characterised by care for the patient. The second process is characterised by hierarchical power and economical considerations. These different qualified processes are *interlaced* in one and the same organisation. The complexity of the implementation of innovations is determined to a large extent by the quality of this interlacement. We will find that the quality of this interlacement of processes characterized with a different rationale and different incentives is a crucial factor for the implementation of innovation.

DESIGN

This study serves multiple purposes, and consequently is built on a multiple design. This design can be regarded as a blend of research strategies: case study, participant observation, survey, and action research. The blend is determined by the multiple aims of the study.

Aims

The first aim is the contribution to the multiple-case analysis of the Publin project. A cross- case analysis will be carried out on basis of the contribution of the members of the Publin consortium. A simple framework has been developed in order to make comparisons across cases possible. The Publin cases together are meant not only for explorative purposes, but for testing of preliminary hypotheses too. The PUBLIN-proposal contains (PUBLIN Annex part B) eight specific hypotheses and the implication is that the data should offer the possibility to test them. These hypotheses have been translated in policy relevant question and concern the following key issues:

- initiation
- design
- selection, diffusion, implementation and implementation
- evaluation and learning.

That is the deductive part of the project (separate report follows). Robert Yin (1984, 1989) has made clear that case studies can be used for that purpose. Yin (p. 36,37) puts forward that case-study research in not based on statistical generalization, but on analytical generalization. This means one can already draw general conclusions even from one case-study. The key is in the possibility to test a previously described logic. Generalisation is in that sense not based on statistical arguments about representativeness, but like in an experiment on analytical grounds. The consequence is that the methods used should make it possible to check the work of the researcher and reach an acceptable level of inter-subjectivity. Special attention has to be given here at the bias that might rise from the selection of the cases. Case researchers often make an implicit choice for a certain case, because of the illustrative character of the case. It is clear that the danger exist that cases are chosen because they fit theory. The results of this cross case analysis can show that different cases show similar mechanisms, or that different cases show different mechanisms, depending on what exactly is different in terms of the context and the features of the case-study.

The second aim is elaboration of the *mapping framework* from the earlier explorative study (Den Hertog et el. 2005). This Vijverdal case study serves to test the robustness of

the system model. Can the drivers and blockers in the innovation process in the Vijverdal hospital be effectively allocated at the interfaces between functions and between system levels, as marked in the mapping model? The case offers a possibility to iterate between empirical observations and the evolving theoretical concepts. The case study is used in this respect to explore a new field and to *ground theory* (Glaser & Strauss 1967, Strauss and Corbin 1990) in new observations. The theory is so to say, the shape, the form in which the data are fitting. The continuous iteration between case data and theory are part of an inductive process. The outcome of this process is not a 'proof' of the theory applied, but rather further strengthening and adjustment of the theory. Theory here is understood as a means to organize and understand empirical observations. Dyer and Wilkinson (1991) also argue for in-depth case studies that "provide a rich description of the social scene" and "reveal the deep structure of social behaviour". In this effort we are in the first place interested in *the whole picture*. We want to understand the phenomena in their natural context. This (better) theory has to go beyond than offering a list of success factors. In the second place, we want to hear *the whole story.* We are interested in innovations as *chains of events.* That means that we have to unravel the story of the case.

The third aim of this study is to deliver feed back for the participants in the ongoing change process at the Vijverdal hospital. The research can we regarded as a form of *action research* (Peters and Robinson 1984). Three routes have been travelled to realize that contribution to the change process: feed back of outcomes of qualitative (participant) observation, a survey feed back and group sessions. The different routes have covered different dimensions of the process of innovation and the walls (horizontal) and ceilings (vertical) in this process. Effort has been done to involve members of the organization in the study, both in the preparation, data gathering as in the interpretation of the data.

Case study: Planning backward

The core of the Publin project is process-oriented, and (Pettigrew, 1990, p. 268) to: "…link the content, contexts and processes of change over time to achieve the differential achievement of change objectives". The first agreement in the research team has been to follow a reverse design logic, by asking ourselves continuously the question: what kind of product (or: report) do we have to deliver? Such approach demands to give the specifications of the product in advance. In an effort to do so, the three categories used by Andrew Pettigrew might be very useful: context, process and content.

Context. The context refers to the internal and external environment, which is relevant for understanding of the phenomenon (in our case: the public innovation). What is the influence of the various actors? What are their interests? How and to what extent are the different systems levels interconnected? In health care for example: what where the primer drivers for change? What has been the impact of policy levels on innovations, which were embedded in the operational level? And what about innovations, which started at the policy level once they entered the implementation phase at the operational level? In PUBLIN researchers are expected to make the system boundaries of their case explicit: "This is the area we have studied". In this respect, it is important to distinguish between the internal and the external context. The external context is relatively stable, it generally does not change much in the short term, and when it changes, this often is step-wise, for example as the result of a new law. The internal context changes directly as a

consequence of the innovation process, though not always in the way that was intended in the innovation process.

Process. The process of changes is embedded in the context. That makes it difficult to distinguish them from each other. However for the interpretation of the data it is essential to do so. Process has to do with the changes over *time*. Where are we now? Where did we come from and what might be expected in the future? Which different futures seem to be possible? In its essence, process refers to the *storyline*, the chain that connects the events.

Content. Content is related with the interpretation of the process. We use concepts, which enable us to place the data in a wider context. The content refers to the basic question researchers have about the phenomena studied. Content refers to the learning that can be extracted from our observations. That means that PUBLIN researchers should keep the basic research questions and hypotheses fresh in their minds. The basic questions are here: What is this case, this research all about? What kind of learning do we want to obtain? What kind of information is expected by my PUBLIN colleagues, the actors in the field and by those who have commissioned this research? We are talking about the key issues in PUBLIN. Content refers to both the horizontal and the vertical process and in particular in their interaction.

Data sources

Yin (1989) argues that the use of different sources can improve the validity and reliability of the study. The following sources have been used to gather empiric data:

- In depth interviews with 28 doctors, nurses, and other professionals, managers and policy makers. The interviews took 60 – 120 minutes and focused on the ongoing change projects, the role of different actors in the change process and on drivers and blockers of change. The interviews were carried out by the first two authors of this paper.
- Participant observation by a masters student during 9 months. The student worked for that period for a change team of the pathway of psychiatric care for elderly. She kept a diary, took part in meetings and made in depth interviews with professionals and managers in this unit.
- Ethnographic observations of the project leader of the change process (who later in the process became director of the process)
- Two studies (executed before the innovation process was started) of a consultancy firm, about the management culture and the care culture.
- A survey measuring attitudes related to: work satisfaction, organizational climate and the quality of health care among health care professional and managers (N= 230; response rate: 48%).
- Three group sessions in which professionals and managers discussed the progress of the innovation project.
- Two benchmark sessions with teams of professionals and managers from two innovative and front-running psychiatric hospitals. The intention was to involve two other hospitals that have travelled farther along the pathways as “mirrors”, “buddies” or “role models”. One might speak in this respect of a form of *benchmarking.* The first exchange workshop with one of the psychiatric hospitals in Almere has been organized in July 2004. The trip of eight managers and professionals to the Almere

hospital has been well prepared. The program consisted of three parts: (1) a general introduction of the Almere project and an open discussion about experiences, (2) bilateral talk between representatives of specific professions (psychiatrists, nurses, psychologists, occupational therapists etc.), and (3) a plenary discussion about the most striking experiences during the day. The information from this exchange has been communicated to teams back home in Vijverdal. A second exchange visit has been organized in January 2005 with the psychiatric department of the University hospital in Utrecht

The aim of the Publin researchers is to organize a workshop, involving 8-10 hospitals and other services in mental health care, as a start for a kind of "community of practice". Some interesting findings at the organization already using clinical pathways: the use of a "front door unit" for intake and referral of patients to a certain clinical pathway is successful, but a lot of expertise is needed and there is a shift from expertise and activity to the front-door unit: in one hospital with this system, 60% of the patients received treatment within the front-door unit. The main practitioner treating the patient remains with the patient all throughout the system, also when the patient is switched from one clinical pathway to another; this is important for continuity, trust and responsibility (ownership).

THE CONTEXT

Understanding change in organizations requires (Pettigrew 1990, p.269) a contextual approach. This implies that sequences of events are analyzed at vertical and horizontal levels and the interconnections between those levels. The vertical levels refer to system levels and the horizontal levels refer to sequential interconnectivity. First the focus will be on the broader or general context in which hospital like Vijverdal operate, then the more specific local context will be described.

General context

The Dutch health care system is complex and hybrid. In short: people are insured (mostly compulsory) by private health care insurance firms. Most health care organizations (like hospitals) are independent public organizations and have an executive and supervisory board. Public administrators (at city-, region- or state-level) only monitor the institutions from a distance. However, general health care regulations do have a strong impact on health care services, especially the complex financial budget system. Health institutions are confronted with increasing pressures for performance improvement. These pressures are originating from different actors: tax payers, insurance companies, politicians, regulators, professionals and patient-peer groups. The wished for improvements are both directed at reducing costs and at raising the quality of the care, the quality of working life and patient satisfaction. There is a system-wide need for win/win-solutions, in which treatments become more cost-effective, medical effective and lead to a higher patient satisfaction. During the last two-three decades many efforts have been done to implement a wide variety of process innovations at different levels of the health system for this purpose, however with often disappointing results. Various explanations have been suggested for the meagre results: the conflicts of interests between care-providing

organizations and professional groups, unwillingness to give up part of the professional autonomy, rigid financial systems, too little time and discretion for local doctors and nurses to prepare and implement change, slow reactions of service management and a lack of process management systems.

The Dutch government attempts to reduce costs and to increase efficiency and effectiveness by introducing market elements in the health sector, in the form of competition between different providers that get funded based on the number of patients that choose to use their services rather than of another organisation. This however often leads to overcapacity and redundancy in the supply of health care.
The costs of mental health care are largely paid for by a special arrangement, the 'AWBZ', not by the normal health insurances. The reason for this is partly historic and partly a recognition of the special character of mental illness. In the future this will probably be changed.

Like most Western countries the Netherlands, mental health care is going through a process of deinstitutionalisation (Ravelli 2005). This transformation is characterized by mergers, reduction of beds, and integration of hospitals and ambulatory services. Large psychiatric institutions built in remote places, in the dunes and woods are gradually replaced by smaller clinical units, which are part of regional mental health care organization. These units are located closer to the living environment of people. At the same, the development of evidence based treatment programs for specific groups of patients is stimulated in order to safeguard the quality of care. Government stimulates this development, however the health care organizations themselves are responsible for the integration and collaboration process.

National umbrella-organizations such as the 'GGZ' and research institutes such as the Trimbos Institute actively promote the implementation of clinical pathways in mental health care, to make mental health care more patient-centred, more flexible and more evidence-based.

Local context

Vijverdal is a psychiatric hospital in Maastricht, a town in the south of The Netherlands. The hospital is built at the outskirts of the city. The hospital operates within the general dynamics of mental health care. Locally, the boards of the various health care organizations have been talking for more than two decades about integration and the intensification of collaboration, often with disappointing results. Gradually the hospital is reaching its activities out closer to society. Management and professionals are working in this clinic on the organizational conditions for more integrated and process-oriented care. The hospital has 350 beds for full-care patients and capacity for 64 chair for day-care, 24 rehabilitation beds. 23.000 face-to-face contacts with outpatients complete the production volume. Vijverdal has a staff of 722 employees. The hospital has a teaching function and works closely together with the medical faculty of the university of Maastricht and is part of a collaborating of care services: the Mosaic group. Vijverdal merged during the nineties with an ambulant mental health care service, however the merger has been undone in 1996. In addition to being a hospital for patients, Vijverdal also is a teaching hospital (for students of medicine) and a training hospital (for psychiatrists doing their residency)

The budget of mental health care organizations is determined by a regional *regulator*. Every year the expected "production" of care is estimated. In order to calculate the appropriate budget, the information about the "care-load" of patients has to be delivered by the mental health care organizations themselves. Regulators have increasingly a controlling task. Nowadays, the overall budget for health care in a region is fixed. The regional Regulator gets a certain amount of funds for specified types treatments, and cannot spend more money than needed for these. Which health care organizations in the region get how much of these funds depends on their estimated and actual care production, but though this can differ between health care services in a region, the overall spending in the region remains fixed. Growth of one health care organization will have to be compensated by shrinking of another. This leads to some form of competition, the Regulator having the role of the market in the sense of selecting which organization gets how much for its production. The Regulator also allocates a special budget that is intended for innovation in healthcare. Organizations in health care can get some of this budget when they send in proposals for some innovation. However this is not so much money, compared to the overall budgets of care organizations.

In the beginning of 2003, the different organizations involved in different aspects of mental health care had decided to cooperate on the implementation of clinical pathways, since they realized that only together they could realize a seamless process organized around the needs of the patient rather than around the limitations of the different organizations. The professionals of the different organizations had jointly produced descriptions of the care trajectories. However, the boards of the different organizations turned out to be unable to implement the measures necessary for implementation. Since the process stopped, the psychiatric hospital Vijverdal decided to start implementing clinical pathways within the organization by itself. For one of the clinical pathways this was successful. In the course of 2003 a transition to a different budget system was realized: the fixed budget, the spending of which had to be accounted for afterwards was changed in a variable budget directly linked to actual activities, with a certain financial 'ceiling'.

THE INNOVATION PROCESS

Understanding outcomes of change asks (Pettigrew 1990) for revealing the temporal interconnectedness of events, or in systems terminology: sequence of actions by which inputs turned into outputs. "Antecedent conditions shape the present and the future" (Pettigrew, 1990, p. 270). Pettigrew points out that history is not just to be understood as a chronology of events. The researcher has to look for underlying structures and logics.

The innovation

"Evidence-based medicine" can be regarded (Denis et al. 2002, Sackett, et al. 1997)) as a strong movement within health care, which promotes clinical and organizational practices grounded in scientific evidence. "Clinical pathways" (see: box 1) offer the guidelines for using that evidence in practice.

"A clinical pathway is a description of elements of care to be rendered during hospital stay for a particular diagnosis, including the times for providing those elements. Determined by consensus of care providers. The pathway often takes the form of a chart or care path/care map. Pathways address all provider contributions to patient care. Pathways are thus a subset and an operationalization of the broader category of clinical "guidelines", where guidelines are understood as "systematically developed statements to assist practitioner and patient decisions for specific clinical circumstances" (Field and Lohr 1992, cited in Adler et al. 2003, p.33).

Box 1: Clinical pathways.

The Vijverdal case is about the development and implementation of clinical pathways within the context of a mental hospital. However the innovation in the Vijverdal hospital goes far beyond the implementation of new guidelines for treatment and care. Vijverdal decided to translate the pathways into new organizational forms of care. The aim of the innovation is to create an organizational context for the development and implementation of patient-centred care programs (or: *clinical pathways*), both by integrating and connecting internal and external groups and institutions of care providers. The hospital has become "flow-oriented" and now consists of care units that are responsible for care programs for specific groups of patients. The hospital offers programs for the following groups:

- Front door (new patients)
- Mood disorders
- Personality disorders
- Anxiety disorders
- Elderly with psychiatric problems
- Integrated care (long-stay patients).

The design of the new organization was strongly inspired by the ideas of the Dutch socio-technical tradition (De Sitter et al. 1997). This approach implies the design of organizations and organizational units with "whole tasks". The primary process is built up around "parallel flows" (here: flows of patients). Management accounting systems are directly connected with the care programs. The new units have a dual management: a manager and a psychiatrist together run their unit. The psychiatrist is responsible for the quality of care, the managers for the organizational aspects. The psychiatrist is hierarchically below the manager, but the manager has no authority to decide on the content of care. They have a joint responsibility to the higher level.

A central concept in the new organization structure is "demand-steering" of health care. A so-called "front door program" for the intake and referral of patients is being developed. This program is meant to analyze the problems of patients and the systems they live in, and to let health care providers and patients find out which clinical pathway to take. The idea is that mental health care has to be tailor-made, fitting individual problem and preference profiles of patients. In this view, the treatment and care has to be made explicit and transparent in terms of written ends and means. Information for and communication with patients, family and practitioners involved have to be clear. The different care trajectories have been described in a standardized, systematic way, consisting of a number of a diagnosis, a treatment plan and modules of treatment. An important element is to ensure 'evidence-based medicine'; to guarantee the incorporation

of the latest knowledge and of best practises in medicine by updating the descriptions of the trajectories regularly with new improved insights for diagnosis and treatment. Also, it enables the provision of 'stepped care': to provide as much care as a patient needs, no more no less.

Within the organization "islands of practice" had to be connected, to form a wider community of practice (cf. Wenger 1998), increasing communication and flexibility. Teams of different professionals will be responsible for the treatment and care of specific types of patients, like for example patients with anxiety problems or elderly patients with psychiatric problems. The integration of care is not restricted by the walls of the service: the integration should also concern a diversity of external groups: GP's, ambulant mental health services, housing corporations, families, schools etc. Elements of the innovation are expected to be: clinical information systems, case management, clinical protocols, quantitative characterization of the disorder and symptoms before, during and after treatment, program- (or: *pathway-)* management infrastructure, and management development. Continuity of care and reduction of waiting lists are among the concrete goals.

In the innovation trajectory the following points of departure were formulated.

- Cooperation of all involved parts of the health care system, from primary care physician to specialist.
- The development of clinical pathways has to be done with participation of and in harmony with the different parties involved, from the very beginning.
- Expertise development aimed at the collection of knowledge concerning clinical pathways and establishment of a common set of terms and concepts.
- Implementation has to take place in phases.
- There should be a uniform, digital basis file of every patient.
- Stepped care (no more and no less than needed)
- Best practices, evidence-based
- Quantitative evaluation of treatment

On care program focuses on elderly patients in need for psychiatric care. These patients were grouped into a sector of geriatric psychiatry. The clinical pathways will be organized as follows:

- The unit for care-intensive treatment of elderly patients (IBO) focuses on intensive care including hospitalization.
- The unit for stabilizing and rehabilitating elderly (SRO) focuses on elderly in partly independent living situation
- The team is separate of departments; it works through the units and over the border of the organization with other organizations involved with the position of elderly patients. This team is responsible for coordination, short-term clinical care, and ambulant care and for accompanying support services such as care at home.

Box 2: Psychiatric care for elderly.

The development and implementation of clinical pathways resulted in a change of the structure of units. In spite of extensive communication, this transition was not very smooth. Employees tended to remain attached to their original situations, loyalties and rationales. This may be related to the absence of a 'ritual' for entering a new situation. The transmutable team works well, fruitful contacts with other organizations have been made leading to more coordination and synergy.

The change process

In the end of 2000 the board of Vijverdal formulated a new mission statement and vision on the future mission. The decision was made to set course in the direction of "care programs" ("clinical pathways") and the breakdown of functional silo's. Grounds for the new orientation was a self-assessment (Leysner, Reijnders en Haveman, 2000) that made the following problems manifest:

- Poor continuity of care and poor cooperation between professionals within Vijverdal and in out-clinic services;
- Health care providers had hardly any control over the flow of patients, both regarding short as long-term stay.
- Lack of adequate therapy-programs;
- Enduring understaffing of clinical functions;
- Lack of orientation on out patient care;
- The in ability to accommodate individual living, leisure and care preferences of patients

Box 3 shows the outcomes of the self-assessment of one of the units of Vijverdal: psychiatric care for elderly.

The following problems have been established in the department for geronto-psychiatry (Leysner et al, 2000):

- *Admission and observation unit:* increasing pressure of GP's and ambulant doctors to admit patients with psychogeriatric problems, awaiting a definite placement in a nursing home. This places extra stress on the observation and consultation unit. Cooperation agreements with both internal and external care providers concerning the indication process are unclear. The unit has little influence on the flow of patients, is dependent on others, and not able to guard its aims. It is almost impossible to react on new developments, like the changing wishes and demands of patients and their relatives, new forms of care that have been developed, new policies and new financial systems. There is no counselling function for discharge, and by that no effective bridge between intramural and ambulant care.

- *Day care:* Within this unit it remains unclear where the responsibility for treatment is allocated. Patients who have been referred by the ambulant care remain treated by the ambulant care institution. However, the report has to be made by a psychiatrist of Vijverdal. The advantage of this arrangement is the possibility to work in a more systematic way, and to couple the psychiatric insights with those of the outside living situation of the patient. However this approach is also a source of organizational problems.

- *Psychiatric Intensive Home care (PIT):* The bottlenecks in this unit are similar to those in the day care unit. The responsibility of the referring physician is unclear. Because of financial regulations, it is the psychiatrist of Vijverdal who bears the formal responsibility.

- *Long stay units:* the staff of these units is often strongly attached to the "own" patients and the prevailing unit culture. Most of the staff works together for years. Informal islands have come into existence, and those islands are often conservative when change comes up. A problem is that these processes and interests are hard to uncover. However, they do hinder innovation processes and development in the direction of more externally oriented style of working. The admission of more demanding patients with complex disorders raises the working pressure.

Box 3: self-assessment of the psychiatric care for the elderly.

Management came to two basic conclusions: (1) closer cooperation of health care providers was urgently need, both internally and externally (the ambulatory mental health care, sheltered housing, the university hospital in Maastricht and the primary health care), (2) the introduction of clinical pathways (or: care programs) would help to innovate the primary process. A team was formed to develop plans for the introduction of clinical pathways. The team published its conclusions in November 2002. The intention was to actively involve the external organizations mentioned above to implement the pathways. The team expected that most of the improvements were to be gained by closer cooperation of professionals across the various mental health care services. From the patient perspective, care processes do not stop at the walls of departments and organizations.

In the beginning of 2003 top management of these services started to negotiate the new framework for cooperation. This process broke down later that year. Although there was consensus about the desirability of this, it proved very hard to implement. The reasons for this were: (1) inability of management to organize the necessary conditions for such a change (2) fear of organizations to loose autonomy and (3) distrust, not at the level of care givers at the service level, but at the level of members of the boards. There was a fear for the loss of autonomy and apparently the personalities of board members did not match. The organization for ambulant mental health care at some point withdrew, stepping out of one part the arrangement in preparation, the 'Front portal' for intake and diagnosis of patients. In the process of withdrawal this organization took with it a substantial part of the patient stream from Vijverdal with it, to increase its patient population and thereby its power and finances. This was very bad for the atmosphere and the cooperation became impossible. Another joint project was 'sabotaged', because the same organization deliberately failed to fulfil its promises, thereby gaining competitive advantage, spending its energy elsewhere.

The management of Vijverdal made the decision to go on with the development of clinical pathways. A new team was given the task to develop a basic plan for the development and implementation of care programs within the hospital. The idea was that connections with external groups still could be made when the political climate would improve at a later stage. The team made plans for partial programs (which were called "care-lines"), while the final aim remained the development of integrated, cross-organizational care programs. These care-lines were defined as: a coherent and complete set of services, focused on clear defined target groups and guaranteeing the continuity of care and care provider.

In that same period a new manager was appointed for the division day care and short stay. This manager had a long industrial experience as production manager. He had been

involved in quite a few organizational innovation projects and was strongly influenced by the Dutch socio-technical tradition. He observed a strong parallel between the socio-technical approach and the ideas connected with clinical pathways and care programs. He convinced the organization to link the clinical pathways to organizational structures and processes. The new programs would be the core of organizational entities rather than disciplines and functions. This division manager was made project leader for the implementation of the new organization and a task force of division and unit managers was appointed to make the organization ready for the change. However, from the moment that the organizational implications of this new approach became clear, the demarcation line between supporters and opponents among the professionals, and especially the psychiatrists became clearly visible. The task force organized a process of internal discussions of its plan with many groups: the medical council, the psychiatrists, the workers council, and family council. In some areas of the hospital, professionals and managers could hardly wait to start the change process; while in other parts of the hospital there were still strong “pockets of resistance”. In the summer of 2004 the final disputes were ended and the plan was formally installed. An important aspect of the solution was so-called “dual management”: the organizational manager and the care manager together had responsibility for the overall performance.

During that same time, it became clear that new organizational bad weather was expected. The Regulator (“Zorgkantoor”) demanded more insight in the financial affairs of the hospital. A consultancy firm was hired to investigate the finances of the Vijverdal and produced a very negative report. The first problem was that the hospital was not able to give the required information. There was a real lack of insight of the relationships of costs, cost drivers and billable income. This information crisis resulted in a management crisis. The chairman of the board had to withdrew. The division manager who also was in charge of the innovation process was appointed as general manager of the hospital. His first task was to produce the required figures, and his second task was to “get the figures right”. The analysis showed, that the hospital billed for activities it did not perform and did not bill activities it had performed. The Regulator heightened the pressure on the organization and imposed a 15% budget cost. It became clear that existence of the hospital was in danger and that new strategies were required to make mental health care more effective. In the course of making the organization healthy, more and more hidden problems came to light. At present (April 2005) the negative implication of the new situation is that the trust in the new organization is undermined at the same time that it is built up. Management has the task to convince professionals and managers of Vijverdal that despite the new budget cuts, the innovation process will be strongly continued. The implementation of the care trajectories was slowed down; to some extent it could still be realized, depending on the personal power and drive of individual managers. Five managers for different types of care were installed, the care trajectories were formally described and discussed and agreed upon by the management team. The positive implication is that the health care services in the region are under pressure to develop new models for mental health care in the region. A refreshment of management ranks that took place can offer the chance for a new fresh start. The development of the pathways appears to offer a useful point of departure. The pathways offer the possibility to discuss the cooperation between organizations on the level of the primary process, the level where professionals have to work together. That might be more effective than taking the present identities of the organizations involved as a starting point.

THE CONTENT

Content refers (Pettigrew 1990, p.268) to the causal assumptions on which our understanding of change is built. Content refers to the questions that lead our research efforts and the concepts we use to build theory. In this study content refers to the interrelations between system levels and functions. In the earlier explorative study (Den Hertog et al. 2005) effort was done to map the drivers and blockers of health care innovation: the hidden walls and ceilings of the health care system. The study tried to show that problems and solutions in implementing health care innovation tend to be situated at the interfaces between internal and external functions of the health care process (the "walls"), and between the different management and policy levels of the system (the "ceilings"). These interfaces are used as a framework for identifying the field of forces in the innovation trajectory in Vijverdal. The interfaces are described at two stages: before the implementation and during the implementation.

Horizontal interfaces between functions (disciplines)

The self-assessments made by managers and professionals in the hospital showed serious problems of communication and cooperation between professionals and professional groups. The lack of cooperation had a negative impact on the continuity of care and of the care provider. Professional autonomy was regarded as an unassailable principle. However the same principle allows professionals (cf. Adler et al. 2003, p.24) *not* to search for agreements for problems of individual patients or the organization. A considerable group of doctors made very clear that they considered the introduction of the pathways as an infringement on their professional autonomy. In contrast other doctors were in strongly favour of the new approach because it forced their colleagues to work together. They were aware that giving up part of their autonomy would make it possible to get more influence on the care process. Most of the nursing staff was in favour of the new approach. They were confronted in their daily work situation by the problems created by the lack of cooperation between the other professionals.

Professional autonomy became restricted by two measures. First, the physicians, more precisely, the psychiatrists got a functional boss, the care manager, and second, much of the treatment was formalized and protocolized, thereby reducing the freedom of the professionals (the psychiatrists) concerning the choice of method and the elimination of some of the treatments in use, that were not sufficiently evidence-based. The care professionals were involved in the management decisions and this was crucial for acceptance. The new director asked a thorough commitment and cooperation, as a condition for him to stay and try to deal with the many problems; this commitment and support was given.

The new organization brought the disciplines needed to offer a complete and integrated care program. This means that the professionals needed to run the primary process had to work in teams. The change from the functional orientation to a process-orientation in health care services can be regarded as a radical innovation. The change is accomplished by a multitude of incremental steps. The care programs have been described in broad terms. They will be elaborated within a longer period of time. The effects of the new approach will be evaluated.

Horizontal interfaces with external partners in the value chain

Another outcome of the self-assessment was that communication and cooperation with external partners in the health care value chain had to be improved. The following external partners were regarded as relevant in this respect: ambulatory mental care, family doctors, sheltered housing, home care, nursing homes, and the university hospital. In the beginning of the project, there existed on the professional level a positive attitude towards more intensive cooperation between the various services. Management of Vijverdal took the initiative to discuss the possibilities for closer cooperation with its external partners. The development of integrated ("cross-institutional") pathways was the primary goal and the further reaching aim was the building a new federal organization in the future. That perspective did not show to be realistic. On board level institutional interest became manifest and it was hard to develop an atmosphere of trust. Finally, the director of the ambulatory mental health care, the most important counterpart of the clinic, pulled the plug. The management of Vijverdal decided to pursue the implementation of pathways within the boundaries of the hospital, hoping that in the future a change in the political situation would offer the possibility to progress across the boundaries of the institutions. Vijverdal succeeded in extending close relations with other partners. Examples the collaboration with sheltered housing and sheltered workshops, and volunteer aid. The partners in the regional mental health field are now reconsidering their relationships. Financial pressures force them to work close together and develop a common vision on the future of mental health care in the future. Changes in the upper management in many of the institutions involved might help to make a new start. The work towards clinical pathways is regarded by influential professionals in Vijverdal as another positive factor in this respect. The discussion about pathways is in its essence a discussion about the primary process in health care. This implies that the talks about new organizational relationships between the partners can be linked with operational processes and the problems encountered by the professionals.

Vertical interfaces at the front-end of health care

Professionals in mental health care tend to be strongly intrinsically motivated and feel themselves involved in the work situation. The survey in the present study indicates (Mol 2005) that this observation can be applied to the Vijverdal hospital. The data show that job satisfaction is relatively high. The respondents (predominantly nurses) appear to be positive about their teams. They are also satisfied with "team democracy", and the quality of care delivered by their ward. The experienced "stress" is relatively low. However the participant observation (Kuyvenhoven 2005) indicates that the atmosphere is negatively impacted by downsizing and the continuous budget pressures. Many nurses and other care providers have become tired of he succession of reorganizations in the hospital. Part of the nurses and assistant nurses (cf. Burke 2003) does not understand the inconsistency of the downsizing measures and the investments in the change project (in training-activities for example). Others could make no sense of the concept of patient-centred care in units where patients have difficulties to express their needs or/and to interact socially in a functional way. "What do we mean by patient-centred care when a patient remains refusing to take a shower?" The meaning of new procedures (like individual care plans, consultation and information of relatives) is neither clear to many (mostly assistant-) nurses. Some nurses are afraid that job enrichment for one group can mean job

impoverishment for others. It is clear that the new perspectives that are being introduced in Vijverdal ask for translation to the daily practices in the hospital. That requires investment in dialogue. There was a large amount of distrust and cynicism in management, dating from years of incompetent management. It takes a huge effort to break this attitude and to mobilize people for you rather than against you.

Management has come to realize that much effort has to be invested in defend the credibility of the change program. There is at management level a strong intention to involve nurses, assistant nurses and other professionals in the change process. However at the same time there appears to be less time to do so. Management realizes that communication will be one of its priorities in the coming years.

Vertical interface between functional management and service management

When the new division manager entered the hospital he was astonished by the managerial gap between the senior doctors and the management team. It appeared as if both groups ran their own hospital. Both groups appeared to be working in a different world. There was something like a silent agreement: as long as management did not interfere with the professional domain, professional would not interfere in the management domain. As a result policies formulated by the management team were not followed up by feedbacks on their implementation. Management had little insight in what actually happened at the work-floor and professionals had little idea about the problems of the hospital as a whole. There was hardly any shared responsibility for managing the hospital as a whole. This management gap became manifest on the moment that the decision was made to link the pathways (care programs) with the organization. The doctors were suddenly confronted with a dilemma: should they give up part of their autonomy for more influence on the broader care process? Part of the doctors reacted with a clear “yes”, and other with a clear “no”.

In the course of the innovation process described here, much has changed. Care programs have a dual management: a psychiatrist and a general manager. They manage their unit together and they manage it as a team organization. The recent linking of the care programs with the administrative system is expected to make the organization more manageable, because it offers a direct connection with the health care process.
In the old situation, the financial and the care aspect were largely separated. Now however every care-line has to take care of its own budget. This does not have to affect the quality of care, in principle available resources will be spent more effectively and efficiently since the persons spending it are very close to the needs of the care-line and the patients in it, and therefore have much better notion of what should happen and what not. Providing the best care remains the beginning and the end mission of the people in the organization, but more awareness of financial constraints was necessary, and more ‘ownership’ of problems and solutions was needed. One aspect that has been changed to accommodate this changed budget structure is the registration system.

Vertical interfaces between service management and policy makers, regulators and external partners.

During the last year the environment in which Vijverdal operates has become very turbulent. The Regulator has paid special attention to the justification of costs of the hospital and enforced serious budgets cuts. Vijverdal is urged to consider new ways of collaboration with other services involved in mental health care. An earlier effort to develop an umbrella (Mosaic) did not work out. The pressure to change has become considerably higher. This might end up in mergers, for example with the regional ambulant mental health care organization. This has been tried before, however the merger has been undone a few years ago. Both the pressure from the side of the Regulator and other regional and national policy makers, and the change of faces in key management position are expected to give this process a push in the right direction. The board of Vijverdal is presently involved in a series of talks with its partners in regional mental health care to find new ways to shape the regional mental health care system. The development of trust proves to be one of the priorities in this process. Not all old wounds have been healed, and part of the partners wants to cling to their autonomy. However, most partners understand, that they have little room to manoeuvre. The development of integrated (or: multifunctional) regional mental health care organizations is a dominant development in The Netherlands. Policy makers would welcome any movement in that direction. Internally, this development has raised a sense of urgency. Many doctors, nurses and other professionals become aware that change is needed, and that financial problems have to be tackled. However there are still many formal obstacles in the health care system, that slow down the process, for example obstacles in the compensation system. Another side effect of the budget pressure is the difficulty to retain the credibility of the innovation (meaning: the introduction of care programs) among the staff of Vijverdal.

One positive factor is, that the development of clinical pathways within the clinic appears to be an excellent condition for the integration of care programs across mental health care serves. This means that new organizational arrangements can be built on the understanding of the primary process of health care. Or in other words: on considerations relating to the quality of care and the professionalism of health care providers, rather than on policy making in higher circles.

DISCUSSION

Concepts like clinical pathways, evidence based medicine, care programs, and patient-centred care already have a history of decades. The same is true for the concepts and methods of change management. However, that proved to be not enough for successful change, far from it. The development and implementation of clinical pathways and care trajectories represent one of the most important developments in health care. They all share the aim of putting knowledge in practice. However, this study shows that bridging the knowledge-doing gap (Pfeffer and Sutton 2000) is a major challenge for health care managers and professional. Knowing what to do is not enough, and change cannot be effected with one stroke of the pen. Diffusion and implementation of innovations in health care is becoming Adler et al. 2003, Denis et al. 2002, Lemieux-Charles et al. 2002) an even more intriguing than ”generation” of innovation. This study indicates that innovation of health care, and more specifically mental health care, requires intensive organizational development processes in, and across health care services. Research in this domain is still scarce. This study has been intended as a contribution to the body of

knowledge in this domain. The study has prompted the following key issues for discussion:

Health care innovation is a process of organization development
The innovation in Vijverdal represents a complex learning process on multiple levels of the organization. The development and implementation is the result of a long sequence of small and large steps, and calls for new patterns of behaviour of board members, functional managers, team leaders, and professionals. Board members had to invest again in cooperation with other mental health care institutions in the region. A new basis of trust has to be built.
After years of mutual avoidance board members and psychiatrists in Vijverdal opened the discussion about the organization of the mental health care. The doctors had to give part of their professional autonomy in order to gain more influence on the care process as a whole.
Different health care disciplines had to learn to work together in multifunctional units. Teamwork is no longer something only for nurses, but for all health care providers within care programs. This process has just started. Effort to involve nurses and assistant nurse in the implementation of the programs has to be intensified. Relationships with ambulant care, care homes, GPs and families of the patients, patients organizations have to be strengthened. This study also has indicated that the *ownership* of change is conditional for accomplishing real change at the health care front-end. Vijverdal did make progress here. Professionals are underlining now, that the care programs should be the basis for closer cooperation with other health care institutions.

Policy measures and system innovation (for example: introduction of new financial systems) can create conditions for innovation of health care, but they can also block new developments at the same time. They will produce effect, only when health care institutions work along the high road of organizational development.

Feed back mechanisms at multiple system levels
In the literature on innovation systems little interest (Carlsson et al. 2002) is being paid to the built-in feedback mechanisms of the system. This study shows that both feed back mechanisms, and the lack of feed back mechanisms are important factors in the understanding of innovation processes in health care innovation. One basic problem is that feedback is a multilevel phenomenon. Innovations have impact on multiple level of the system. Effective innovation management presupposes that the impacts of innovations at other levels than the target level can be established. For example, that the effects innovations at system level can be traced at service and care level. What we see in the case is that the feedback mechanisms in a health care organization like Vijverdal, don't work out like that. Measures at system level have negative side effects on the innovation process on care level, and it is difficult to establish what the results of innovations on care level will be at service or system level. The coupling of the new care program oriented organization and the financial reporting systems can be regarded as a step in the right direction.

Mapping health care innovation
The mapping model presented in this study appears to be useful to recognize the interfaces in the health care innovation system, to define the primary process, and to

relate innovation processes that take place at different system levels. These interfaces are crucial in the management of the innovation process. This is illustrated by the analysis of drivers and blockers of innovation at the horizontal internal and external interfaces, and the vertical interfaces at the front-end of health care, between functional and service management, and between service management and policy makers and regulators. This study supports the perspective on innovation systems, as proposed by Coombs et al. (2001) and Tether and Metcalve (2002). These authors criticize the static view on innovation systems, the inadequate treatment of the role of demand, and underline the importance of the systemic inter-dependency of the elements of innovation systems. The Vijverdal case illustrates how positions of actors do change in the course of time, and that external pressures and demands have impacted their position. The trust-power dynamics is crucial. The case also indicates that the understanding of the innovation process is almost impossible without understanding the interactions and interdependencies between actors and groups of actors. The change of the relationship between board level and senior physicians in the direction of a shared responsibility for the organization and care, for example showed to be conditional for the implementation of the innovation of clinical pathways. Systems theory shows to offer effective tools for the analysis of these systems. However, it has to be underlined that (Coombs et al. 2001, Carlsson et al. 2002) these analyses should pay more attention to the function or purpose of systems, feedback mechanisms and relationships and interdependencies.

For researchers in the field of health care innovation, another observation might be useful in this respect. During the encounters of professionals and managers of Vijverdal with their colleagues of two other psychiatric hospital that have been implementing the same kind of innovation (clinical pathways and care programs), there was a high degree of mutual recognition. The same kind arguments prompted the decision to develop new care processes, and the same kind problems were encountered at the interfaces between system functions and system levels. This opens the perspective for comparative research, and the transfer of learning between health care institutions.

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On the PUBLIN case studies

The following general presentation is based on the PUBLIN guideline report for case study researchers. See also the introduction to the case study summary report.

The overall aim of this PUBLIN study has been to gain insights into the processes of innovation and the associated policy learning in the public sector. These should contribute to the development of a theory (or theories) of innovation in the public sector, and contribute usefully to policy analysis. Within this study framework, the aims of Work Packages 4 and 5 (the case studies) have been *to understand the interplay between policy learning and innovation at the policy level, and innovation at the service level within the public sectors under study.*

More specifically, the objectives of each Work Package are:

1. To understand the innovation processes present within national public health systems/social service systems.

2. To understand the learning processes underlying policy development in publicly regulated health/social service sectors.

Innovation
Green, Howells and Miles (2001), in their investigation of service innovation in the European Union, provide a suitable definition of the term innovation which denotes a process where organisations are

> *"doing something new i.e. introducing a new practice or process, creating a new product (good or service), or adopting a new pattern of intra – or inter-organisational relationships (including the delivery of goods and services)".*
>
> *What is clear from Green, Howells and Miles' definition of innovation is that the emphasis is on* novelty*. As they go on to say,*
>
> *"innovation is not merely synonymous with change. Ongoing change is a feature of most… organisations. For example the recruitment of new workers constitutes change but is an innovative step only where such workers are introduced in order to import new knowledge or carry out novel tasks".*

Change then, is endemic: organisations grow or decline in size, the communities served, the incumbents of specific positions, and so on. Innovation is also a common phenomenon, and is even more prominent as we enter the "knowledge-based economy".

An innovation can contain a combination of some or all of the following elements:

- New characteristics or design of service products and production processes *(Technological element)*

- New or altered ways of delivering services or interacting with clients or solving tasks *(Delivery element)*

- New or altered ways in organising or administrating activities within supplier organisations *(Organisational element)*

- New or improved ways of interacting with other organisations and knowledge bases *(System interaction element)*

- *New world views, rationalities and missions and strategies*. (Conceptual element)

Case study statements

In an effort to define a common methodological framework within which to study innovation in the public sector, several research orientation statements were put forward and related policy questions suggested.

These give a '*problem driven view'* of the issue under study. It should be strongly emphasised that this list was only intended to be indicative of what propositions might be tested and it was revised during the course of the PUBLIN study.

For instance, the following statements were added to the ones listed in the table below:

Entrepreneurs played a central role in the innovation process

- Was there a single identifiable entrepreneur or champion?
- Was the entrepreneurs assigned to the task?
- Had the entrepreneurs control of the project?
- What was the key quality of the entrepreneurs? (management, an establish figure, position, technical competence, access to policy makers, media etc)
- Incentives

There was no interaction between policy and service level (feedback)

- To what extent was the policy learning a result of local innovation?
- Are local variations accepted, promoted or suppressed?
- To what extent does the innovation reflect power struggles at the local and central level?
- Was there dissemination of the lessons learned, and was this facilitated by specific policy instruments?
- Where there evaluation criteria? (When?)
- Who where the stakeholders that defined the selection criteria? Did problems arise due to the composition of this group of stakeholders?
- How did the interaction and/or the interests of the stakeholders influence the selection of the indicators used?

Policy recommendations
Based on your experience from case studies, give concrete policy recommendations.

1. Preset also policy recommendations given by the respondents

2. Are the any examples of “good practice”?

The case study reports all try to comment upon these statements.

Moreover, all participants were also asked to use a comparable design for the case study itself and for the case study report.

Service Innovation		Policy Learning	
Statements	**Questions**	**Statements**	**Questions**
Initiation		**Initiation**	
Public sector innovation at the service level is problem driven	What was the primary rationale for the innovation under study? Were there supporting rationales? Was the innovation developed proactively or reactively? Where did (recognition of) the need for the innovation originate?	Public policy learning innovation is problem driven.	How can specific problem-orientated policy innovations be transformed into more general forms of policy learning? Is policy learning largely a reactive or proactive process?
Performance targets are a driver for innovation. Performance targets are a facilitator for innovation.	What are the most appropriate incentives and drivers for innovation in the public sector system under study? Be aware that it may be a driver and not a facilitator	Policies directed at performance measurement are a driver for policy innovation Policies directed at performance measurement are a facilitator of policy innovation	What are the most appropriate incentives and drivers for innovation in the public sector system under study? Be aware that it may be a driver and not a facilitator
This innovation is "top-down" (i.e. policy-led) as opposed to "bottom-up" (i.e. practice-led).	Does the location of the pressure for the introduction of an innovation impact its diffusion and development? Each country case should describe to what extent it is a top-down or a bottom-up innovation	This innovation is "top-down" (i.e. policy-led) as opposed to "bottom-up" (i.e. practice-led).	Does the location of the pressure for the introduction of an innovation impact its diffusion and development? Each country case should describe to what extent it is a top-down or a bottom-up innovation
Design and Development		**Design and Development**	
This innovation is developed through imitation of private sector practice.	Where did the innovation arise? Does it have models outside or inside the public sector?	This innovation is developed through imitation of private sector practice.	Where did the innovation arise? Does it have models outside or inside the public sector?
The choices and features of this innovation is influenced by underlying organisational politics, dominant values and belief systems	To what extent have the choices and features been driven by conflicts (specify: power, funding, belief systems … etc) between different stakeholders? How did the introduction of the innovation overcome the resistance to change at the service level?	The choices and features of this innovation is º influenced by underlying politics, dominant values and belief systems	To what extent have the choices and features been driven by conflicts (specify: power, funding, belief systems … etc) between different stakeholders? How did the introduction of innovations overcome the resistance to change at the policy level?
The end user was involved in the innovation process	What was the role of the end user? Were they involved in order to improve the design features or to increase	The end user organization was involved in the innovation process	What was the role of the end user organisation? Were they involved in order to improve

	acceptance of the innovation and/or for other reasons? If they were not involved, explain why.		the design features or to increase acceptance of the innovation and/or for other reasons? If they were not involved, explain why.
Selection, Diffusion and Utilisation		**Selection and Deployment**	
The diffusion of the innovation required effective 1. networking, 2. competence building and 3. alternative thinking		The selection and deployment of the innovation required an environment that encouraged effective 1. networking, 2. competence building and 3. alternative thinking	
The diffusion of this innovation required co-ordination between different governmental institutions and/or departments	How can inter-governmental roadblocks be by-passed? To what extent does intra-governmental co-ordination depend on direct political interaction? To what extent does intra-governmental co-ordination depend on stimulus from a crisis situation? Does fragmentation of government create a barrier?	The most challenging public policy innovation takes place at the intra-governmental (inter-functional) level.	How can inter-governmental roadblocks be by-passed? To what extent does intra-governmental co-ordination depend on direct political interaction? To what extent does intra-governmental co-ordination depend on stimulus from a crisis situation? Does fragmentation of government create a barrier?
Evaluation and Learning		**Evaluation and Learning**	
Evaluation played a critical role in the innovation process Research institutions played a critical role in the innovation process Interaction with other institutions/firms played a critical role in the innovation process	Did the innovation meet the expectation of the stakeholders at various stages of the innovation process? Did the innovation have unintended consequences (e.g shifting bottlenecks)? Did the innovation induce other innovations? Is there evidence of policy learning and any associated structure? Had lessons been drawn from earlier innovation processes?	Evaluation played a critical role in the innovation process Research institutions played a critical role in the innovation process Interaction with other institutions/firms played a critical role in the innovation process	Did the innovation meet the expectation of the stakeholders at various stages of the innovation process? Did the innovation have unintended consequences (e.g shifting bottlenecks)? Did the innovation induce other innovations? Is there evidence of policy learning and any associated structure? Had lessons been drawn from earlier innovation processes?