

Quality improvement in mental healthcare

The transfer of knowledge into practice

Gerdien Franx



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Voor Marijke

For reasons of consistency within this thesis, some terms have been standardized throughout the text. As a consequence the text may differ in this respect from the articles that have been published.

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Gerarda Cornelia Franx

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Promotoren : Prof. dr. M. Wensing
Prof. dr. R.P.T.M. Grol

Copromotor : Dr. J. Huyser (Arkin/BUCZ, Amsterdam)

Manuscriptcommissie : Prof. dr. A.E.M. Speckens (vrz)
Prof. dr. G.J.M. Hutschemaekers
Prof. dr. W.J.H.M. van den Bosch

Contents

	Page
Chapter 1 Introduction	7
Part I Strategies for quality improvement in mental healthcare	33
Chapter 2 Ten years of multidisciplinary mental health guidelines in the Netherlands <i>International Review of Psychiatry 2011;23:371-378</i>	35
Chapter 3 Organizational change to transfer knowledge and improve quality and outcomes of care for patients with severe mental illness: a systematic overview of reviews <i>The Canadian Journal of Psychiatry 2009;53(5):294-305</i>	53
Part II The impact of the quality improvement collaborative on improving mental health	75
Chapter 4 Quality improvement in depression care in the Netherlands: the Depression Breakthrough Collaborative. A quality improvement report <i>International Journal of Integrated Care 2009;9:e84</i>	77
Chapter 5 Implementing a stepped care approach in primary care. Results of a qualitative study <i>Implementation Science 2012;7:8</i>	99
Chapter 6 Implementing clinical guidelines for depression on antidepressant prescribing in primary care: a quasi-experimental evaluation <i>Submitted</i>	125
Chapter 7 Health gains and economic costs of implementing depression guidelines in the primary care setting: a matched-control group implementation study <i>Submitted</i>	143
Chapter 8 Bridging the science-to-service-gap in schizophrenia care in the Netherlands: the Schizophrenia Quality Improvement Collaborative <i>Submitted</i>	163
Chapter 9 Discussion	177
Summary	197
Samenvatting	209
Dankwoord	223
Curriculum Vitae	229

Chapter 1

Introduction

Prologue

This thesis is about improving the quality of healthcare for patients with mental health problems, such as depression and schizophrenia, by implementing knowledge into practice. 'Quality Improvement' can be defined as the 'combined and unceasing efforts of everyone -healthcare professionals, patients and their families, researchers, payers, planners and educators- to make the changes that will lead to better patient outcomes (health), better system performance (care) and better professional development (learning)'.¹ Here we focus on how to achieve this 'improvement' in mental healthcare, and the factors and interventions which contribute to improvement.

One of the most critical issues in mental health services today is the gap between what is known about effective treatment and what is provided to and experienced by consumers in routine care.^{2,3} Every year over a third of the total European population suffers from mental disorders.⁴ Although overall rates of mental disorders have not increased since 2005, quality of care and treatment did not improve either; less than one-third of all cases receive any treatment, suggesting a considerable level of unmet needs.⁴ This implementation gap, 'the gap between what can and should be and what exists is so large, that . . . it constitutes a chasm'.⁵

Practice guidelines can help to close this gap by providing concise, evidence-based recommendations. Guidelines summarize existing knowledge, synthesizing the scientific evidence, clinical expertise and the expertise of healthcare users. The rationale for developing guidelines is their expected contribution to 'evidence-based' practice and thus outcomes of healthcare for patients and societies.^{6,7} Studies have found that practice guidelines for somatic conditions have been effectively implemented to some extent, leading to measurable improvements in healthcare, although the impact on health outcomes is less obvious.⁸ In mental healthcare the body of research on guidelines implementation is still limited.⁹ This thesis reports on research concerning guideline development and implementation in mental health. Guideline implementation studies in depression and severe mental illness care are presented, with a focus on a frequently used implementation method in the Netherlands, the Quality Improvement Collaborative (QIC).

In this introduction the implementation gaps for depression and schizophrenia are discussed, as well as the guidelines for both disorders and implementation barriers and strategies. At the end, an outline of this thesis will be described.

The implementation gap for depression and schizophrenia

The quality of depression care

Depression (major depressive disorder [MDD]) is a highly prevalent disorder across all regions of the world, with average lifetime and 12-month prevalence estimates of 14.6% and 5.5% in high-income countries and 11.1% and 5.9% in low-income countries.¹⁰ In the Netherlands lifetime and 12-month estimates of depression are 18.7% and 5.2%¹¹ and across Europe the average 12-month prevalence rate is 6.9%.⁴ In the last 10 years no clear changes in overall rates of mental disorders were found.^{4,11} In the Netherlands, the first wave of the Netherlands Mental Health Survey and Incidence Study (NEMESIS 1) showed that new depressive episodes had a median duration of three months, 63% of those with a new episode recovered within six months and 76% within 12 months. Almost 20% of affected patients had not recovered in 24 months.¹² Although many patients recover from depression, for a proportion of patients it is a chronic illness, characterized by high rates of symptom recurrence and sustained functional impairment.¹³

In 1990 depression was the fourth leading cause of worldwide Disability-Adjusted Life Years (DALYs), the sum of life years lost due to premature mortality and years lived with disability adjusted for severity.¹⁴ It is projected to be cause number two by 2020.¹⁵ European per capita cost of mood disorders in 2010 was estimated at €113.4 billion on average, varying by country.¹⁶ The socio-economic costs of depression for societies, not just the healthcare system, are considerable, approximately 1% of gross domestic product. Most costs are incurred outside the healthcare system because they are related to productivity losses, lost leisure opportunities and premature mortality.¹⁷

The science-to-service gap for depression is rather substantial. International comparisons showed that treatment adequacy rates for anxiety disorders and depressive episodes in Belgium, France, Germany, Italy, the Netherlands and Spain were similar to those found in the United States of America (USA)¹⁸. In the USA a national representative survey conducted in 1996 showed that, although 53.8% of respondents with at least one 12-month mental disorder received any mental healthcare, only 14.3% received care that could be considered consistent

with evidence-based treatment recommendations.¹⁸ A later study of Wang et al.¹⁹ showed that treatment adequacy in specialty care is better than in the general medical sector, with rates of patients receiving a minimal threshold of treatment adequacy of 48.3% versus 12.7%. Unmet need for treatment is greatest in traditionally underserved groups, including elderly persons, racial-ethnic minorities, those with low incomes, those without insurance, and residents of rural areas.¹⁹ In Europe the rates were 57.4% and 23%, respectively.²⁰

In the Netherlands, as in most western countries, primary care is the key supplier of mental healthcare. About 21% of the patients in primary care suffer from depression or depressive symptoms.²¹ Around 42% of the primary care patients with a confirmed Composite International Diagnostic Interview (CIDI) diagnosis of depressive disorder, are treated in accordance with primary care guidelines.²² For patients with an anxiety disorder, this percentage is 27%, whereas half of the patients with both depression and anxiety disorder receive guideline-concordant care.²² There seems to be room for improvement in terms of reducing both overtreatment of mild cases and undertreatment of more severely depressed patients.

Clinical audits strongly suggested overtreatment of mild depression with antidepressants in primary care. Differentiation of subgroups based on severity criteria is not routine practice since a clear relation between antidepressant medication and the severity of depression does not seem to be present.²³ Around 50% of the patients diagnosed with depression by the primary care physician receive antidepressant medication or benzodiazepines in the first consultations.²⁴ Other research has shown that more than 70% of the patients diagnosed with depression by the primary care physician are treated with antidepressant medication, whereas in more than 50% of these cases antidepressants were the only treatment.²⁵ These high prescription rates do not seem to be in line with patients' preferences, which lend towards psychological treatment rather than medication.²⁶ Researchers and depression experts conclude therefore that patients with mild depression presenting in primary care could profit more from effective interventions such as self-help or physical exercise.^{27,28} Despite numerous policy incentives to strengthen the capacities of primary care in the Netherlands, primary care physicians still refer more patients to specialized mental healthcare care than to psychologists and social workers in primary care.^{21,29} These referral rates to specialty mental healthcare have risen over the last years.³⁰

The quality of schizophrenia care

Schizophrenia is one of the main chronic severe mental illnesses (SMI), characterized by fundamental disturbances in thinking, perception and emotions.³¹ Schizophrenia usually starts in young adulthood. Life expectancy is reduced by approximately 10 years, mostly as a consequence of suicide, and only a minority of those affected fully recover.³¹ Different prevalence rates have been reported internationally. In a systematic review, published in 2005, its median lifetime prevalence was estimated at 4.0/1,00³² and not 1%, as reported in the Diagnostic and Statistic Manual of Mental Disorders, fourth edition.³³ In the Netherlands, with a population of 16.6 million, approximately 120,000 persons (around 0.7%) have a diagnosis of schizophrenia.³⁴

Even though schizophrenia is not highly prevalent, it is among the most costly illnesses worldwide. The European per capita cost of psychotic disorders in 2010 was estimated at €93.9 billion on average.¹⁶ According to the Global Burden of Disease Study, schizophrenia was the 26th leading cause of worldwide DALYs.¹⁴ In addition to the direct burden, there is considerable burden on patients' relatives. Most people with schizophrenia receive community-based care.³⁴ Treatment goals are to identify the illness as early as possible, treat the symptoms, provide skills to patients and their families, maintain the improvement over a period of time, prevent relapses and reintegrate the ill persons into the community so that they can lead a life as normal as possible.³¹

In the management of schizophrenia the science-to-service gap is substantial. Despite the fact that a number of interventions have been proven effective, services research shows indisputably that people with this serious mental disorder are likely to receive few if any of these effective interventions³⁵ and many receive low quality of care, such as inappropriately high doses of neuroleptics.²

One of the first gap studies in the USA, the Schizophrenia Patient Outcomes Research Team (PORT) study, found that patients in two large state public mental health programs were unlikely to receive most of the indicated evidence-based treatments. The rates at which patients' treatment conformed to the recommendations were modest at best, generally below 50%.³⁶

An analysis of the difference between actual care and guideline recommendations performed just before the release of the Dutch schizophrenia guidelines in 2005 reported a considerable science-to-practice gap.³⁷ Although best-practices exist in Dutch mental healthcare, patients generally either did not receive the effective interventions as recommended in the guidelines, or not in a

sufficient number of sessions and within an appropriate timeframe. Moreover, good coordination of care appeared hard to come by.³⁷

In 2005, the first Quality Assessment of Regional Treatment Systems for Schizophrenia (QUARTS assessment), a structured interview with Dutch stakeholders, showed that an estimated 25-50% of patients were offered care according to the guidelines.³⁴

In this thesis, we report on evaluations of efforts to address these science-to-service gaps for patients with depression or schizophrenia, and improve clinical processes and outcomes as well as efficiency of care.

Multidisciplinary guidelines as strategies for quality improvement

A practice guideline is:

a document with recommendations, aimed at improving the quality of care, based on systematic summaries of scientific research, on weighing the advantages and disadvantages of the various options for care, completed by the expertise and experiences of healthcare professionals and healthcare users.^{38,p.9}

Guidelines can be considered as tools to translate research results and new insights to clinical practice with the ultimate aim of improving processes and outcomes of healthcare. The recommendations in practice guidelines describe the goal of improvement (optimal clinical practice) and might also be seen as a method for improving practice^{7,39} and reduce practice variation.⁴⁰ Nevertheless, it is now widely understood that practice guidelines usually do not implement themselves. Interventions to translate guidelines and enhance their uptake in clinical practice are usually needed.

Different types of practice guidelines exist. Multidisciplinary guidelines, unlike monodisciplinary guidelines, are documents simultaneously developed by all professional groups involved in the care for a specific patient group. Healthcare consumers and carers may also be involved in the development. A multidisciplinary guideline encompasses several elements of the care process and is not restricted to the care of one specific professional group, moment or location. It is an overarching document and different disciplines feel responsible for its implementation. In monodisciplinary guidelines, mostly one professional group is addressed.⁴¹

In mental health in the Netherlands, multidisciplinary guidelines have become the most important type of guidelines, since most mental healthcare by definition needs a multidisciplinary approach. Their developmental process follows a rigorous approach, according to the internationally accepted criteria of the Appraisal of Guidelines for Research & Evaluation instrument.⁴²

Practice guidelines on depression

The Dutch multidisciplinary guideline for depression was released in 2005 and was revised in 2010.^{43,44} The 2005 version served as the basis for the research in this thesis. For patients with a first episode of mild depression, the Dutch guideline working group recommended clinicians to consider no treatment, neither psychotherapy nor antidepressant medication, in the first three months. The working group did recommend one of the following interventions: information, psycho-education, bibliotherapy or self-help, problem solving treatment and follow-up visits for monitoring in all cases. In case of a mild to moderate depressive episode of more than three months, or if the first step treatment interventions did not show sufficient response, or in case of a severe or recurrent depression, treatment in terms of psychotherapy and/or antidepressant medication was indicated, according to the guidelines.⁴³

Internationally, various American and European guidelines provide similar basic principles of treatment, which include individualizing the treatment plan, preparing the patient for potential long-term treatment, providing measurement-based care, and treating to remission.⁴⁵ In a review of six guidelines, mild depression had the most variance in treatment recommendations; some, but not all, guidelines suggest that it may resolve with exercise or watchful waiting, but psychotherapy or antidepressants could be used if initial efforts fail. Moderate and severe major depressions carry broadly similar recommendations among the guidelines. First choice treatment recommendations for moderate depressive disorder included antidepressant therapy, psychotherapy, and a combination of both. Severe depression may require the combination of an antidepressant and an antipsychotic, electroconvulsive therapy, or a combination of an antidepressant and psychotherapy.^{45,46} Hegarty et al.⁴⁷ found considerable variation in recommendations on screening, use of self-help and the length of antidepressant treatment in primary care guidelines for depression.

Stepped care

The recommendations described above all refer to a 'stepped care' approach for the allocation of depression treatment. In a stepped care approach evidence-based treatment options are ranked by their degree of intensity, looking at the impact on the patient's life, the length of treatment, the setting (primary care or specialty care) and the costs, as well as combinations of these criteria.⁴⁸⁻⁵⁰ Patients start to step in at the appropriate intensity level which matches their (severity) profile. Stepped care models have the potential to improve efficiency and effectiveness of depression care.⁵¹⁻⁵³ Also, the implementation of a stepped care model can lead to better collaboration and integration, involving all partners across primary and secondary care, and making them aware of their individual contributions to the shared approach.⁵³

In the revised version of the multidisciplinary guideline (2010) this 'stepped care approach' was recommended as the basic principle for the organization of depression care.⁴⁴ It was made explicit in a series of four algorithms targeting patients with a first mild depressive episode of no longer than three months, patients with a mild depressive episode longer than three months or a recurrent mild depression, patients with a first moderate or severe depression, and patients with a recurrent moderate or severe depression. Although there are indications that a stepped care approach for depression can be cost-effective and acceptable to patients, good evidence is hard to generate due to methodological pitfalls and has been lacking until now.

Practice guidelines on schizophrenia

The first Dutch evidence-based multidisciplinary guideline for schizophrenia was published in 2005 at the same time as the depression guideline.⁵⁴ Its revised version was published in 2012. The first guideline was developed by representatives of consumer and carer organizations and a range of professional organizations. It incorporated recommendations concerning diagnosis and treatment of schizophrenia. The recommended interventions included: assertive community treatment (ACT) or its adapted version functional assertive community treatment (FACT), cognitive behavioural therapy (CBT), psycho-education (PE), family interventions (FI), individual placement support (IPS), and pharmacotherapy (PHth).⁵⁴

Internationally, a number of schizophrenia guidelines of average good quality exist.⁵⁵ Besides treatment with antipsychotics, guidelines also recommend different psychosocial interventions: cognitive behavioural therapy (CBT),

community-based treatment (adapted to the conditions of the respective mental health system), family interventions (including psycho-education) and vocational rehabilitation or supported employment. In addition, some guidelines also recommend several psychosocial interventions such as case management, reinforcement techniques, cognitive training, compliance therapy and social skills training. Recommendations across different international guidelines largely correspond, whereas discrepancies or vagueness exist in areas due to newly emerging evidence (drug choice) or still restricted evidence (duration of antipsychotic treatment).⁵⁵

The multidisciplinary guidelines for depression and schizophrenia were the first of a set of guidelines to be released in 2005 by the National Steering Group for Multidisciplinary Guideline Development in Mental Health.⁵⁶ The work and lessons learned by the steering group are presented in part one of this thesis. For both guidelines, Quality Improvement Collaboratives (QICs) were organized from 2005 onward to implement relevant recommendations. The studies evaluating these projects are presented in part two of the thesis.

Factors influencing guideline implementation

A range of factors can help or hinder the implementation of evidence-based interventions, innovations or guideline recommendations.^{57,58} According to Wensing et al.⁵⁹ influencing factors might be related to: individuals (cognitions, motivations, routines), the social context (teams and networks), organizations (structure, culture and available means), and the broader societal context (professionalization, financial incentives, regulations and laws). The attributes of evidence summarized in guidelines may as well affect compliance in practice.^{58,60} Better compliance is associated with: the health topic (acute care guidelines are better followed than chronic care guidelines), the quality of the evidence, the compatibility of the recommendations with existing values, less complexity of the decision-making needed, more concrete description of the desired performance, and fewer new skills and organizational change needed to follow the recommendations.^{58,60} In a meta-review of 12 systematic reviews on factors influencing guideline implementation, complexity of a guideline was found to be the most frequently described. Guidelines, which are easy to understand, can easily be tried out and do not require specific resources, seemed to have a higher probability of being used.⁵⁸

Barriers to guideline implementation in depression care

In depression care many of these barriers have been identified as well. Smolders et al.⁶¹ reported no associations between practice characteristics and guideline-concordant care, and one professional characteristic of primary care physicians related to higher rates of overall guideline adherence: a stronger confidence in depression identification, being able to distinguish depression from unhappiness. Perceived time limitations were associated with a decrease of the probability of delivering appropriate non-pharmacological care; no practice-related or professional-related factors were associated with appropriate pharmacological care and depression identification and less perceived barriers for implementation were associated with referral to specialized mental healthcare.⁶¹

Patient-related factors, other than clinical factors, play an important role as well. Prins et al.⁶² reported that patient education level, accessibility of care and patients' perceived needs for care are more strongly associated with the delivery of guideline-concordant care for anxiety or depression than clinical need factors.

Organizational factors impacting on depression management, such as quality improvement capabilities and information technology infrastructures (reminder systems, use of electronic medical records), communication and coordination tasks are relevant in implementing evidence-based practices and need to be better measured and understood.⁶³

In terms of guideline attributes, significant limitations have been identified in the relevance and applicability of current depression guidelines to primary care.⁴⁷ A lack of agreement with the guideline recommendation, mostly related to a lack of applicability, is one of the barriers for primary care physicians to follow the guidelines.⁶⁴ On the other hand, the fact that guidelines in the Netherlands were developed by working groups of both primary care physicians and specialists might explain the relatively high rates of treatment adequacy for depression and anxiety in the general medical setting.²⁰

However, more studies are needed on patient and physician factors influencing guideline implementation in order to establish to what extent mental health guidelines can contribute to improving outcomes.⁹

In our evaluations of quality improvement collaboratives, in part two of the thesis we aim to identify factors associated with guideline implementation and improvement.

Guideline implementation strategies

There are many different theories and approaches to change. Overall, research on these different approaches is still scarce and none of the approaches is superior for all changes in all settings.^{60,65} What has become clear over the past decades of research is that effective implementation of complex innovations requires: (1) a thorough preparation and planning and a systematic approach based on a comprehensive understanding of the barriers and facilitators to change; (2) a multifaceted strategy combining different strategies, targeting different levels of care provision and tailored to specific settings and target groups (doctor, team practice, hospital, wider environment); and (3) evaluation of the implementation process and outcomes.^{60,65,66} Most guidelines, both in general as in mental healthcare, need well-developed, well-executed and sustained implementation programs,⁶⁷ and even such programs usually have only a moderate effect on performance in terms of care improvement (around 8-10%⁶⁸).

Implementation strategies are: 'targeted activities to realize the introduction of a specific method or product or to enhance a specific change'.^{69,p.4} They can be categorized in different ways, the Cochrane Effective Practice and Organisation of Care Group (EPOC) being considered as the most accepted one (Box 1). These interventions may be combined, overlap, or one intervention may contain elements from several categories.³⁹ Over the last decades numerous studies have been published about the effectiveness of a range of these strategies to disseminate and implement clinical guidelines.⁷⁰

In mental health, despite an increasing number of psychiatric guidelines, there is only a small number of implementation studies of such guidelines. A systematic review of 18 studies, of which eight studies addressed depression and two schizophrenia, showed that some of these studies reported modest and temporary effects of guideline implementation on the process of care and patient outcome.⁹ The most common setting was primary care (12 studies), one study was conducted in a general hospital and only five studies were based within specialist mental healthcare settings.¹⁰ Strategies used in the studies were: ongoing support and feedback, specific psychological models to overcome implementation barriers or social marketing techniques.⁹

Box 1. EPOC categories of implementation strategies (adapted from Thorsen & Mäkelä³⁹)

1. Interventions orientated toward health professionals:
 - a. Distribution of educational materials (including clinical practice guidelines).
 - b. Conferences: small-group conferences (active participation), or big-group conferences (passive participation).
 - c. Local consensus processes: discussions to agree that the clinical problem is important and the approach to manage the problem is appropriate.
 - d. Outreach visits: use of a trained person who meets with providers to provide information.
 - e. Local opinion leaders: using providers nominated by their colleagues as 'educationally influential.'
 - f. Patient-mediated interventions: information from or given directly to patients by others; e.g. mailings.
 - g. Audit and feedback: information or summary of clinical performance over a specified period of time.
 - h. Reminders: manual or computerized intervention, that prompts to perform a clinical action.
 - i. Peer review.
2. Financial interventions:
 - a. Provider intervention (fee-for-service, capitation, provider salaried service, direct or indirect financial rewards, penalties, changes in reimbursable available products).
 - b. Patient interventions (premium, co-payment, user-fee, patient incentives/grants/allowance/penalties).
3. Organizational interventions:
 - a. Structural interventions (changes in the settings/site of service delivery, telemedicine, changes in medical records systems (e.g. changing from paper to computerized records).
 - b. Staff-oriented interventions (revision of professional roles, multidisciplinary teams, case management or integration of services, skill mix interventions, improve provider satisfaction with the conditions of work).
 - c. Patient-oriented interventions (facilitating individual patient participation).
4. Regulatory interventions:
 - a. Changes in medical liability.
 - b. Management of patient complaints.
 - c. Accreditation.
 - d. Licensure.

Guideline implementation for depression in primary care

According to Gilbody,⁷¹ simple guideline implementation and educational strategies are ineffective for improving depression in primary care. Instead, more complex strategies are needed incorporating clinician education, an enhanced role of the nurse for case management or telephone medication counseling and a larger degree of integration between primary and secondary care. Overall there is some evidence that guideline-concordant care is associated with improved depression outcomes, but this still has to be better demonstrated.⁶²

In the USA a range of studies has been published on the implementation of so-called guideline-based models and protocols. In these studies the interventions to be implemented are derived from existing guidelines. A range of such projects have shown to improve detection and treatment of depression in primary care,⁷² improve depression outcomes,⁷³ reduce suicide risk,⁷⁴ prevent relapse of

symptoms and improve work outcomes.^{73,75} Several rigorous, controlled trials have demonstrated that depression care is amenable to treatment models designed specifically for managing chronic illnesses,⁷⁶ such as the Chronic care Model (CCM) developed by Wagner.^{77,78} These effective models are based on the principles of ‘collaborative care’,^{79–82} ‘stepped care’,⁵³ ‘disease management’,⁸³ or combinations of these.^{51,83,84} The components described in the CCM are central to all of these models: use of evidence-based practice guidelines, practice reorganization to meet the needs of chronically ill patients, patient education, and expert systems or multidisciplinary approaches to care.⁷⁸ Overall in the USA, multi-component system level interventions have led to a modest increase in recovery from depression in primary care.⁸⁵

In Europe one of the early guideline implementation studies was the Hampshire Depression Project performed in 2000 in which an educational package (including seminars, demonstration videotapes, small group discussion, guidance of educators for nine months) was offered to primary care physicians to improve their recognition of depression.⁸⁶ The conclusion of the authors that education did not increase the sensitivity and specificity of physicians’ recognition of depression must have added to the growing common notion that guideline implementation needs a package of strategies tailored to specific implementation problems.

In the Netherlands a large program to improve primary mental healthcare was launched in 2001 by the Dutch College of General Practitioners (NHG) and the Dutch National Association of General Practitioners (LHV). This program included the development of a range of products to support the primary care physicians: guidelines, educational materials, software modules. The primary healthcare regions were responsible for the improvement projects and national funding, quality improvement training, and meetings for consultations with coordinators were organized. The effect study showed no impact of the program in terms of self-reported mental health performance, while perceived barriers to optimal care decreased. Participation in the improvement interventions was not associated with any of these outcomes.⁸⁷

Guideline implementation in schizophrenia care

Also in schizophrenia care, implementation of guidelines has followed the pattern observed in general healthcare: moving gradually from passive diffusion to system reengineering based on complex electronic records, decision supports, and Wagner’s CCM.⁸⁸ Similar initiatives were undertaken as described above for depression management; based on the CCM components, several efforts were

undertaken in the USA to implement evidence-based interventions. This happened on a large scale, rather than in small demonstration projects.⁸⁸

The largest implementation program was the Texas Medication Algorithm Project (TMAP) directed at the development, implementation and evaluation of an algorithm-driven disease management program for adults with major psychiatric disorders. The program included a medication algorithm, a patient/family educational program, ongoing physician training and consultation, a medical documentation system with routine assessment of symptoms and side effects, and prompting by on-site clinical coordinators.⁸⁹

Another large and well researched program was the National Implementing Evidence-Based Practices Project,⁹⁰ which contained a multi-faceted strategy containing written material, web-based resources, training experiences, and consultation opportunities, packaged as implementation toolkits and addressing a range of stakeholders.⁹⁰ Outcomes were measured in terms of fidelity to the evidence-based practice model. More than half of the participating sites showed high fidelity implementation of one of five evidence-based interventions at the end of two years.⁹¹

These examples show that depression and schizophrenia guidelines, although not always implemented explicitly, have served to design a vast number of large quality improvement studies. This thesis adds to this body of literature by presenting new knowledge on a specific quality improvement method, the Quality Improvement Collaborative (QIC).

A multifaceted implementation strategy: Quality Improvement Collaboratives

A quality improvement collaborative (QIC) is a multifaceted package of implementation strategies that seeks to implement evidence-based practice through the sharing of experience and knowledge of others in a similar setting over a short period of time.⁹²⁻⁹⁵ QICs combine implementation strategies from the EPOC categories in box 1, mostly from categories 1 (interventions orientated toward health professionals) and 3 (organizational interventions).

A QIC brings together groups of physicians from different healthcare organizations to work in a structured way to improve one aspect of the quality of their service. It involves them in a series of meetings to learn about best practice in the area chosen, about quality methods and change ideas, and to share their experiences of making changes in their own local setting.⁹⁶

Drawn from the literature, Hulscher et al.⁹⁷ defined a QIC as an:

organized, multifaceted approach to quality improvement that involves five essential features: (1) there is a specified topic; (2) clinical experts and experts in quality improvement provide ideas and support for improvement; (3) multi-professional teams from multiple sites participate; (4) there is a model for improvement (setting targets, collecting data and testing changes); and (5) the collaborative process involves a series of structured activities.^{97,p.9}

Different types of collaboratives exist, the most frequently used being the Breakthrough Series (BTS) developed by the Institute for Healthcare Improvement (IHI) in 1995 to help healthcare organizations make 'breakthrough' improvements in quality while reducing costs.^{94,95,98} The driving vision behind the BTS model is this:

sound science exists on the basis of which the costs and outcomes of current healthcare practices can be greatly improved, but much of this science lies fallow and unused in daily work. There is a gap between what we know and what we do.^{98,p.1}

The rationale behind the IHI's thinking was to combine subject matter experts in specific clinical areas with application experts who could help organizations select, test, and implement changes on the front line of care.⁹⁸ The steps in the BTS model follow a particular order (Box 2).

Box 2. Steps in the Institute for Healthcare Improvement's Breakthrough Series (BTS) Collaborative Model⁹⁴

- | |
|--|
| <ol style="list-style-type: none">1. Sponsoring organization identifies topics where a significant gap exists between best and typical practice.2. The Institute for Healthcare Improvement (IHI) then assembles an expert panel.3. Expert panel prepares a package of ideas for closing the gap.4. IHI recruits participating teams to be part of the collaborative.5. Participants engage in prework: forming local improvement team, development of goals and measurements, and characterizing current practice.6. During a collaborative's life, usually six to 12 months, teams from participating organizations attend three learning sessions in which they learn about ideas for better practice and improvement methods that they implement between sessions.7. Between learning sessions, teams share experiences and maintain contact through such mechanisms as conference calls and Internet e-mail listservs while submitting progress reports.8. The lessons learned are spread through a national meeting (congress) and reports. |
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Studying the components of the QIC improvement model, Schouten⁹⁹ has identified three dominant categories of theories underlying the assumptions and

hypotheses of the model: (1) Rogers' theory of diffusion of innovation,¹⁰⁰ describing how innovations spread in social networks; (2) social influence theories¹⁰¹ about how mechanisms such as role modeling and social comparison contribute to this process; and (3) the total quality management (TQM) or 'continuous quality improvement' (CQI¹⁰²), which emphasizes leadership, a culture of continuous cycles of measurement and improvement of performance.

From the start in 1996, QICs were used in different clinical areas (e.g. cesarean section rates, cardiac surgery) and organizational contexts (e.g. intensive care, reducing delays and wait times in operation rooms) and have been adopted by numerous large and small healthcare systems and individual clinics. From 1998 onward, IHI started to launch QICs in chronic care by incorporating the model for delivering chronic illness care developed by Wagner into the BTS model. In more than 50 healthcare systems for diabetes, congestive heart failure, depression and asthma, the chronic illness BTS represented a feasible method of improving the quality of care.¹⁰³ In one of these collaboratives, focusing at improving depression care, the BTS model appeared to be a viable method of disseminating evidence-based care.¹⁰⁴

In the Netherlands, just as in the USA,¹⁰⁴ the United Kingdom,¹⁰⁵ and other western countries, collaboratives have had a central place in the general and mental health reform policies. In 2004 the Ministry of Health, Welfare and Sport in the Netherlands started an ambitious national program to improve health and social care services, ultimately comprising 10 programs costing €100 million¹⁰⁶. The programs were organized by sectors (cure, care, prevention, mental healthcare) or specific subjects or conditions (dementia, diabetes). At the same time, the release of the multidisciplinary guidelines became important moments for national funding bodies to initiate QIC projects, expecting that these would help clinicians to implement the guideline recommendations. From 2004 onward, guideline based QIC projects for depression, anxiety disorders, schizophrenia and Attention-Deficit/Hyperactivity Disorder (ADHD) were launched and funded by the Healthcare Insurance Board (CVZ),^{107,108} the Healthcare Insurance Innovation Fund (Innovatiefonds Zorgverzekeraars),¹⁰⁹ and ZonMw, the Netherlands organization for Health Research and Development, which also provided grants for evaluation studies of some of the mental health QICs.

This popularity of the QIC method was not yet based on scientific grounds. It was only in 2008 that a systematic review of the effectiveness of the quality improvement collaborative was published, showing positive but limited results.¹¹⁰

The review included a total of 72 studies, amongst which 60 uncontrolled reports. Of these, 50 reports were based on the BTS. Conclusions on effectiveness could not be drawn from these reports owing to the lack of adequate reporting procedures on data collection, analysis, and objective evaluations.¹¹⁰ The review's update in 2009 was based on 10 controlled studies (including two randomized controlled trials), out of which three reported a positive effect, five studies reported positive effects on some of the effect parameters and two showed no significant effect. 'Process of care' parameters more often showed 'positive results' than patient outcomes, probably because of the chosen timeframe.⁹⁷ None of the included studies was about mental healthcare topics. In addition to reviewing the effectiveness of QICs, the authors developed a long list of probable determinants of success based on the literature and expert-opinions, but found little empirical information on the impact of these factors within the collaborative and teams studied in the review.⁹⁷ The authors concluded that the evidence underlying the QIC is still limited and the effects cannot be predicted with great certainty. Also, more research is needed to study probable determinants of success or failure and to improve our understanding of how and why QICs work.⁹⁷

In summary, despite their popularity, little is known about the cost-effectiveness of quality improvement collaboratives or about specific components that enhance effectiveness and sustained impact.¹¹⁰ This is even more the case for its use in mental healthcare, for which virtually no research has been done into the potential of the QIC method to implement guidelines and help clinicians improve the quality of care.

Purpose, research questions and structure of this thesis

Purpose

Implementation of evidence-based mental healthcare based on guidelines is a goal of many healthcare providers, mental health organizations, policy makers and funding bodies. There is a lack of knowledge about effective implementation strategies in mental health, both in primary care as in the specialty care setting. Large investments have been made in the Netherlands to organize QICs as a multifaceted strategy to implement guideline recommendations and improve the quality of care and patient outcomes. This thesis was designed to define the impact of the QIC method on the implementation of guideline recommendations for depression and schizophrenia in two different care settings and to draw lessons for future quality improvement programs in the mental health setting.

Research questions

The following research questions were phrased for the research presented in this thesis.

1. What are the activities, results and implementation lessons learned from the Dutch multidisciplinary guideline program?
2. What is the effectiveness of organizational strategies aiming to improve evidence-based care for patients with severe mental illness?
3. What is the impact of a depression QIC on quality indicators in primary care?
4. What are the perceptions of the clinicians participating in a depression QIC on the implementation of stepped care for depression into their daily routines?
5. What is the effectiveness of a depression QIC on antidepressant prescription rates by primary care physicians?
6. What is the cost-effectiveness of care according to the depression QIC compared to usual care?
7. What is the impact of a schizophrenia QIC on quality indicators in secondary mental healthcare organizations?

Structure of the thesis

The thesis consists of two parts. In part I, research questions 1 and 2 are answered by presenting studies on two types of implementation strategies in mental healthcare: (a) guidelines as strategies directed at healthcare professionals and (b) organizational strategies directed at changing the delivery of care within mental health institutions according to guideline recommendations. In part II we focus on research questions 3-7 relating to the effectiveness of QIC strategy on changing care as a multifaceted strategy combining both professional and organizational strategies.

Part I: Strategies for quality improvement in mental healthcare

In chapter 2 we present a narrative overview of multidisciplinary guideline development in mental health in the Netherlands. This chapter provides an in-depth insight into multidisciplinary guideline development in mental health during the last decade in the Netherlands. It describes the national guideline program, the actors involved, the guideline method and activities, and the products and lessons learned on three central topics: the methodology of developing multidisciplinary guidelines, service user and carer involvement and dissemination and implementation.

In chapter 3 we present a study of systematic reviews of organizational strategies to implement change and improve quality and outcomes of care for patients with severe mental illness. To provide a comprehensive overview of the research we searched for systematic literature reviews published in English during 2000 to 2007 in PubMed, PsycINFO, CINAHL, EMBASE, and the Cochrane Central Register of Systematic Reviews. The quality of the studies was assessed and they were categorized using an existing taxonomy of six broad categories of strategies for organizational change.

Part II: The impact of the quality improvement collaborative on improving mental health

In chapter 4 we present a quality improvement report of the depression QIC and its impact on process and outcome indicators. The goal of the QIC was to implement a stepped care model for depression in primary care, based on guidelines. This model had been derived from guideline recommendations by a national expert team. The rationale for this model, its components and influencing factors are reported.

Chapter 5 consists of a qualitative study into the perspectives of clinicians participating in the QIC on quality improvement in primary depression care. In order to understand how clinicians participating in the depression QIC have implemented a stepped care approach for depression in a QIC context, group interviews with eight primary care teams were conducted. Qualitative analysis was supplemented using concepts of the normalization process theory (NPT).

Chapter 6 presents the findings of a quasi-experimental evaluation of the depression QIC on antidepressant prescribing by primary care physicians. The goal of the study was to determine the effectiveness of the depression QIC in terms of change in professional performance, notably antidepressant prescribing. In the study, three years depression performance data extracted from the electronic medical records (EMRs) of the primary care practices participating in the QIC were compared to the data of non-participating colleagues extracted from the database of the Dutch National Information Network of General Practice (Landelijk Informatie Netwerk Huisartsenzorg).

In chapter 7 an economic evaluation of the depression QIC is presented. To study the cost-effectiveness of the depression QIC, a cost-effectiveness study was performed comparing clinical outcomes and costs of patients treated by primary care physicians who participated in the depression QIC to matched controls selected from the primary care cohort of the Netherlands Study of Depression and Anxiety (NESDA), an eight-year longitudinal study to investigate the course of depression and anxiety disorders in five regions in the Netherlands.

Chapter 8 covers the quality improvement report of the schizophrenia QIC, with a similar design as chapter 4. This chapter provides information on the impact of the QIC on schizophrenia process and outcome indicators in secondary care. The goal of the QIC was to implement the evidence-based interventions recommended in the multidisciplinary guideline and to improve the continuity of care for patients with schizophrenia. In addition, influencing factors are reported.

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Part I

Strategies for quality improvement in mental healthcare

Chapter 2

Ten years of multidisciplinary mental health guidelines in the Netherlands

G. Franx
P. Niesink
J. Swinkels
J. Burgers
J. Wensing
R. Grol

Abstract

From 1999 until 2009 the National Steering Group for Multidisciplinary Guideline Development in Mental Health led a national guideline program in the Netherlands. Ten service user and carer groups and 30 professional organizations were involved. Within the program 13 practice guidelines and a range of other deliverables, such as patient versions, checklists and implementation materials, were produced. Lessons learned included the methodology of developing guidelines, service user and carer involvement, and the dissemination and implementation of the guidelines. There are important future challenges such as following a strict and transparent methodology, adhering to process management, improving integration of the service user and professional perspectives, and bridging the gap between guideline and practice.

Background

In the last decade the Netherlands has been one of the leading countries in the field of guideline development. In the late 1980s a revolutionary shift in the healthcare system in the direction of more market-driven competition was initiated by the government. In order to assure the high quality of healthcare, stakeholders such as service user and professional organizations, health insurance companies, the inspectorate and the Ministry of Health, Welfare and Sport invested in a national program for the development of quality methods and instruments, such as standards, guidelines, quality assessment and improvement. From 1995, healthcare funding was placed almost entirely in the hands of for-profit healthcare insurance companies, who commissioned care from privately organized healthcare providers, but were almost fully reimbursed by the national government on their mental healthcare expenses.

In the 1980s the first systematically developed guidelines were published, following the example of the National Institutes of Health in the USA.¹ Two institutes were pioneering in this area: the Dutch Institute for Healthcare Improvement (CBO), which published its first guideline on blood transfusion in 1982, and the Dutch College of General Practitioners (Nederlands Huisartsen Genootschap, NHG), which produced its first guideline on diabetes in 1989. The goals of the CBO program were to develop criteria for quality assessment of hospital performance and to reduce unwanted variation in professional performance.¹ The NHG guidelines aimed to support education and training and to develop the profession of the primary care physician.² Before 1990 there was hardly any guideline development in psychiatry.³ The first 'guideline', the 'onset of a protocol for the care of patients with suicide attempts in general hospitals', was published in 1991.^{4,5} The Netherlands Psychiatric Association (NVvP) published its first monodisciplinary guidelines in 1998 on pharmacotherapy in bipolar disorder, schizophrenic psychoses and anxiety disorders. Other monodisciplinary psychiatric guidelines followed (see Table 1).

Table 1. Monodisciplinary guidelines for psychiatrists published by the Netherlands Psychiatric Association

Guideline	Year of publication
Depressive disorder	1994*
Pharmaco therapy in bipolar disorders	1998
Anti psychotics in schizophrenic psychoses	1998
Pharmaco therapy in anxiety disorders	1998
Patient education	1999
Psychiatric reporting	2002
Delirium, revision in 2011	2004
Psychiatric assessment, revision in 2011	2004
Bipolar disorders	2008
Coercive hospitalization and treatment	2008
Autism spectrum disorders in children	2008
Psychiatric consultation	2008
Electroconvulsive therapy	2009
Help with suicide of psychiatric patients	2009
Psychiatric reporting for legal court	2011
Drivers license assessment	2011
Car driving in autism	2011
Oppositional Defiant Disorder + Conduct Disorders (ODD/CD)	2011
Pediatric Delirium	Planned
Autism in adults	Planned in 2012

* The first depression guideline was published by the CBO and was called a multidisciplinary guideline, despite its strong monodisciplinary character.

From the mid 1990s, the Ministry of Health, Welfare and Sport was concerned about the disparate and diverse guideline activities, and encouraged evidence-based guideline development by funding large development programs, thereby instituting a shift from monodisciplinary to multidisciplinary guidelines. The first program was led by the National Association of Medical Specialists (OMS), the umbrella organization of various specialist societies.¹ Because a single body of guidelines on mental health did not emerge spontaneously, the Ministry gave a strong top-down steer to multidisciplinary guideline development by installing the National Steering Group for Multidisciplinary Guideline Development in Mental Health in 1999 (NSGMH). It received a budget to lead a national guideline program in mental health until 2009, and involved around ten service user and carer groups and approximately 30 professional organizations. The activities and lessons learned during the ten years' existence of the NSGMH were multiple.

In this paper we present these activities, results and lessons learned on three components of the guideline program that we consider of special interest for the international audience: the methodology of developing multidisciplinary guidelines,

service user and carer involvement and dissemination and implementation. Our information is based on selected publications and reports found after a structured search of electronic databases, an Internet search of relevant Dutch journals and websites and papers retrieved from the authors' archives.

Methodology of developing multidisciplinary guidelines

The NSGMH was set up as an informal network of five professional organizations. Two separate committees addressed the issues of service user participation and implementation. The NSGMH selected the guideline topics and it appointed independent and authoritative chairs of the Guideline Development Working Groups (GDGs). The other members of the GDGs were appointed by the boards of the professional and service user organizations involved with the specific disorder. Two or three members of a technical team, working in the CBO, the Trimbos Institute or the National Centre of Expertise for Nurses (LEVV), were added to each GDG.

The mental health guidelines were developed according to the principles of evidence-based medicine procedures⁶ promoted by the Evidence-Based Guideline Development Platform (EBRO), a Dutch network initiated by the Dutch Cochrane Centre and CBO in 1997.^{7,8} The scope of the guidelines as well as the clinical questions to be answered by the guidelines were defined by the GDGs. Based on the questions, literature searches were performed by an information specialist and the reviewing and writing tasks were divided among the GDG members, professionals as well as technical team members. GDG members received some training and a small fee for their tasks.

The format of the guidelines

The guidelines were presented in a fixed format with specific headings for each topic or clinical question: (1) 'Literature review', ending in one or more 'Conclusions', including level of evidence, (2) 'Other considerations' describing the translation of the evidence to recommendations for clinical practice as discussed within the GDG – these considerations could refer to the patient perspective, availability of services, costs and other organizational aspects influencing the content and applicability of the recommendations, and (3) 'Recommendations', providing practical answers or advice regarding the clinical questions posed.

External review and endorsement of the guidelines

After finalizing a draft of a guideline, copies were sent for comments to the boards of all organizations involved and to the Committee of Service User Participation, who also assessed the quality of the participation process and the patient-centredness of the guideline recommendations. The comments were discussed in the final GDG meeting and amendments to the guidelines were made. The final version of the guideline, including an overview of the amendments based on the comments received, was returned to the professional organizations for formal endorsement or approval. After this process of endorsement, which could take 6 months to 1 year, the guidelines had legal implications according to Dutch law, being part of the professional norms and standards for individual clinicians established by the professional organizations.

Multidisciplinary guidelines

Thus far, 13 mental health guidelines have been developed and disseminated, including three updated versions (see Table 2). Two more guidelines (one on suicidal behaviour and one on heroin addiction) were developed following the formal abolition of the NSGMH in 2009, still using its infrastructure but having different funding. For four guidelines (on anxiety disorders, depression, schizophrenia and ADHD), additional funding to develop patient versions was received. Other products, derived from some of the guidelines, consisted of national mental healthcare programs (for anxiety disorders, depression, ADHD in young people and eating disorders) and online decision aids for patients (for anxiety disorders, depression and ADHD in young people⁹), published on the 'Dutch national healthcare portal' (www.kiesbeter.nl).

Table 2. Multidisciplinary guidelines in mental health published from 2003 – 2011

Guideline	Year of publication	Commissioner
Anxiety disorders	2003 + 2009	NSGS
Depressive disorders	2005 + 2009	NSGS + ZonMw
Schizophrenia	2005 + 2010	NSGS + ZonMw
ADHD in children	2005	NSGS
Eating disorders	2006	NSGS
Personality disorders	2008	NSGS
Interventions following disasters	2007	NSGS
Alcohol disorders	2009	NSGS
Domestic violence	2009	NSGS
Anxiety disorders in the elderly	2009	NSGS
Depressive disorders in the elderly	2009	NSGS
Depressive disorders in children	2009	NSGS
Somatically unexplained complaints and somatoform disorders	2010	NSGS
Suicidal behaviour	2011	ZonMw
Heroin addiction	2011	NVvP

Innovation of the methodology

In 2006 the Ministry of Health, Welfare and Sport commissioned a new guideline program, not restricted to mental healthcare, aiming at the innovation of the guideline methodology.¹⁰ The update of the anxiety and depression guidelines was one of three pilot projects to experiment with innovative elements, such as having two guidelines revised by one GDG, involving healthcare professionals from the work setting and from healthcare insurance companies, and introducing a digital project environment and a budget impact analysis of the updated guidelines. The goals of the pilot were to create a process of 'living guidelines' and a streamlined update process to be repeated on a yearly basis as well as to enlarge the scope of the guidelines and make them usable in the work and health insurance setting. The plan was to have the updates completed within 1 year. This plan appeared to be too ambitious, but most of the other elements were viewed quite positively by the participants. Digital sharing and archiving of documents was seen as a success, but online interactive communication was considered too anonymous and cold if it was not balanced out with telephone conferences and face-to-face meetings. Another drawback was the available budget, which did not allow for in-depth working procedures for the two guidelines and demanded very rigorous project management.¹⁰

Lessons learned

Evaluations of the multidisciplinary guideline program led to the identification of several bottlenecks and possible solutions.^{11,12} First, in terms of topic selection, a structured process and assessment of topics had been lacking. New topics occasionally arose, unfortunately sometimes when the budget had already been allocated. This led to the suggestion that agenda setting and topic selection, as well as the decision about which professional and service user groups to involve in a GDG, need to be nationally organized and structured.^{11,12} Secondly, descriptions of roles and tasks were unclear in many GDGs. This resulted in mismatched expectations and delays in the process. Apart from rigorous project and process management by a project manager, a clear division of tasks among the technical team (for reviewing the evidence), a facilitator with good knowledge of the topic (for writing the drafts) and the expert members of the GDG (for discussing and deciding on the recommendations) was considered an important improvement.¹⁰⁻¹² A third bottleneck was that the members of the GDGs were selected as representatives of their organizations and did not feel able to freely express their own point of view. This hampered discussions within the group, especially when

the represented organization was poorly organized, the evidence was weak, or when the recommendation was expected to have important consequences in practice.¹² In several instances, nurses and allied healthcare professionals were provided with additional support to help them develop the 'professional perspective' of their organization as they did not always have the same body of knowledge to which to refer. Finally, it was suggested that the process of external review and endorsement should be improved, for instance by organizing stakeholder involvement from the start and by ensuring that the developmental processes were transparent and adhered to.^{11,12}

Service user and carer involvement

Service user and carer participation was a central element of the NSGMH's multidisciplinary guideline program. The vision was that 'a guideline should, in an ideal world, contribute to the empowerment of the patient, making him or her better equipped for an active role in the treatment process'.¹³ This vision resulted in an extensive plan for service user involvement, and the production of a series of deliverables, such as a literature review on guideline participation¹⁴, two questionnaires for gathering guideline input on patient experiences and preferences¹⁵ and a scientific evaluation in which both service users and professionals were asked about the participation process in some of the GDGs.¹⁶ These products aimed to improve service user and carer participation in the development and implementation of guidelines in mental health.

Methods of involvement

Different formal methods of involving service users and carers were applied.¹⁷ In the first edition of the schizophrenia guideline, service users and carers formed a 'topic group', addressing specific questions concerning the service user perspective, mainly about how to inform and address the patient properly. This group was supported by one of the professionals in the GDG, who wrote the patient perspective chapter, the largest chapter of the guideline. In the guidelines on depression and anxiety disorders, primary qualitative research was carried out among service users to identify experiences of care.^{18,19} In the guideline on personality disorders, a survey among service users and carers was performed with input from the three service users and carers in the GDG.²⁰ The results of these research projects were discussed within the GDGs and resulted in either a separate chapter on the patient perspective or in the integration of the results in the guideline.

Lessons learned

In different evaluations of two of the participation processes (for the schizophrenia and eating disorders guidelines) positive as well as negative experiences of service users and professionals have been reported.^{16,21} Positive comments were given on the good social skills of the service users involved. Good support, preferably having someone assigned to the service users to help them formulate the patient perspective and discuss it within the GDG, and a clear description of the participatory tasks, were facilitating factors. The tasks of service users were, according to some, not to select and assess the literature but rather to help establish the clinical questions and the conclusions. In one of the GDGs, discussions between service users and professionals about the inclusion and quality of certain studies led to negative comments in the press after the release of the guideline, because the final version was not in accordance with the perspectives of a particular service user organization. Another important factor for acceptance of the guideline by service users is proper integration of the service user input in the final products and attractive summaries of guidelines for service users. However, funding was available for only a few topics to produce patient versions.

Overall, developing evidence-based guidelines, in terms of the integration of the clinical expertise with the best available research evidence and patient values, was not an easy thing to achieve, which is in line with what is found in the literature.²² One of the first evaluation reports concluded that although the mental health guidelines paid attention to service user input, as long as the medical perspective dominated the process and the evidence-based rules for guideline development were applied, significant input from service users into the content of the guidelines was difficult, because their experiences and preferences were considered to be of a lower level of evidence.¹⁶ A more recent report on service user involvement within and outside mental health advocated a more structured process and systematic approach to participation as well as the development of methods to make the activities and effects of service user involvement more transparent.²¹

Dissemination and implementation

From the start of the multidisciplinary guideline program, guideline implementation received explicit attention and was embedded in the NSGMH's Committee on Implementation. This committee consisted of delegates of the professional organizations involved in the guideline program. The committee produced several

deliverables, such as an overview of implementation strategies²³, a checklist for assessing the attributes of guidelines for successful implementation²⁴, and a paper presenting the results of interviews with opinion leaders from different professional disciplines about the expected facilitators and barriers for guideline implementation.²⁵ Another activity of this committee was the development of a set of indicators for monitoring the performances of psychiatrists, psychotherapists and psychologists on depression and anxiety disorders.²⁶ This set was the only one to be developed by the NSGMH. It was published separately from the guidelines. There is no information about the use of these indicators in daily practice, as well as of any other indicators linked to the guidelines.

Strategies

The guidelines were for sale as booklets via the Trimbos Institute and freely available (in Dutch only) via the NSGMH website (www.GGZrichtlijnen.nl), the CBO (www.cbo.nl) and the websites of professional societies such as the Netherlands Psychiatric Association (www.nvvp.net). Congresses, publications, and educational programs were other strategies to raise awareness among clinicians about the guidelines. Implementation programs, directed at changing existing routine into care according to guidelines, were no part of the guideline program but were initiated by either the professional organizations (accreditation and auditing), service user organizations (limited dissemination of service user versions or other promotion), the mental health institutions (education, integrated care systems and care pathways based on guidelines) and the CBO and Trimbos Institute (through a series of 'quality improvement collaboratives' (QICs), see below).

Over the last decade, two important practice developments have provided impetus for the implementation of guidelines in an indirect way: the introduction of integrated care systems and care pathways, and the large-scale launch of quality improvement collaboratives. The first instruments are mostly organizational translations of guidelines, but also contain practice-based descriptions of care. In the Netherlands around 75% of the mental health organizations have developed these instruments for specific patient groups and based the redesign of their care processes on them.^{27,28} The QICs have also become very popular in the Netherlands, especially within the Ministry of Health, Welfare and Sport. QICs are quality improvement projects, using multifaceted strategies to rapidly improve performance and outcomes. QICs generally have five essential features: (1) a focus on a specific topic with gaps between best and current practice; (2) clinical

experts providing ideas and support for improvement; (3) participation of multidisciplinary teams from multiple sites; (4) a model for improvement (setting targets, collecting data and testing changes); and (5) a collaborative process with a series of structured activities in a given time frame.^{29,30} In the Netherlands the government has sponsored different large QIC programs over the last decade. Mental health QICs were directed at implementing guidelines on depression, anxiety disorders, schizophrenia and ADHD. All of them have led to improvements in the quality of care through guideline recommendations being implemented at the local level.³¹

Reception and uptake

Multiple factors can influence the uptake of guidelines in daily practice, including the characteristics of guidelines themselves. Relevant technical characteristics of guidelines have been identified in the literature, such as having: (1) concrete aims and objectives, (2) sufficient evidence, (3) a clear structure and attractive lay-out, (4) clear and specific recommendations that take into account the norms and values of the target users, and (5) applicability in different settings.³²

Before the publication of the first multidisciplinary guideline, a qualitative research project reported that the new guidelines were welcomed by professionals because they were expected to structure the negotiation and relationships with service users, and with other healthcare professionals, to give access to scientific information and to strengthen the position of the allied health professions in the multidisciplinary field.²⁵ After the publication of the first guidelines in 2003 and 2005, many professionals thought the guidelines contained clear recommendations, a good scientific base, showed a good fit with daily work while leaving enough space for individual choice.³³ Later, in 2008, a survey among 400 psychiatrists, psychotherapists, psychologists, nurses and creative therapists showed that 91% of the respondents knew about the existence of the guidelines (among primary care physicians this was 73%) and two thirds of the respondents indicated they possessed one or more of the guidelines.³⁴ However, only 28% of the respondents reported intentionally using them in daily practice. Reasons for not using the guidelines were their poor applicability to problems encountered in daily practice and a lack of skills and time to apply them. There were quite large differences between the professional groups, psychiatrists being by far the most familiar with the content and use of the guidelines (89%) compared with 56% of social workers. This relatively high awareness of guidelines among psychiatrists is in line with the results of medical audits by the Netherlands Psychiatric

Association. Although the survey had limitations, a relevant outcome was that respondents who had participated in a quality improvement project such as a Breakthrough project or attended training or education used the guidelines more often.³⁴

A more fundamental issue for some professionals was the use of the Diagnostic and Statistical Manual of Mental Disorders (DSM) diagnosis as the starting point for guideline development. For instance the concept of schizophrenia as the basis for guidelines and treatment was considered 'harmful' and ignored 'the relationship between a patient's life history and the onset of symptoms and the possible link between the symptoms'.³⁵ Romme³⁵ concludes that 'we do not yet know enough to draw up treatment guidelines and that from a scientific or ethical point of view the DSM cannot be regarded as the gold standard: for such treatment guidelines.'

In line with this argument is the recurrent discussion about the narrow focus of the guidelines – that they give much attention to medical issues, such as symptom reduction, and much less to the perspective of the non-medical professions, and to issues such as the contexts and causes of symptoms.^{33,34} As a consequence, the guidelines limit recommendations about effective treatment to interventions based on evidence generated by randomized controlled trials. In the field of the psychological treatments, interventions other than cognitive and behavioural therapies such as person-centred psychotherapy are not reviewed because they lack sufficient evidence.^{33,34,36}

To some, the lack of applicability was caused by the gap between the guideline recommendations and daily practice. Clinicians complained about the poor integration of the different multidisciplinary perspectives, leaving uncertainty among users about the roles and tasks of the different professions during the care process and the collaboration needed at different points.^{16,34} Other complaints are that the guidelines do not sufficiently respond to the problems encountered in daily practice³⁷, to the expertise of professionals and existing best practice^{27,38}, to specific patient characteristics, such as sex-related factors³⁹ or to the information needs of specific disciplines.³³ Finally, a common critique from virtually all professionals and service users, regardless of their background, was directed at the format of the guidelines: the books were too voluminous and lacked practical summaries, simple monodisciplinary instructions, algorithms, and service user versions.^{16,33,34}

The dissemination and uptake of the service user versions of the guidelines have also been evaluated. Service user representatives indicated that these products were hardly known by the larger audience and virtually unused in the

consultations between service users and professionals. However, they do have a function as background literature for service user representatives.⁴⁰

Conclusion and future directions

In this paper we presented the national multidisciplinary guideline program in the Netherlands of the last 10 years, initiated by the Ministry of Health, Welfare and Sport and steered by a national group in which psychiatrists, psychotherapists, psychologists, primary care physicians, nurses, service user and carers closely collaborated. The evidence-based method of guideline development was introduced to almost 30 professional organizations, service users were part of each guideline project and attention was given to the implementation of the guidelines among different user groups. From 1999 until 2010, 13 guidelines and many more products were produced. Some of the projects were evaluated, as well as the program itself. Considering these achievements one can conclude that the program has been a success.

Summarizing the lessons learned, we can conclude that in terms of the guideline development methodology, an internationally accepted method has been developed and implemented over the last decade. Guideline development needs to be a transparent, evidence-based process with strict division of tasks and roles among the technical team and the professionals as well as having rigorous process and project management in order to prevent delays and mismatched expectations. Service user and carer participation has been an interesting learning experience, with a range of participatory methods applied, and experiencing difficulties in integrating service user input in an evidence-based guideline. Dissemination of the guidelines, in terms of professionals becoming aware of them, has occurred during the last decade, although the academic professions have been more exposed to guidelines compared with the allied health professions or service users and carers. Still, coming from a situation in mental health in which there was virtually no familiarity with or acceptance of guidelines, this can be considered a real transformation. It is the implementation of the guidelines that will need the most of our attention in the coming years. This means a search for new formats of guidelines, lean methods of development and innovative implementation strategies, making optimal use of the enormous possibilities of information technology. But the biggest challenge will be to bridge the evidence – practice gap, in terms of developing guidelines that really offer meaningful information to professionals and service users, and inversely making

professionals and service users sensitive to using evidence in daily decision making.

These topics will be on the agenda of the new Guideline Network in Mental Health, a follow-up of the NSGMH, which was abolished in 2009 when direct government funding of the guideline program ended, and will be replaced by a new infrastructure, initiated and led by the professional organizations. This new organization, a formal collaboration of service user and professional organizations and the national centre of expertise in mental health (Trimbos Institute), will have to deal with these issues in a changing policy environment since the Ministry of Health, Welfare and Sport has announced the foundation of a national institute for quality of care in the coming years. This institute will co-ordinate, steer and monitor a national quality agenda, in close collaboration with professionals, service users and other stakeholders. After all, it is the quality initiatives from the healthcare providers themselves that will remain the crucial driver for change, with encouragement and support from national policy makers and funding bodies.

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Chapter 3

Organizational change to transfer knowledge and improve quality and outcomes of care for patients with severe mental illness: a systematic overview of reviews

G. Franx
H. Kroon
J. Grimshaw
R. Drake
R. Grol
M. Wensing

Abstract

Objective: To provide a comprehensive overview of the research on organizational changes aimed at improving healthcare for patients with severe mental illness and to learn lessons for mental health practice from the results.

Method: We searched for systematic literature reviews published in English during 2000 to 2007 in PubMed, PsycINFO, CINAHL, EMBASE, and the Cochrane Central Register of Systematic Reviews. Three reviewers independently selected and assessed the studies' quality. Studies involving changes of who delivers healthcare, how care is organized, or where care is delivered were included. We categorized the studies using an existing taxonomy of 6 broad categories of strategies for organizational change.

Results: A total of 21 reviews were included. Among these, 17 had reasonably good methodological quality. Almost all reviews included or intended to include randomized controlled trials (RCTs), 6 reviews did not identify studies that met eligibility criteria. Multidisciplinary teams and integrated care models had been reviewed most frequently (a total of 15 reviews). In most studies, these types of changes showed better outcomes in terms of symptom severity, functioning, employment, and housing, compared with conventional services. Different results were found on cost savings. Other types of organizational changes, such as changing professional roles or introducing quality management or knowledge management, were much less frequently reviewed. Very few reviews looked at effects of organizational changes on professional performance.

Conclusions: There is a fairly large body of evidence of the positive impact of multidisciplinary teams and integrated care changes on symptom severity, functioning, employment, and housing of people with severe mental illness, compared with conventional services. Other strategies, such as changes in professional roles, quality or knowledge management, have either not been the subject of systematic reviews or have not been evaluated in RCTs. There is still a lack of insight in the so-called black box of change processes and the impact of change on professional performance.

Introduction

The challenges posed by chronic illnesses are especially pertinent to mental healthcare, as the prevalence and costs of chronic mental illness are growing and a clear perspective on their management is lacking.¹ Chronic mental illness includes schizophrenia and related disorders, bipolar disorder, and depression with psychotic features. Schizophrenia is the most frequently diagnosed disorder among patients with severe mental illness, affecting 1% of the Canadian population. Though the incidence is low, the prevalence is high owing to lifelong chronicity. Globally, nearly 3% of the total burden of human disease is attributed to schizophrenia.² In addition to persons with schizophrenia, many others are disabled by serious mental illnesses. Based on data from the National Comorbidity Study, Wang et al³ estimated that 5% of the US population is so affected. The cooccurrence of substance use disorder and severe mental illness, although frequently underdetected, is most common and clinically significant, affecting between 15% and 60% of individuals.^{4,5}

In the past decades, better knowledge was acquired of the services that can help people with severe mental illness to lead satisfying lives. The evidence, taken in its entirety, points to the value of treatment approaches combining specific pharmacological treatment with specific psychosocial treatments, including psychological interventions (particularly cognitive-behavioural therapy), family interventions, supported employment, assertive community treatment, integrated treatment for dual disorders, and skills training.⁶ Studies also suggest that the provision of mental healthcare for patients with severe mental illness demands a better integration of treatment, rehabilitation, and support services at the clinical team level. Integration at this level can increase the effectiveness for patients with severe mental illness, while treatment integration at the organizational or system level seems less promising in terms of clinical effectiveness.⁷

Despite this growing evidence base, the gap between what works and what is provided in routine mental health setting is still large, owing to various barriers.⁸ Although guidelines for the treatment of schizophrenia and bipolar disorders are available in many western countries, they have only marginally incorporated recommendations concerning psychosocial interventions and effective community treatment approaches.⁹ Widespread implementation of evidence-based care models for people with severe mental illness has generally failed until now.¹⁰ Patients experience problems at a system level, such as separate administrative divisions and funding pools and arbitrary service divisions, leading to

fragmentation of services, nonadherence, and dropout from treatment programs. This is especially the case for severely mentally ill patients with a comorbid substance abuse problem.^{4,5}

There is a large body of research on how to implement guidelines and care models in routine daily practice, mainly from outside mental healthcare settings, which has provided relevant insights. Education targeted at consumers or health professionals is not always effective at changing healthcare practices and improving patient outcomes. In most cases, multifaceted strategies are needed, incorporated in a longer time multi-level approach, targeting patients, professionals, financing and regulatory systems, and care organizations.¹¹⁻¹³ Further, implementation experts believe that tailoring of guidelines and care models to individual and locally relevant organizational factors is needed.¹⁴ For instance, in some settings it may be most helpful to set up multidisciplinary teams of care providers, while in other settings a specific treatment may have to be provided in another place, for example outside the hospital. There is no single solution to all implementation problems; however, it can be instructive to learn from experiences in other settings. While our general knowledge on effective transfer of evidence to practice is growing, there is less information on these issues in the area of specialized mental healthcare.

This article reviews the research evidence on organizational changes, aiming to improve evidence-based care for patients with severe mental illness. We focused on systematic reviews because they have a lower risk of biased results, compared with individual studies, even if these were RCTs.¹⁵ In a recent review of reviews, focusing on various healthcare settings, numerous organizational changes were found to improve professional performance, patient outcomes, and efficiency of services in many healthcare settings.¹⁶ We wondered whether such interventions would also be effective in the care for severe mental illness.

Method

Expecting the most relevant implementation literature to be only recently reviewed, we performed a search of systematic literature reviews, published in English during 2000 to 2007, in PubMed, PsycINFO, CINAHL, EMBASE, and the Cochrane Central Register of Systematic Reviews.

Combinations of search terms related to the following keywords were used: severe mental illnesses, schizophrenia, bipolar disorder, organizational interventions,

meta-analysis, or systematic reviews. Organizational changes were defined according to the Cochrane Effective Practice and Organisation of Care Group definition as interventions that involve a change in the service delivery of healthcare. This change involves who delivers healthcare, how care is organized, or where care is delivered.¹⁷ A taxonomy of existing organizational interventions was used (Box 1).

Box 1. A taxonomy of organizational changes to improve patient care^a

- Revision of professional roles: substitution of tasks from one professional by the other or by a supplementation of a set of tasks by a new team member
- Multidisciplinary teams: clinical teams or collaborations of multiple professional disciplines
- Integrated care services: organized systems for care delivery to patients with specific diseases, who receive care according to a protocol, which covers the spectrum from screening to education, treatment, and monitoring. Also labeled as disease management programs or integrated care pathways. Case management has been included in this category.
- Knowledge management: optimal organization of knowledge within an organization. In practice, it mainly refers to the use of information and communication technology to support patient care, such as computerized medical record-keeping.
- Quality management: a group of approaches characterized by a focus on customers, continuous efforts to improve, performance measurement and supportive leadership and culture. Total quality management, continuous quality improvement, and business redesign are included in this category.
- Changes in setting: a change in the location of care delivery.

^aDerived from Wensing et al¹⁶

Three reviewers independently assessed the eligibility of studies, based on a screening of titles and abstracts. All selected reviews were appraised by 2 reviewers independently, using a structured data extraction form containing questions about the focus of the review, the search strategy, the methodological quality, and the main results. The form also contained 6 quality assessment questions that focused on the reviews information about the search strategy and the intended assessment and analysis of the eligible articles. We based these 6 questions on those used in other reviews of reviews (Box 2).

Box 2. Quality assessment questions for included reviews^a

- Is the search strategy described (search terms)?
- Was the search for evidence reasonably comprehensive (relevant databases, reference lists in included articles, authors and [or] experts contacted)?
- Were the criteria for deciding which studies to include in the review reported (types of studies, participants, interventions, outcomes)?
- Was bias in the selection of articles avoided (explicit selection criteria used, independent screening of full text by at least 2 reviewers)?
- Were the criteria for assessing the validity of the studies that were reviewed reported?
- Last point: Were the methods used to combine the findings of the relevant studies reported (to reach a conclusion)?

^aDerived from Oxman⁴²

We valued each quality question as follows: a positive answer received 1 point; a cannot tell or partial answer received 0.5 points; and a negative answer received 0 points. We added up the total number of points for each of the 6 questions to calculate the total score for each review. Substantial differences of opinion among reviewers throughout the process were resolved by returning to the relevant literature and by discussion. The studies were ordered and described according to 6 broad categories of strategies for organizational change, looking at the most important characteristics of the organizational change that was implied (Box 2). Where possible, effect sizes were expressed in terms of average effect size, odds ratio, relative risk (categorical outcome data), weighted mean difference, standardized mean differences (for continuous data), number needed to treat, or percentage of studies with improvements. In case of a meta-analysis, a significant effect or a nonsignificant effect was recorded. Where quantitative summary measures of effectiveness were not performed, the range of effects across studies was used.

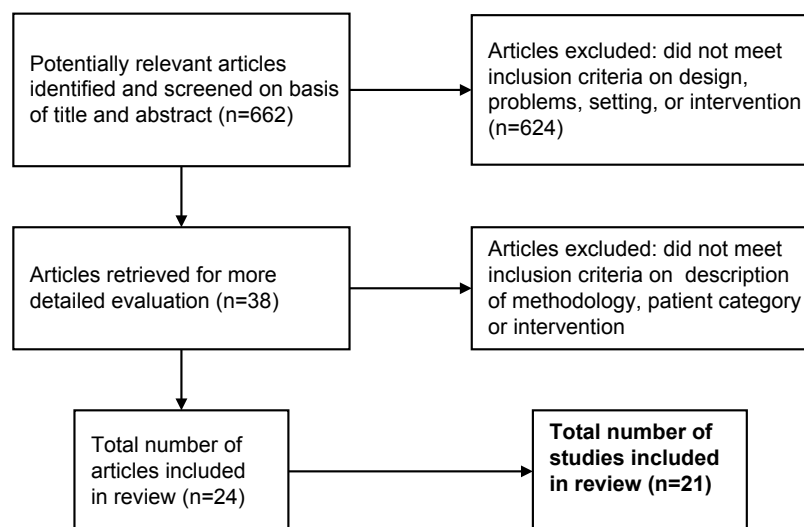
Results

Description of studies

A total of 21 reviews were included.^{4,5,18-36} The most relevant reasons to exclude papers were that they did not: focus on severe mental illness, study an organizational change, or have a method section describing their review methods (Figure 1). Of the included reviews, 17 reviews scored 4 to 6 points regarding methodological quality. Four articles received a lower score, owing to a lack of

information on all our quality criteria. Almost all reviews included only controlled trials or RCTs. Six reviews did not find any eligible studies. We still included these in our review and assessed their search strategy and the quality of the intended assessment procedures described.^{19,20,24,25,27,33} The maximum number of studies included in a single review was 26. The mean number of studies per review was 11, excluding the reviews with no studies.

Figure 1. Flow chart of included studies



Effectiveness of the revision of professional roles

One review was included in this category but found no eligible studies (Table 1). The review aimed to assess several strategies including the role of nurses prescribing medication.

Table 1. Studies examining the revision of professional roles ($n=1$)

Study, <i>n</i> , type, years searched	Quality score	Focus and (or) comparison	Type of outcomes found:	Methods and main results
Muralidharan et al. ³³ <i>n</i> =0, RCTs, up to 2006	5,5	Containment strategies for managing acutely disturbed people, including changes in patient-staff ratios, tasks of nurses and locked wards.	Patient outcomes* Costs	no studies included

* Patient outcomes can be: engagement with treatment (lost to follow up, leaving the study early), clinical outcomes (death, mental state, symptoms, social and cognitive functioning), adverse effects, (clinical, violence, criminal behaviour), quality of life, burden on relatives, satisfaction with care, employment status, homelessness and service use (admissions to hospital, mean days in inpatient care).

Effectiveness of multidisciplinary teams

Seven reviews were included in this category (Table 2). Three reviews assessed a well-defined and -researched multidisciplinary team approach, namely, the ACT program.^{18,21,28} The main goal of ACT is to prevent hospitalization in patients at risk for relapse through provision of comprehensive integrated community services.¹⁸ The model prescribes that patients are assigned to one multidisciplinary team with a fixed caseload and a high staff to patient ratio that enables more intensive contact. It delivers all services when and where needed by the patient, 24 hours a day, 7 days a week. Most ACT programs that were investigated appear to adhere to some degree to the standards for ACT care processes and professional behaviour, but also deviate from the specifications in some way.²⁸ Although a lot of research on ACT exists, active ingredients of these programs have not been identified so far. The positive effects could be due to improved medication compliance, continuity of caregivers, 24-hour coverage, site of and intensity of services, or a combination of these elements.¹⁸

Table 2. Studies examining the effectiveness of multidisciplinary teams (n=7)

Study, n, type, years searched	Quality score	Focus	Type of outcomes found:	Methods performed and main results
Bustillo et al. ¹⁸ , n=18, RCTs, 1966-2000	2	Assertive Community Treatment and Supported Employment programs for people with schizophrenia versus control.	Patient outcomes* Costs	Narrative review. ACT: reduction of time spent in hospital: PSI 14/24 = 58%, improved housing stability: PSI 9/13 = 69%, modest effects on functioning, different results on cost savings: PSI 1/2=50%. Supported Employment: significant increased rates of competitive employment: unweighted mean 65% vs 26%, no beneficial effects on re-hospitalization.
Coldwell et al. ²¹ , n=10, 6 RCTs and 4 observational studies, up to 2003	5	Assertive Community Treatment for homeless severely mentally ill compared to standard case management	Patient outcomes	Meta-analysis ACT favours housing: WMD 37%, CI 18-55% and symptom severity: WMD=26%, CI 7-44%. No difference in hospitalization: WMD=10%, CI -7-27%.
Kirsch et al. ²⁸ , n=16, 9 experimental or quasi-experimental and 7 non-experimental, 1990-2003	3	Looking at employment outcomes of Assertive Community Treatment	Patient outcomes, focused on employment outcomes	Narrative review ACT has better employment outcomes in RCTs: PSI = 6/7, compared to usual treatment, especially in teams including a vocational specialist.

Study, n, type, years searched	Quality score	Focus	Type of outcomes found:	Methods performed and main results
Marshall et al. ³¹ , n=7, 1 on integrated teams, up to 2002	6	7 comparisons including integrated team versus standard care to improve outcome in first episode psychosis.	Patient outcomes Costs	Narrative review, data on relevant comparison derived from 1 study. Numbers of people leaving the study early were significantly lower in the integrated treatment group, by one year: RR 0.59, CI 0.4-0.8 and by two years: RR 0.64, CI 0.5-0.8. functioning, user satisfaction and compliance with treatment were better in the intervention group.
Mitchell ³² , n=7, 1 RCT and 1 pragmatic controlled trial for chronic mentally ill patients, up to 2001	4	Monthly case-conferencing and regular consultations between a primary care physician and an outpatient-based team	Patient outcomes Professional behaviour Costs	Narrative review Sign. decrease in mean number of unmet needs: 0.57 vs 1.62 (p < 0.001), sign. increase in mean number of met needs: 2.62 vs 1.60 (p < 0.001). Less readmissions: 27% vs 64%, (p 0.002). During intervention more contact with health services: community psychiatric nurse 71% vs 30%, social worker 48% vs 26%, occupational therapist 48% vs 2% (p < 0.01). Client satisfaction better on scale 1-4. low is better 1.86 vs 2.23.
Simmonds et al. ³⁴ , n=5, RCTs and quasi-controlled trials, up to 1998	5,5	Community mental health team (CMHT) management	Patient outcomes Costs	Meta-analysis Sign. benefits with respect to deaths by suicide or suspicious circumstances: OR 0.32, CI 0.09-1.12. Sign. smaller proportion dropped out of CMHT management early: OR 0.61, CI 0.45-0.83. Less costs for people treated with CMHT management.
Simpson ³⁵ , n=12, RCTs and 7 other comparative studies, 1966-2001	5	Users involved in health service and healthcare delivery by a team as providers or trainers of service providers.	Process measures of involvement, outcomes for involved users and their patients	Narrative review, no numeric data. Users spent more time in contact with patients and less time on telephone and office work. No effects in clinical outcomes, some improvement in quality of life, social functioning, reported life problems, burden to the family, less admissions to hospital

* Patient outcomes can be: engagement with treatment (lost to follow up, leaving the study early), clinical outcomes (death, mental state, symptoms, social and cognitive functioning), adverse effects, (clinical, violence, criminal behaviour), quality of life, burden on relatives, satisfaction with care, employment status, homelessness and service use (admissions to hospital, mean days in inpatient care).

One review actually found a reduced time spent in hospital and improved housing stability but modest effects on functioning, and different results on cost savings.¹⁸ This review showed that programs that more closely resemble the original ACT model tend to have a more reliable effect on hospitalization. More recent studies tend to show no differences among study groups, potentially as a result of enriched packages of high-quality clinical case management as control conditions. Another review looked at the effect of ACT on a subpopulation of homeless mentally ill individuals and found significant improvements in rates of homelessness and levels of psychiatric symptom severity. No differences were found in reducing hospitalization for this population.²¹ Another review looked at employment outcomes and found the ACT model to be superior to usual treatment.²⁸ The studies that did not include a vocational specialist were more mixed in their results, suggesting that a vocational specialist may have a positive impact on outcomes.

Multidisciplinary community mental health teams are widely recognized generic care teams offering a range of interventions. Although they have a much lower profile than the assertive community teams, one review found that they show positive effects on deaths, leaving care early, hospitalization, and costs.³⁴

Another multidisciplinary team approach consists of early intervention for patients with prodromal symptoms or patients with first episode psychosis. Teams provide integrated care and are considered alternatives to standard psychiatric care. One review showed that, owing to insufficient data, there was little evidence to support the introduction of either specialized teams or standard care for this patient group. This might change in the near future, as several large studies are still ongoing.³¹

Collaboration among primary care physicians and specialists in multidisciplinary teams in improving functional outcomes for chronic mentally ill patients was investigated in 2 small studies included in one of the reviews.³² The studies showed a modest positive impact that did not occur in physically chronically ill patient groups. The arrangements with the primary care physician consisted of monthly case-conferencing and regular consultations with an outpatient-based team.³²

One review looked at the effects of involving patients as employees in service delivery teams, mostly as case managers.³⁵ Current or former users of mental health services owing to serious mental illness were added to the professional team. They received training, support, and payment to learn necessary organizational and interpersonal skills. Some studies indicated benefits for clients

of user employees, such as improvement in quality of life, social functioning, and burden to the family. No serious disadvantages were found.

Effectiveness of integrated care services

Eight reviews assessing integrated care services were included (Table 3).

Integration of mental health and housing services

Supported housing schemes involve self-contained apartments located in a shared building or site with office-based professional workers available during office hours to support tenants, to maintain the tenancy, or to prevent homelessness. One review aimed to assess the effectiveness of supported housing schemes for people with severe mental illness living in the community but did not find eligible studies.²⁰

Integration of vocational rehabilitation and mental health services

Two reviews focused on programs integrating treatment and approaches to improve the employment status of people with severe mental illness.³⁷ Models entitled Prevocational Training, Supported Employment, and a modification of the latter model, namely, Individual Placement and Support, were assessed. In Prevocational Training, participants undergo a period of preparation, such as working in a sheltered environment or receiving some form of pre-employment training, before they are encouraged to seek competitive employment. Supported Employment is a place-then-train approach that attempts to place clients immediately in competitive employment, with less than a month of preparation. Patients then receive on-the-job training. A modification of the Supported Employment program is the Individual Placement and Support model. This model is usually integrated within mental health settings so that participants have access to healthcare providers and vocational specialists. The treatment team collaborates with the participants' coworkers and supervisors. Both reviews found that Supported Employment programs, including Individual Placement and Support, are superior to conventional types of rehabilitation.³⁶ Prevocational training was not found to be superior to standard care. Owing to methodological limitations, little evidence was found that vocational programs improved symptoms, quality of life, or social functioning.³⁷

Table 3. Studies examining the effectiveness of integrated care services (n=8)

Study, n, type, years searched	Quality score	Focus	Type of outcomes found:	Main results
Brunette et al. ⁴ , n=10, controlled studies, not reported	1,5	Programs for people with severe mental illness and co-occurring substance use disorders, integrating mental health treatment, substance abuse interventions, housing and other support at different levels of integration.	Patient outcomes*	Narrative review Improved retention: PSI 7/8 = 87,5%, Improved housing: PSI 3/4 = 75%, Substance abuse improved: PSI 5/10 = 50%.
Chilvers et al. ²⁰ , n=0, randomized or quasi- RCTs, up to 2006	5,5	Supported housing schemes compared with outreach support schemes or standard care	Patient outcomes Professional satisfaction Costs	No studies included
Crowther et al. ²² , n=18 RCTs, up to 1998	5,5	Varieties of work rehabilitation programs, Supported Employment and Individual Placement and Support versus Prevocational Training.	Patient outcomes, mainly employment outcomes Costs	Meta-analysis Supported Employment is superior to Pre-vocational Training, 34% of clients employed in the Supported Employment group, versus 12% in Pre-vocational training, ARR= 0.76, CI 0.69-0.84. No major differences in clinical outcomes and costs.
Drake et al. ²³ , n=26, controlled studies, 1994-2003	1,5	Integrated care packages with mental health and substance abuse professionals in the same team	Patient outcomes	Narrative review, no numeric data Greater treatment progress and decreased drug/alcohol use outcomes in all relevant studies (n=4), other outcomes similar.
Hickling et al. ²⁵ , n=0, RCTs, up to 2001	5,5	Treating psychosis in open general medical wards	Patient outcomes Costs	No studies included
Joy et al. ²⁶ , n=0, RCTs, up to 2006	5,5	Mother and baby units for the treatment of perinatal psychosis	Patient outcomes (mother and child)	No studies included
Jeffery et al. ⁵ , n=6, RCTs, up to 1998	6	Substance misuse treatment programs combined with psychiatric care versus psychiatric care alone and different types of integrated treatment programs versus non-integrated programs and each other. All programs for people with problems of both substance misuse and serious mental illness.	Patient outcomes	Meta-analysis Number of people lost to evaluation: no difference between the combined program and standard care at 6 months: OR 0.99, CI 0.58-1.67. People lost to treatment: no clear difference between integrated and non-integrated program: OR 0.38, CI 0.12-1.23 and no difference between ACT vs other program: OR 1.66, CI 0.77-3.58.

Study, n, type, years searched	Quality score	Focus	Type of outcomes found:	Main results
Twamley et al. ³⁶ , n=11, RCTs, up to 2002	4	Work rehabilitation programs, Supported Employment and Individual Placement and Support	Patient outcomes only employment measures	Meta-analysis Better outcomes compared to conventional services in terms of achieving competitive work: WMD based on 5 studies: 0.79, increased chance of obtaining competitive work: OR 4.14.

* Patient outcomes can be: engagement with treatment (lost to follow up, leaving the study early), clinical outcomes (death, mental state, symptoms, social and cognitive functioning), adverse effects, (clinical, violence, criminal behaviour), quality of life, burden on relatives, satisfaction with care, employment status, homelessness and service use (admissions to hospital, mean days in inpatient care).

Integrated services for dual diagnoses

Three reviews looked at integrated services for dual-diagnoses patients.^{4,5,23} One review looked into the effects of integrated and nonintegrated treatment programs within psychiatric care, as opposed to standard psychiatric care. One of the 6 included studies compared the ACT model with any other integrated care model. No evidence was found that integrated care produced better or worse outcomes.⁵ Another review of integrated care for dual-diagnoses patients included studies that explicitly assessed the impact of organizational and structural changes. These studies focused on mental health and substance abuse clinicians as joint members of the same ACT team, without specifying the clinical intervention given by these teams.²³ The review reported mainly positive effects on patient outcomes; no outcomes at the level of professional practice were reported.

Because dual diagnoses are associated strongly with unstable housing and homelessness, residential programs have emerged as a popular intervention strategy. A third review investigated the effects of integrated residential programs for people with dual disorders, looking at the effects associated with different levels of integration.⁴ Among 10 controlled studies, all with major methodological difficulties, 9 suggested positive effects of residential dual-diagnosis programs that integrate and modify mental health and substance abuse treatment approaches. Greater levels of integration were associated with better engagement and retention in treatment. The specific structures and components of the programs varied among the studies and little can be said about which are most effective.⁴

Integration of psychiatric and medical services in general hospital

One review aimed to assess the impact of integrated care for mothers with a perinatal psychosis and their children. Mother and baby units are common in the United Kingdom, but no RCTs could be found that suggest the efficacy of this type

of care, compared with inpatient care for mothers without any attachment to a mother and patient unit.²⁷ Another review assessed the evidence for the benefits of open general medical wards to treat people with psychosis, compared with specialist psychiatric units. This model, requiring the integration of psychiatric treatment procedures into services provided by nurses and doctors of conventional hospital wards, can be especially relevant to countries with limited psychiatric inpatient care. No studies met inclusion criteria.²⁵

Effectiveness of knowledge management

No reviews were included in this category.

Effectiveness of quality management

One review assessed the value of outcome measurement and needs assessment tools in everyday routine care and the feedback they provide to clinicians and clinical teams in improving the management and outcome of patients with schizophrenia and related disorders. Although in the United Kingdom numerous policy initiatives are aimed at the introduction of outcomes measurement tools, no RCTs were found on this topic (Table 4).

Table 4. Studies examining the effectiveness of quality management (n=1)

Study, n, type, years searched	Quality score	Focus	Type of outcomes found:	Main results
Gilbody et al. ²⁴ , n=0, RCTs, up to 2002	6	Standardized instruments to help clinicians make decisions about treatment for persons with schizophrenia and to assess subsequent therapeutic impact.	Patient outcomes* Professional outcomes (acceptability, adapting treatment plan) Costs	No studies included

* Patient outcomes can be: engagement with treatment (lost to follow up, leaving the study early), clinical outcomes (death, mental state, symptoms, social and cognitive functioning), adverse effects, (clinical, violence, criminal behaviour), quality of life, burden on relatives, satisfaction with care, employment status, homelessness and service use (admissions to hospital, mean days in inpatient care).

Effectiveness of changes in setting of care provision

We found 4 reviews on these types of changes (Table 5).

Table 5. Studies examining the effectiveness of changes in setting (n=4)

Study, n, type, years searched	Quality score	Focus	Type of outcomes found:	Main results
Catty et al. ¹⁹ , n=0, RCTs, up to 2006	6	Non-medical day centre care for people with severe mental illness	Patient outcomes Costs	No studies included
Joy et al. ²⁶ , n=5 RCTs, up to 2006	6	Crisis intervention at home compared to standard hospital based crisis intervention	Patient outcomes Costs	Meta-analysis Persons with home based crisis intervention were more likely to stay in care for at least a year (NNT 13, CI 7 tot 130). Repeated hospital admissions ARR=0.72 (95% CI 0.54-0.97). Favourable outcomes on burden on families. Costs: home based care found to be significantly cheaper (PSI 2/2 =100%)
Marshall et al. ²⁹ , n=8, RCTs, 3 trials concerning individuals with schizophrenia, up to 2000	6	Day treatment programs, day care centres or transitional day hospital care versus out-patient care for people with psychiatric disorders	Patient outcomes Costs	Meta-analysis Day treatment group data showed a trend favouring day treatment in terms of improved mental state: RR 1.85 CI 0.99-3.46 at 18-24 months. Insufficient evidence in terms of other outcomes. Also insufficient evidence that day care centres are superior to out-patient care. Mental state outcomes at 3 months: WMD 0.31, CI -0.20-0.82. Some inconclusive data on costs, suggesting day care centres may be more expensive. Only one trial on transitional day hospitals. Insufficient evidence to show superiority over out-patient care. Mental state outcomes at 12 months: WMD 0.17, CI -0.39-0.73.
Marshall et al. ³⁰ , n=9, RCTs, up to 2000	6	Day hospital versus inpatient care for people with acute psychiatric disorders	Patient outcomes Costs	Meta-analysis Combined data suggests that acute day hospitals may reduce inpatient admissions by about 23%. No effects on social functioning and burden on carers. Day hospital care 20.9-36.9% cheaper than inpatient care (PSI 4/5=80%).

* Patient outcomes can be: engagement with treatment (lost to follow up, leaving the study early), clinical outcomes (death, mental state, symptoms, social and cognitive functioning), adverse effects, (clinical, violence, criminal behaviour), quality of life, burden on relatives, satisfaction with care, employment status, homelessness and service use (admissions to hospital, mean days in inpatient care).

Day hospitals and day centres

Two reviews looked at the impact of day hospitals or day centres as alternatives to outpatient care.¹⁹ One review focused on day care centres, psychiatric day hospitals offering continuing care to patients with severe mental disorders.²⁹ Day centres were not superior to outpatient care in terms of engagement with care, admission rates, clinical outcomes, patient satisfaction, or costs. A second review

unsuccessfully looked for RCTs of nonmedical day centres, offering long-term support for the chronically ill, as an alternative to outpatient departments and day hospitals run by health professionals.¹⁹ The authors suggest that British policy makers' recent emphasis on this type of day care is not matched by robust evidence concerning their effectiveness in meeting clinical and social needs.

Changes in acute care setting

Two reviews investigated different forms and settings of care for people with acute psychiatric problems.³⁰ Marshall found 9 studies showing better patient outcomes of psychiatric day hospitals, compared with acute inpatient care, at probably lower costs. The number of days in hospital are the same; however, patients spend more of these days in the cheaper day facility. Another review studied the effect of crisis intervention at home, compared with in hospital.²⁶ Crisis intervention was not investigated in a pure form but integrated in a package of community care. The authors suggest that a well-organized team, using a crisis intervention ethos, may provide care that is more acceptable to patients and their families and less burdensome for the families than if the individual was admitted to standard hospital care. The authors conclude that crisis intervention at this moment is widely implemented without good evidence.

Discussion

Main findings

The goal of this review was to provide an evaluation of the effectiveness of organizational strategies aimed at the transfer of evidence to practice and at improving care for patients with severe mental illness. We also intended to provide recommendations for mental health physicians. We found 21 systematic reviews published from 2000 to 2007 and analyzed them according to an existing framework for organizational change strategies.¹⁷ We assessed the overall quality of the reviews as moderately good. Only 2 reviews allowed observational designs to be included; 13 reviews restricted their study to RCTs. Summarizing, our main findings were:

There is a fairly good body of evidence in the field of severe mental illness care that shows that organizational change leads to improved patient outcomes. Most evidence referred to changes in multidisciplinary teams, integrated care services, and changes in service setting. Specific organizational models have been particularly well elaborated and shown effective in terms of patient outcomes, such

as Assertive Community Treatment, Supported Employment, and Community Mental Health Teams.

Conversely, specific organizational change strategies, such as revision of professional roles, knowledge management (better use of information technology), and quality management (continuous quality improvement, performance measurement), have not been included in systematic reviews of RCTs. Therefore it is difficult to assess their impact.

The studies focused mostly on patient outcomes, a few also on cost-effectiveness. Consequently, measures of professional and organizational performance were hardly studied, so that the implementation processes remained a so-called black box. Therefore, it is difficult to provide guidance to health professionals, managers, and policy makers regarding how to implement a specific organizational model in their daily work environment.

Limitations

Although we searched systematically in various databases, relevant publications might have been missed. Our review contained only recent reviews of organizational interventions; earlier work has not been assessed. However, a screening of the older review literature gave us the same impression: health services research in severe mental illness has mainly focused on different models of case management, integrated care, or multidisciplinary care teams. Apart from older reviews, we also missed the nonreviewed literature on quality improvement strategies.

As for the analysis of included studies, we focused on the most important findings of each review, but inevitably this implies that other results were ignored. Also, we have no clear impression of the overlap in studies across the reviews. We observed that many studies and reviews did not report on professional or organization performance, although it was likely that these had changed if the intervention improved patient outcomes. This implies that our insight into the behavioural and organizational processes, which led to improved patient outcomes, remained very limited.

Implications for practice and research

In this review, we looked at existing research from a knowledge transfer or quality improvement perspective. Our first finding affirms the work of other authors,⁷ that organizational models directed at better multidisciplinary team work and integration

of care services can improve health outcomes for patients with severe mental illness. The strong attention given to these strategies in chronic mental illness is a logical one, as psychiatric rehabilitation by its nature is a multidisciplinary effort owing to the many competencies required for its implementation.³⁸ Our overview of the review literature stresses the importance for researchers, physicians, and mental health organizations to look at the benefits of evidence-based models such as ACT and Supported Employment for their specific settings and practices. Developers of clinical practice guidelines in different countries could stimulate the implementation of these interventions by incorporating recommendations of integrated care and effective models for collaboration into the guidelines. The strength and content of these recommendations shall depend on contextual factors, such as the quality of care as usual provided and the so-called benefit trap or financial disincentives to return to work in each particular country.³⁹

Another finding of this review is that other implementation strategies have a smaller body of good-quality evidence. This is in line with the results of an earlier review.¹⁶ The evaluation of strategies such as routine outcome measurement, financial incentives, the use of information technology, and patient involvement to get widespread implementation of effective treatment programs is only beginning in the severe mental illness setting.²³ There is a need for studies into these strategies, because they are initiated in all Western healthcare settings and much is expected of them by patients, physicians, managers, and policy makers.

Strategies to disseminate and implement a specific guideline, technology, or treatment program generally have mixed effects: sometimes they work, sometimes they do not. A better insight into the factors underlying this variation could help to generalize study findings to other settings and to develop more effective implementation interventions. Although we found good evidence of integrated care and multidisciplinary teams for better patient outcomes, information on professional and organizational performance as intermediate outcomes is hardly available. Many smaller qualitative studies on implementation issues have been published; however, most is of poor methodological quality. This lack of insight into the black box of implementation processes implies that managers and physicians wanting to spread effective care models for this patient group are left in the dark when it comes to selecting effective elements of care models and to picking strategies that can lead to successful implementation.

There is obviously a need for good quality implementation research in the area of severe mental illness. RCTs are the design of choice if one wants to make robust generalizable conclusions. Other approaches can also be informative to

local quality improvement projects and to physicians who are trying to bridge the gap between their daily practices and scientific evidence, provided they use multilevel measures of implementation efforts and outcomes.^{13,40} For good-quality improvement projects and research to happen, Fixen⁴¹ has proposed that healthcare providers and researchers create partnerships, set mutually beneficial implementation agendas, and create communities of practice, where the integration of innovations is facilitated. These communities of practice could function as self-sustaining learning communities. Of course, this proposal needs testing before wide-scale implementation can be recommended.

The National Implementing Evidence Based Practices Project is an example of a descriptive study that investigated the implementation of 5 psychosocial practices in the United States' chronic mental health settings.⁴¹ Supported Employment, ACT, and integrated dual-disorder treatments were 3 of these practices. In this study, the primary outcome was professional and organizational performance in terms of model fidelity. The study looked at differences of model fidelity among the evidence-based practices and at the degree of implementation over time within each evidence-based practice. In the near future, data on predictors of successful implementation, barriers, and facilitators will be spread by the research group, so that these experiences will become useful to others.

Conclusions

This review assessed the impact of organizational strategies to improve care for people with severe mental illness. From our work, we draw 2 conclusions:

- There is a fairly large body of evidence on the impact of several well-known organizational strategies used to improve care for people with severe mental illness. These strategies comprise multidisciplinary teams, integrated care, and changes in care setting. The impact of other applied strategies, such as quality or knowledge management strategies, have either not been subjected to systematic reviews or have not been evaluated in RCTs.
- There is a lack of insight in the black box of change processes and the impact of change on process and professional performance. This is hindering knowledge transfer to other settings of daily practice. The authors suggest a future implementation research agenda comprising both experimental and observational study designs, depending on the questions. The research agenda should focus on a wider range of improvement strategies and include multilevel measures, such as data about patient outcomes, the impact on professional performance (adherence to clinical guidelines), organizational

performance (waiting times, continuity of care), and the reach and long-term effects of the interventions.

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Part II

**The impact of the quality improvement
collaborative on improving mental health**

Chapter 4

Quality improvement in depression care in the Netherlands: the Depression Breakthrough Collaborative. A quality improvement report

G. Franx
J. Meeuwissen
H. Sinnema
J. Spijker
J. Huyser
M. Wensing
J. de Lange

Abstract

Background: Improving the healthcare for patients with depression is a priority health policy across the world. Roughly, two major problems can be identified in daily practice: (1) the content of care is often not completely consistent with recommendations in guidelines and (2) the organization of care is not always integrated and delivered by multidisciplinary teams.

Aim: To describe the content and preliminary results of a quality improvement project in primary care, aiming at improving the uptake of clinical depression guidelines in daily practice as well as the collaboration between different mental health professionals.

Method: A Depression Breakthrough Collaborative was initiated from December 2006 until March 2008. The activities included the development and implementation of a stepped care depression model, a care pathway with two levels of treatment intensity: a first step treatment level for patients with non-severe depression (brief or mild depressive symptoms) and a second step level for patients with severe depression. Twelve months data were measured by the teams in terms of one outcome and several process indicators. Qualitative data were gathered by the national project team with a semi-structured questionnaire amongst the local team coordinators.

Results: Thirteen multidisciplinary teams participated in the project. In total 101 health professionals were involved, and 536 patients were diagnosed. Overall 356 patients (66%) were considered non-severely depressed and 180 (34%) patients showed severe symptoms.

The mean percentage of non-severe patients treated according to the stepped care model was 78%, and 57% for the severely depressed patient group. The proportion of non-severely depressed patients receiving a first step treatment according to the stepped care model, improved during the project, this was not the case for the severely depressed patients. The teams were able to monitor depression symptoms to a reasonable extent during a period of 6 months. Within 3 months, 28% of monitored patients had recovered, meaning a Beck Depression Inventory (BDI) score of 10 and lower, and another 27% recovered between 3 and 6 months.

Conclusions and discussion: A stepped care approach seems acceptable and feasible in primary care, introducing different levels of care for different patient groups. Future implementation projects should pay special attention to the quality of care for severely depressed patients. Although the Depression Breakthrough Collaborative introduced new treatment concepts in primary and specialty care, the change capacity of the method remains unclear. Thorough data gathering is needed to judge the real value of these intensive improvement projects.

Introduction

Policies aiming to create an evidence-based mental healthcare system, offering appropriate care to patients and delivering better outcomes, have not been successful until now. According to the European Study of the Epidemiology of Mental Disorders (ESEMED) conducted in six western countries including the Netherlands, of all patients treated for an anxiety disorder or a depressive disorder, 57% were treated appropriately in secondary care and only 23% received the right treatment in primary care.¹

Major depressive disorder (MDD)² is a prevalent condition worldwide: 12 months prevalence of MDD ranges from 4 to 10% and a lifetime prevalence of 15 to 17%.³⁻⁶ In the Netherlands Mental Health Survey and Incidence Study (NEMESIS)^{6,7} a median duration of a new depressive episode of 3 months was found, 63% of those with a new episode had recovered within 6 months and 76% in 12 months. Almost 20% of those affected had not recovered in 24 months.⁸ Primary care is the key supplier of care to patients, because of the high prevalence of patients with depression or depressive feelings in primary care of around 21%.⁹ Despite policy incentives to strengthen the capacities of primary care, primary care physicians (PCPs) still refer more patients to a more expensive form of care in specialty care than to psychologists and social workers in primary care.^{9,10}

Two depression guidelines are actually available to Dutch physicians, recommending effective interventions for different subgroups of patients. The Multidisciplinary Guideline for Depressive Disorder, adopted in 2005 by a range of professional organizations in specialized mental health, and the depression guideline adopted by PCPs in 2003.^{11,12} Following depression guidelines can be of value to professionals as applying the effective interventions recommended in guidelines can lead to better outcomes for patients and to lower costs to society.¹³⁻¹⁸ Unfortunately, the uptake of the depression guideline recommendations in Dutch daily practice has been slow. A study looking into evidence-based depression care in 1999 concluded that previous depression guideline editions were considered to be too globally formulated, giving insufficient tools to physicians for decision support in daily practice.¹⁹⁻²² Other implementation barriers can be related to characteristics of the professionals and the patients, and environmental factors such as a lack of support from peers or superiors, insufficient staff or time, and poor collaboration between professionals.^{18,23}

The effective treatments proposed in the most recent depression guidelines, to be published in the Netherlands in the spring of 2009, range from less intensive interventions like psycho-education or self help intervention (individual or group courses), problem solving treatment (PST), and physical exercise (running therapy), to more intensive treatments such as cognitive behavioural therapy, pharmacotherapy and electroconvulsion therapy. Considering the heterogeneous course of MDD, the selection of the appropriate intervention and the organization of depression care needs to be built on careful timing and paced appropriately. Goals of treatment should be to avoid over-treatment in those with a favourable prognosis and to prevent the development of chronic symptoms in those depressed individuals with an unfavourable prognosis (under-treatment).

Overtreatment of minor and mild-major depressions is seen in primary care where antidepressant drugs are prescribed to 68% of the patients, regardless of the severity of depression.^{21,24} Also, antidepressants in many cases are prescribed over too long a period of time.²⁵ This is contrary to guideline recommendations and recent studies that advise less intensive treatments in mild cases because there is no additional effectiveness of antidepressant treatment over counseling alone.^{21,26-28} Less intensive treatment alternatives are insufficiently known and not made available or used by primary care professionals, despite the fact that they have been proven to be effective in recent randomized controlled trials in the Netherlands.²⁹

Undertreatment of patients with more severe symptoms, is caused by provider barriers including concerns about patient stigma, time pressures, inadequate knowledge about diagnostic criteria and treatment options, and a lack of psycho-social orientation. Also, poor recognition of depression by PCPs has been reported; in one study 33% of the cases were not diagnosed as depression or any other psychological disease. Moreover, patient-provider communication concerning pharmacotherapy can be improved.³⁰ Patient related causes include somatic presentation of depression by patients and resistance to a diagnosis of depression. Once pharmacotherapy is started, compliance is low. Up to 37% of patients stop taking medication too soon, after one or two prescriptions, whereas 15–45% stop psychotherapy treatment too early.^{19,25} System barriers include productivity pressures, limitations of mental health coverage, restrictions of specialists and treatments, the lack of a systematic method for detecting and managing depressed patients and inadequate continuity of care.²²

One of the methods to overcome barriers and improve the content and organization of care is the Breakthrough Series Collaborative, because of its ability to enhance the rate of diffusion of existing science into clinical practice, by using multi-institutional or multisite work groups.³¹⁻³⁵ In this article, we present the content and results of a part of a large Breakthrough Collaborative project targeting better outcomes for patients suffering from depression. The information presented is directed at the improvements for adult patients in primary care. The collaborative was initiated by the Netherlands Institute of Mental Health and Addiction (<http://www.trimbos.nl>), operated from December 2006 to April 2008, and was funded by a national health insurers fund, as part of the depression initiative program.³⁶

In the remainder of this article, we describe the problems in depression care targeted by the participants in this project, the improvement principles and goals, the improvement method, the methods used to collect and analyze the data, and the impact on key outcome and process indicators. In the discussion, the results are interpreted and compared to similar work, giving suggestions for future quality improvement projects.

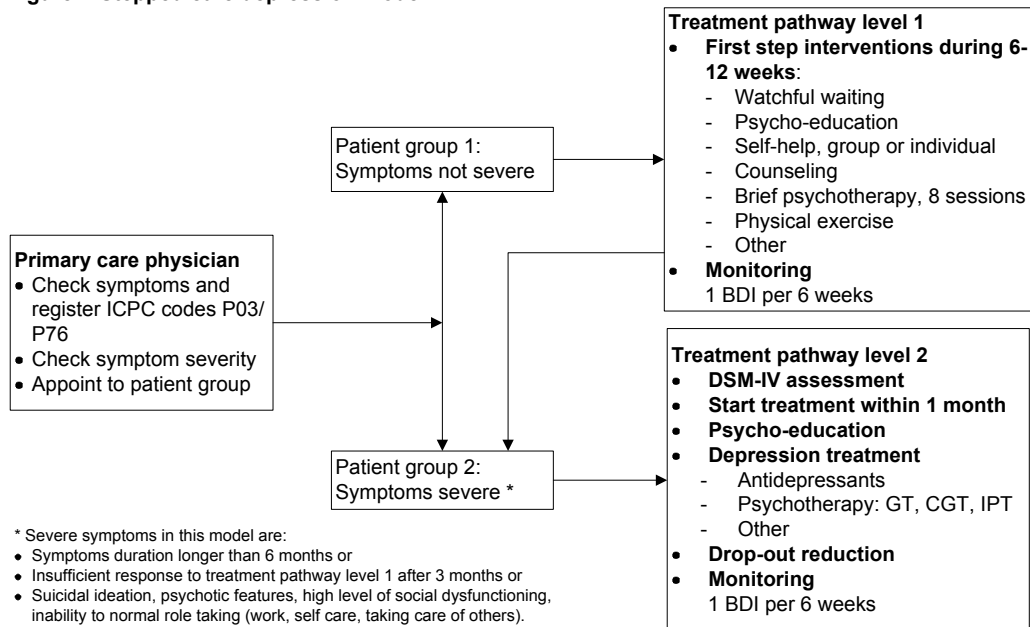
Methods

Improvement principles and goals

A national expert team of depression opinion leaders and project coordinators was set in place. They developed a project plan, containing improvement principles, goals and suggestions for improvement ideas. The overall improvement principle was the implementation of a stepped care approach. In a stepped care approach evidence-based treatment options are ranked by their degree of intensity, looking at the impact on the patient's life, the length of treatment, the setting (primary care or specialty care) and the costs, as well as combinations of these criteria.³⁷⁻³⁹ Patients start to step in at the appropriate intensity level, which matches their (severity) profile. Stepped care models have the potential to improve efficiency and effectiveness of depression care.⁴⁰⁻⁴² Also, the implementation of a stepped care model can lead to better collaboration and integration, involving all partners across primary and secondary care, and making them aware of their individual contributions to the shared approach.^{38,38,42,43}

A pragmatic stepped care model was developed (Figure 1), consisting of a depression care pathway with two levels of treatment intensity: a first step treatment level for patients with mild depressive symptoms and a second step treatment level for patients with severe depressive symptoms.

Figure 1. Stepped care depression model



The stepped care model was based on previous projects in Dutch mental healthcare and on the (inter)national literature.^{37,38} Professionals applying all the elements of the stepped care depression model, needed to implement the following changes in their practices:

1. **Stepped diagnostics.** Depressive episodes were diagnosed as usual, with PCPs using the ICPC coding system for new cases. Differentiation between patients with non-severe depressive symptoms (patient group 1 in Figure 1) and patients with severe symptoms (patient group 2 in Figure 1) had to be made, based on a set of severity criteria (see text at the bottom of Figure 1). For severely depressed patients a DSM-IV assessment was indicated.
2. **Stepped treatment.** Implementation of a treatment pathway with two treatment levels: a first step level consisting of interventions for first, mild depressive episodes with a duration up to 3 months (treatment pathway level 1 in Figure 1) and a second step level mainly consisting of antidepressant medication and effective psychotherapeutic interventions (treatment pathway level 2 in Figure 1).

3. Monitoring and evaluation of the treatment plan. The course of symptoms and treatment progress were to be monitored in both pathways using the Beck Depression Inventory (BDI).

Derived from this stepped care model a set of SMART goals was formulated; goals that are specific, measurable, attractive, realistic and timely (Box 1).

Box 1. The SMART goals of the Depression Breakthrough Collaborative

1. Within 6 months of treatment, 80% of all new patients have a score of 10 or lower on the Beck Depression Inventory (BDI). Obligatory goal.
2. 80% of systematic follow-up visits is according to planning, meaning 1 visit every 6 weeks until the scores on the BDI is 10 or lower. Obligatory goal.
3. Less than 10% of patients with non-severe symptoms receive antidepressants or psychotherapy as a first step treatment.
4. All patients with severe depressive symptoms start treatment within 1 month after diagnosis.
5. Less than 20% of all patients with severe symptoms, treated with antidepressants, have dropped out of treatment within the first 3 months.

These two instruments, the Stepped Care Depression Model and the set of SMART goals, provided the improvement teams with guidance for their improvement work. The teams made a selection of goals, developed additional local goals if they wished and implemented changes.

Breakthrough method

The Breakthrough method, developed by Berwick and colleagues at the Institute for Healthcare Improvement in Boston (<http://www.ihl.org>), was used as the model for change during the collaborative.⁴⁴ This method was chosen for various reasons. Firstly, Breakthrough Collaboratives are attractive projects, creating learning opportunities for professionals, offering them knowledge, a model for change and permitting them to spend time on testing changes and experimenting with new behaviour. Breakthrough Collaboratives can be especially useful for microsystem improvements, within small units of care delivery.⁴⁵ Secondly, these projects have become very popular over the last few years within the Dutch Ministry of Health, Welfare and Sport which has funded many collaboratives in different healthcare settings. This positive reputation is only partly based on research literature. A recently published systematic review of quality improvement collaboratives showed that the underlying evidence is positive but limited, with modest effects on outcomes at best.³⁵ In mental healthcare, the Breakthrough method had rarely been applied and evaluated.

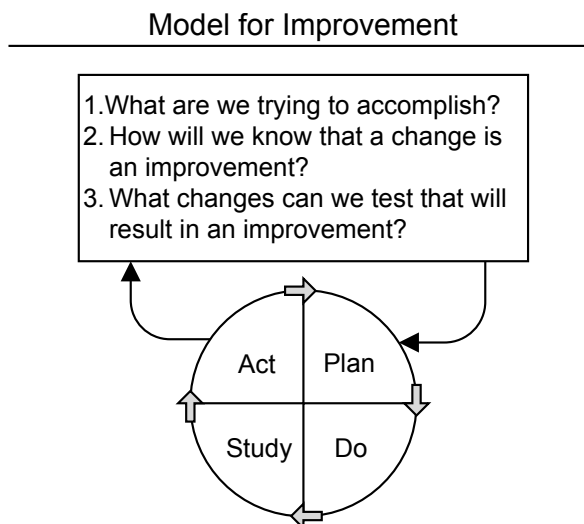
Breakthrough Collaboratives can be considered as a multifaceted implementation strategy. Central characteristics of all Breakthrough Collaboratives are: the use of guidelines, local multidisciplinary improvement teams consisting of professionals and a local team coordinator, a national expert team consisting of depression opinion leaders and national project coordinators, data collection and continuous feedback loops.^{34,46} In the Depression Breakthrough Collaborative a specific mix of these improvement strategies was offered to the participating teams (Box 2).

Box 2. Improvement strategies offered during the Depression Breakthrough Collaborative

- A network of multidisciplinary teams;
- An expert team, teaching the Stepped Care Model;
- SMART goal setting, a set of indicators to monitor results and an Excel worksheet;
- A training for local team coordinators on the Breakthrough method and data collection;
- Four conference days for all improvement teams for exchange and learning;
- One conference day for local team coordinators for more intensive exchange with the expert team;
- Five meetings between local team coordinators, with the expert team present;
- Team visits of experts and national project coordinators;
- Telephone contact between local and national coordinators;
- Written feedback on improvement reports and data charts;
- A virtual network environment for exchange of best-practices, a Toolkit of instruments and treatment protocols, online discussions and links to relevant sites;
- A two-day training on Problem Solving Treatment for professionals;
- A workshop workflow improvement.

A central feature of the Breakthrough Collaboratives is continuous feedback loops according to the Nolan model (Figure 2). The model consists of two elements: three questions to focus the improvement work and a PLAN-DO-STUDY-ACT (PDSA) cycle.

This model, originally developed by Langley and popularized by Nolan, provides an overarching framework for testing change ideas that are expected to make progressively more complex changes along an improvement ramp. Instead of focusing on changing the behaviour of individual providers, the focus is on gradually changing organizations into high performing (micro)systems of care.⁴⁵⁻⁴⁷

Figure 2. The Nolan model for improvement

Data collection and analysis

Quantitative improvement data were collected by the professionals of the Breakthrough Collaborative's teams. Measurements were derived from process and outcome indicators, developed by the national expert team to measure goal attainment on each of the SMART goals. Data were entered and processed in Excel by the local coordinators, who had received training to do so. Periodically, the local data were fed back to the teams for discussions and adaptation of improvement plans. Aggregation and analysis of all data was done by the expert team and data managers of the Trimbos Institute. To maintain privacy, patient data were made anonymous before being sent to be processed on a national level. In order to monitor the change over time, the team performances of process indicators were analyzed as repeated measures of threemonthly data. Teams that collected data throughout the improvement year had four terms of 3 months to demonstrate change. Other teams, starting to collect data only later, may have produced just three sets of data. In addition to the improvement data, qualitative data were collected from the local team coordinators, in the last stage of the project. For this purpose, a questionnaire was used with items on: characteristics of the team, results according to the coordinator, strengths and weaknesses of the improvement method, influencing factors, spread and consolidation of results. Seven coordinators, reporting on 10 out of 13 teams, returned the completed questionnaire.

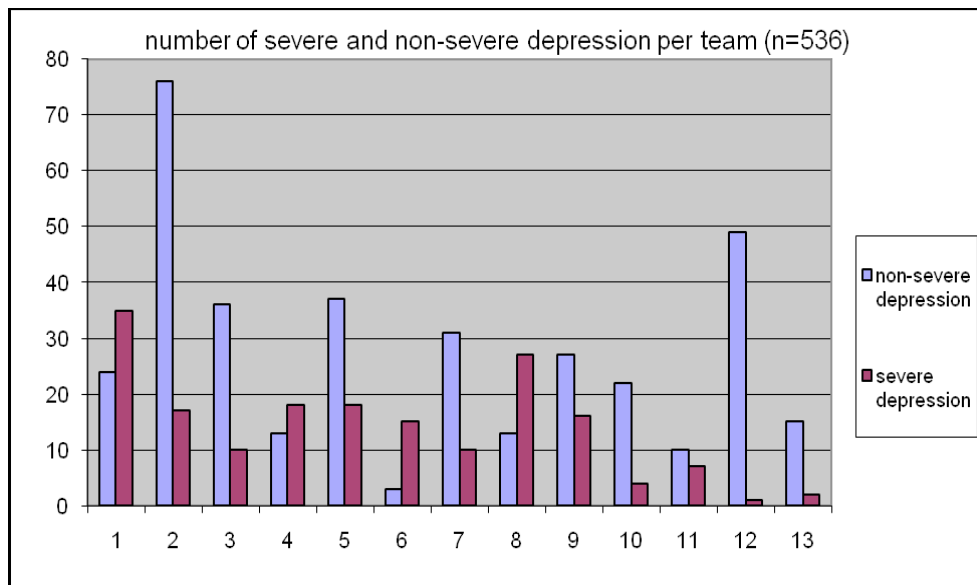
Results

A total of 13 teams participated in the project, consisting of 101 professionals and 15 managers or staff. The teams all had a multidisciplinary character, including at least one or more PCPs, and a psychiatrist or a psychotherapist working in a specialized Mental Health Organization. In total, 39 PCPs were involved, 14 primary care psychologists, 16 social workers, 11 specialised mental health nurses, 8 physiotherapists, 6 psychologists or psychotherapists and 7 psychiatrists. The smallest team consisted of 6 persons, the largest had 15 members. The teams all had a local team coordinator, responsible for supporting the professionals, managing communications within the national network, and pushing the local improvement process forward. Most of the team coordinators were staff employees in primary care support organizations called Regional Support Structures (Regionale Ondersteuning Structuur, ROS).

Five hundred and forty-three adult patients were registered by the 13 teams during the improvement year. The inclusion ranged from 17 patients in the team with the lowest patient number and 93 patients in the team with the highest. All teams selected their goals for improvement (see Box 1). SMART goals 1 and 2 were obligatory for all teams, goals 3 and 4 were selected by 10 teams, goal 5 was selected by four teams.

Diagnostic skills

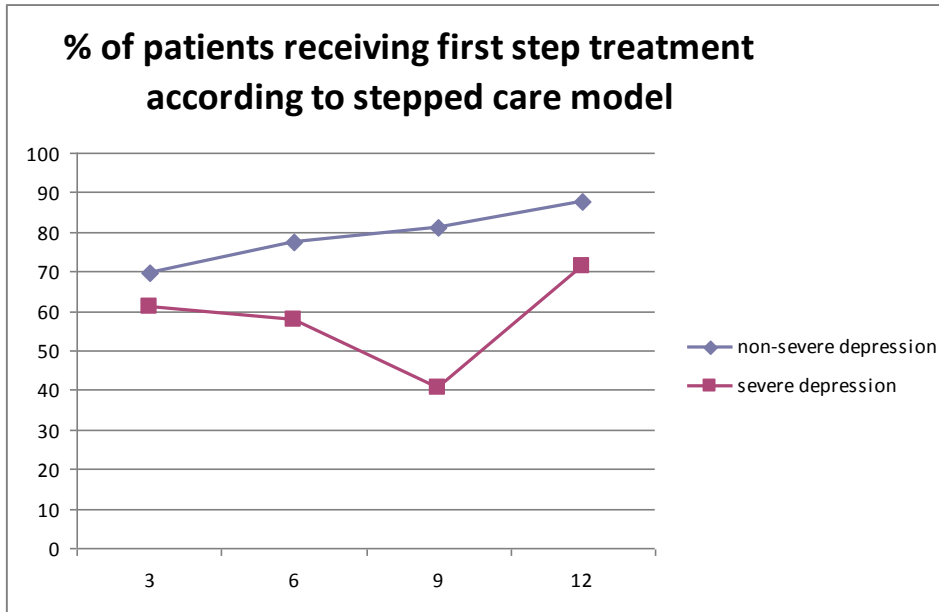
PCPs were asked to differentiate between severely depressed and non-severely depressed patients. The label severe depression was considered appropriate if the patient previously had depressive symptoms lasting 6 months or longer, and/or showed an insufficient response to a former treatment and/or reported suicidal ideation, psychotic features or a high level of social malfunctioning. Out of the 543 patients registered during the project, 536 patients were diagnosed to have either non-severe or severe depressive symptoms (Figure 3).

Figure 3. Number of severe and non-severe depression per team

Overall 356 patients (66%) were considered non-severely depressed and 180 (34%) showed severe symptoms according to the primary care physicians. Figure 3 also shows a large variability between the teams in the proportion of patients in each category, with the proportion of severely depressed patients ranging from 2% (team 12) to 83% (team 6). The team with the largest patient group (n=93) registered 76 non-severe depressed patients (82%) and 17 severe patients (18%).

Stepped care approach

The overall goal of the improvement teams was the implementation of a stepped care model, a depression care pathway with two levels of treatment intensity: a first step treatment level for patients with non-severe depressive symptoms and a second step level for patients with severe depressive symptoms (Figure 4).

Figure 4. Percentage of patients receiving first step treatment according to the stepped care model

The teams registered treatment data of a total of 514 patients, 346 (67%) patients with a non-severe depression and 168 (33%) patients with a severe depression. The overall mean percentage of the non-severe patient group receiving a first step treatment according to the stepped care model was 78%, ranging from 53% in the worst performing team to 100% in three best performing teams. The mean percentage of the severely depressed patient group was 57%, ranging from 25 to 100% between the teams. The patient groups were extremely small in certain teams, thus accounting for these wide ranges. Although the scores in the non-severe group did not reach the level of 90%, there was a positive trend towards this target. This is in line with the reports of the local team coordinators, indicating that PCPs did learn to offer patients with few or mild symptoms a brief or first step intervention instead of antidepressant treatment, once these first step interventions were made available in primary care.

According to the stepped care model, all patients with severe symptoms should have received psychotherapy or antidepressant treatment within 1 month, either in primary or in specialty care. Unfortunately, the improvement teams were not able to move good quality treatment for severely depressed patients close to the targeted 100%. In total 72 (43%) severely depressed patients did not receive

antidepressant treatment or psychotherapy within 1 month or were offered treatment options of a too low intensity. This number includes 23 patients who were referred to specialty care within 1 month, where they might have received proper treatment in time. The team coordinators indicated improvement in terms of a growing consciousness amongst professionals of the needs of severely depressed patients, better referral procedures and more attention to psychotherapy as an alternative for antidepressants.

Monitoring of depressive symptoms

The professionals were asked to monitor depressive symptoms with the BDI until recovery, defined as a BDI-score of 10 or lower.

Table 1. Depression symptoms at 6 months

	Non-severely depressed patients (N=91)	Severely depressed patients (N=50)
Improved/recovered	75 (83%) / 27 (30%)	44 (88%) / 12 (24%)
Stable	3 (3%)	2 (4%)
Worse	13 (14%)	4 (8%)

Table 1 shows that the teams succeeded in following around 70% of their patients during a period of 6 months. Repeated BDI monitoring by itself, was conceived to be very difficult to organize, especially since integration of the BDI measurements in existing ICT systems was lacking.

During the project, 477 patients received BDI monitoring at baseline, within 2 weeks after diagnosis. Four hundred and seventy-four patients (99%) scored more than 10, of whom 270 patients (57%) received a follow-up measurement within 3 months. Of this group 76 persons (28%) had recovered according to the BDI score of 10 or lower. Of the 194 non-recovered patients, 103 patients had another follow-up measurement at 6 months (53%). Of this group, another 28 patients (27%) had recovered, 75 patients (73%) had a BDI score higher than 10.

Overall, 91 non-severely depressed and 50 severely depressed patients had BDI monitoring at baseline and within 3 to 6 months. Seventy five (83%) non-severely depressed patients improved during that period of whom 27 (30% of the total group of 91 patients) recovered. Thirteen non-severely depressed patients (14%) worsened with increased scores on the BDI and 3 (3%) remained stable. Of the severely depressed group, 44 (88%) patients improved of whom 12 (24% of the total group of 50 patients) recovered, 2 (4%) remained stable and 4 (8%) patients worsened.

Collaboration and integration

In addition to the data, the comments of the team coordinators on the project were asked in a questionnaire. All team coordinators indicated that the project had a positive impact on collaboration within primary care. Professionals grew to know each other during the project, and as a consequence developed a mutual language on depression care, a better understanding of the content and added value of each of the different competencies and a more reliable collaborative relationship. This was a good basis for a regionally shared approach and responsibility in depression care. Teams also reported better collaboration in daily practice. Collaboration improved in terms of easier and faster consultation of a psychiatrist or psychologist when the patient's condition was unclear, better access to specialty care for primary care patients, and primary care physicians staying better informed after referral. Improved collaboration was restricted to the professionals in the improvement teams, and did not really spread beyond this group.

Knowledge and guidelines

Another effect mentioned by the coordinators was improved knowledge of depression amongst the professionals and improved competence in terms of diagnosing and treating depressive symptoms. Some teams intensively discussed the guidelines at the start of the project, whereas other teams considered the Depression Breakthrough Collaborative as their knowledge base.

Strengths and weaknesses of the breakthrough method

The top-down goal setting appeared to be a success factor in primary care, PCPs being in favour of practical tools, standards and clear instructions. Another successful element was the outcome monitoring using the BDI. Although hard to implement, it shifted the focus of professionals from their own clinical judgements to more objective results that could be shared with others. The Toolkit, describing the content of interventions in detail (number of sessions needed, topics to inform the patient about) served as a fidelity tool for correct development and implementation and as a basis for team discussions.

Weaknesses of the project, experienced by the team coordinators, were related to a mismatch between the project's design and the primary care working culture. PDSA cycles were hard to apply and did not fit into the existing culture of primary care professionals, who were not used to discussing care processes and reflecting on results. Also the website, the main source of information and communication,

was of no help to individual professionals, who were not used to virtual project environments. Other negative aspects of the project were the obligatory reports that needed to be sent to the national expert team and the changing planning of conference days and other happenings.

Influencing factors

Factors facilitating the project were: the presence of a strong local team coordinator, enthusiastic team members (particularly the primary care physician as the key player in the team), financial support for time spent on the project from an insurance company, and the embedment of the project within a broader quality improvement policy of the Mental Health Organization or primary care health centre. Most of the local team coordinators were employed by the so-called Regional Support Structures, rather new organizations in Dutch primary care, created by the Ministry of Health to help professionals improve the quality of care. Some of the healthcare insurance companies reimbursed PCPs for the time spent on the project and paid for the team coordinator to support the team.

Factors hindering the project were: a lack of interest by the management, a lack of dedicated time for participating professionals, a lack of patients with new depressive symptoms in primary care during the project, and the short length of the project's duration. Most teams felt the time frame of the project was too short for real change, especially in smaller teams, with only one PCP. Focusing on a longer change period and continuing improvement activities after the project's formal ending, was the way most teams dealt with these frustrations.

Discussion

Thirteen multidisciplinary teams participated in the quality improvement project. In total 101 health professionals were involved, and 536 patients were diagnosed. Overall 356 patients (66%) were considered nonseverely depressed and 180 patients (34%) showed severe symptoms. The mean percentage of non-severe patients treated according to the model was 78%, and 57% for the severely depressed patient group. Compared to numbers mentioned in the literature of 23% of patients with anxiety and depression receiving the right treatment in primary care, this could be considered as relatively high.¹ The proportion of non-severely depressed patients receiving the right first step treatment slightly improved during the project, but this was not the case for the severely depressed patients. The teams were able to monitor depression symptoms to a reasonable extent during a period of 6 months. Within 3 months, 28% of monitored patients had recovered,

meaning a BDI score of 10 and lower, and another 27% recovered between 3 and 6 months. Collaboration between primary care and specialty care and within primary care improved but did not spread beyond the teams. The team coordinators indicated that a breakthrough, although still fragile, was being achieved in terms of professionals improving their knowledge of depression and depression guidelines, learning to use new and less intensive treatments in mild cases instead of antidepressant treatment and improving collaboration within and between the settings, so that access to specialty care for severely depressed primary care patients improved.

In total, 39 PCPs identified 536 new cases, a mean of 14 patients per PCP. This is lower than expected, considering the national incidence rate of 24 patients in a primary care practice of 2300 subscribed patients, suggesting that the PCP did not identify all patients with depressive symptoms or did not include all patients who were identified.²⁴ The diagnostic performances suggest that the project served as a platform for PCPs to change their behaviour and start to differentiate between severe and non-severe depressive symptoms. Whether this was done in a reliable way, reflecting the true proportions, is not clear. The large variability between the PCPs suggests that, apart from epidemiological differences, several professional related factors could have influenced the diagnosis. For instance, the sensitivity of some of the PCPs to picking up on mild or early depressive symptoms, and their ability to discuss their findings with the patient, could have been more or less developed. Also, a doctor feeling uncomfortable with a particular label and the corresponding treatment level could have adapted the treatment criteria to his own perception.

The monitoring indicators showed that the teams were able to monitor depression symptoms to a reasonable extent during the first 6 months of the treatment. This can be considered as a rather big improvement, considering the lack of routine, infrastructure and ICT support. When patients had stopped visiting the practices, possibly because of diminishing symptoms, continuous monitoring proved to be problematic.

The data suggest an improvement ramp pushing the quality of care for patients with non-severe depression forward. This is in line with data from a previous Depression Breakthrough Collaborative that served as a pilot project. In that project, data of precollaborative treatment were compared to the improvement data, showing a very sudden drop in unnecessary antidepressant prescriptions for non-severely depressed patients from 61 to 11%, during the very first weeks of the

collaborative.⁴⁸ In the current project, no prepost trend can be shown, so nothing can be said about the actual change introduced during the collaborative.

The recovery rates are in line with the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study, a naturalistic study showing that only one-third of patients achieves remission with initial treatment and that remission rates decline with successive treatment failures.⁴⁹ The results of our project, although not based on research data, confirm the suggestion derived from the scientific research into collaboratives, showing modest effects on outcomes at best.³⁵

Our project also builds on reports of other improvement work in depression care that show a positive impact on the quality of care and on patient outcomes. In the American version of the Depression Breakthrough Collaborative, the chronic care model was implemented, also based on the assumption that depression care is fragmented and that there is a gap between guideline recommendations and actual care.⁵⁰ The change concepts considered to be essential in the American project turned out to be establishing and maintaining a patient register, care coordination, diagnostic assessment and pro-active follow-up. Factors facilitating that project were: the support of organizational leadership showing the essential role of the top management, and a small practice size.^{50,51} Some of the essential change concepts show overlap with the positive experiences in our project concerning diagnostic assessment and pro-active follow-up. Still, the stepped care approach, introducing different patient categories and corresponding treatment levels, with much attention to other than pharmacological approaches, can be considered distinctive and of relevance to international readership.

There are several limitations to this project. Firstly, registration of improvement indicators was hampered in various ways and the quality of data gathering during the project varied. Although some teams managed to collect most data for their patients, the overall database showed many missing values. A second limitation was the poor insight in the actual implementation of the interventions. The data are based on reports of the professionals; it is unclear whether patients actually received care according to the protocol or guidelines. Thirdly, the twelve months duration of the project; this may have been too short to measure any impact on the care processes.

It is clear that the information derived from these data does not pretend to serve as new, generalizable knowledge on causal mechanisms in healthcare, but as a mirror for reflection and discussion on processes of change in depression care.

Quality improvement is a growing topic of interest to many managers and professionals in this sector, also stimulated by policy makers and insurance companies. Although changing depression care is on the agenda of many, the question of how to go about it is still unanswered. The data presented here may help to find some of the answers. Parallel to these quality improvement data, a quasi-experimental trial was conducted, comprising rigorous quantitative and qualitative process and outcome data-gathering on the patient, the professional and the team level, and a comparison between the collaborative study population and a care as usual group. The results of that study will be published from 2010 onwards.

Conclusions

A stepped care approach seems acceptable and feasible in primary care, introducing different levels of care for different patient groups. Although the Depression Breakthrough Collaborative introduced new treatment concepts in primary and specialty care, the change capacity of the method remains unclear. Thorough data gathering is needed to judge the real value of this intensive improvement project.

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Chapter 5

Implementing a stepped care approach in primary care: results of a qualitative study

G. Franx
M. Oud
J. de Lange
M. Wensing
R. Grol

Abstract

Background: Since 2004, ‘stepped care models’ have been adopted in several international evidence-based clinical guidelines to guide clinicians in the organization of depression care. To enhance the adoption of this new treatment approach, a Quality Improvement Collaborative (QIC) was initiated in the Netherlands.

Methods: Alongside the QIC, an intervention study using a controlled before-and-after design was performed. Part of the study was a process evaluation, utilizing semi-structured group interviews, to provide insight into the perceptions of the participating clinicians on the implementation of stepped care for depression into their daily routines. Participants were primary care physicians, specialist physicians, and other healthcare staff from eight regions in the Netherlands. Analysis was supported by the Normalisation Process Theory (NPT).

Results: The introduction of a stepped care model for depression to primary care teams within the context of a depression QIC was generally well received by participating physicians. All three elements of the proposed stepped care model (patient differentiation, stepped care treatment, and outcome monitoring), were translated and introduced locally. Physicians reported changes in terms of learning how to differentiate between patient groups and different levels of care, changing antidepressant prescribing routines as a consequence of having a broader treatment package to offer to their patients, and better working relationships with patients and colleagues. A complex range of factors influenced the implementation process. Facilitating factors were the stepped care model itself, the structured team meetings (part of the QIC method), and the positive reaction from patients to stepped care. The differing views of depression and depression care within multidisciplinary health teams, lack of resources, and poor information systems hindered the rapid introduction of the stepped care model. The NPT constructs ‘coherence’ and ‘cognitive participation’ appeared to be crucial drivers in the initial stage of the process.

Conclusions: Stepped care for depression is received positively in primary care. While it is difficult for the implementation of a full stepped care approach to occur within a short time frame, physicians can make progress towards achieving a stepped care approach, particularly within the context of a QIC. Creating a shared understanding within multidisciplinary teams of what constitutes depression, reaching a consensus about the content of depression care, and the division of tasks are important when addressing the implementation process.

Background

Since 2004, ‘stepped care models’ have been adopted in several international evidence-based clinical guidelines on depression globally.¹⁻³ More recently, stepped care approaches for depression have been found to be feasible in primary care for diverse patient populations. Stepped care approaches can both generate well-being and reduce healthcare costs.⁴⁻¹⁰

The key idea underpinning stepped depression care is that patients with sub-threshold and mild depression are offered interventions of low intensity, such as psycho-education, self help, counseling, physical exercise, or problem-solving treatment. Watchful waiting is also valid in this phase. For a patient who does not successfully respond to these approaches, or for patients whose symptoms are more severe, more intensive treatment options are appropriate. Antidepressants, psychotherapy, or electroconvulsion therapy (ECT), combined with case management and self-management strategies are preferred options for severe and chronic cases. One key aspect of the stepped care approach is the monitoring of patient progress in order to recognize when it is necessary to step up to a more intensive treatment.^{5,6,11} Despite the positive recommendations in guidelines, the embedding of stepped depression care in normal daily primary care asks for a paradigm shift that has not been fully achieved. This is illustrated by previous research, which found that antidepressant prescription rates remained high and unrelated to symptom severity, and that cost-effective alternatives for patients with mild depression are still underused.¹²⁻¹⁴

Historically, the Netherlands has had a strongly developed primary care system, consisting of general medicine provided by primary care physicians (PCPs), paramedical and pharmaceutical care, nursing and supportive care, as well as non-specialized mental and social healthcare. Preventive and health educational activities are linked to these forms of care. The PCP is the central provider for all medical care, including mental healthcare, and the gatekeeper to specialist care. Each fulltime PCP has a caseload of around 2,400 patients and is paid on a fixed annual fee basis per patient subscribed to the practice. Over the last decade, different measures have been launched to strengthen primary mental healthcare, such as increasing the numbers of, and capacity of social workers, and the introduction of specialized mental health nurses in about 25% of the primary care practices.^{15,16} Yearly, between 11% to 13% of the adult population is registered by the PCP with a psychological problem or diagnosis.¹⁶ Of those presenting to the PCP with a psychological problem, 3% to 4% show depressive symptoms. This

figure has remained stable in the Netherlands between 2002 and 2008. The majority of patients with depression are treated by the PCP; less than 8% of cases are referred to a social worker, mental health nurse, primary care psychologist, or to a specialist. PCPs treat their patients mostly during a number of brief consultations of less than twenty minutes, and a large proportion of patients (up to 70% in 2008) are treated with antidepressant medication.¹⁶

It has been recognized, that successful implementation of complex treatment approaches in healthcare, such as stepped care for depression, depends on a complex interplay of factors and overcoming several barriers to implementation. There have been a wealth of theories and models developed to explain the factors affecting implementation of innovations. The explanatory models can be categorized in the following manner: theories focusing on characteristics of individual professionals, theories on social influence or interpersonal factors, and theories on system characteristics such as organizational and economic factors.^{17,18} Barriers and facilitators for change can be identified on six levels: the innovation itself, the individual professional, the patient, the social context, the organizational context, and the economic and political context.¹⁸ A recently developed theory on implementation of innovations is the Normalization Process Theory (NPT), developed by May and Finch (2009), which offers a conceptual map for the evaluation of complex interventions.¹⁹ According to NPT, there are four mechanisms that drive change: coherence, cognitive participation, collective action, and reflexive monitoring¹⁹ (<http://normalizationprocess.co.uk/whatfor.aspx>). The care system will only function seamlessly if all four constructs operate concurrently and are attended to.²⁰ More recently, Gunn et al. adapted the NPT theory for use in depression care.²⁰

In this study we present the findings of a qualitative process evaluation, within a controlled study looking at the effectiveness of a depression Quality Improvement Collaborative (QIC). The findings of the controlled intervention study are presented in another paper submitted for publication. Previously published uncontrolled observational data of the QIC demonstrated an improvement of stepped care treatment within the teams participating in the QIC.²¹ The qualitative process analysis presented here aims to add to the quantitative findings as it documents the way in which the intervention was received and implemented by physicians, and identifies the factors associated with reception and implementation. Furthermore, by relating the findings to the NPT constructs, we were able to provide another layer to the findings. The constructs provide us with sensitizing concepts that could lead to a better understanding of the findings of this process

evaluation, as well as guide additional recommendations on how to conduct implementation projects in depression care.

Methods

Study design

Alongside the QIC, an intervention study using a controlled before-and-after design was performed. The overall study protocol comprised an effectiveness study, a process evaluation, and a cost-effectiveness evaluation. The intervention group consisted of PCPs participating in the QIC, the parallel control group, providing care as usual, consisted of a selection of PCPs from practices participating in the Dutch National Information Network of General Practice (LINH). This database holds longitudinal and nationally representative data on morbidity, prescribing and referrals of about 350,000 individuals. Data collection in both groups covered a three-year period: from the beginning of 2006 (the year prior to the QIC) until the end of 2008 (the year after the QICs ending). The primary outcome of the study was a change of antidepressant prescription rates to patients with a new diagnosis of depression in both groups. The qualitative process evaluation was directed at generating insight into the perceptions of the participating physicians in the intervention group on the implementation of stepped care for depression into their daily routines. Data collection was obtained via group interviews, which were held between December 2006 and March 2008.

Ethics approval for the entire study protocol was provided by the METIGG, a national ethics committee in mental healthcare in the Netherlands.

Setting and participants

Participants for the study were selected from thirteen multidisciplinary primary care teams participating in the depression QIC. These thirteen QIC teams had been recruited throughout the country by a national QIC project team on the basis of the following criteria: the team had a multidisciplinary structure, there was sufficient motivation and time for all members to participate, and a local team coordinator was available. Although team members sometimes had worked together in another context, most of them had not worked together as a depression team prior to the QIC. At the start of the QIC, all teams were asked to participate in the intervention study and the process evaluation, alongside their implementation work. Five teams did not wish to spend extra time on research activities and declined. Eight teams consented, consisting of PCPs, primary care psychologists,

social workers, mental health nurses, physiotherapists, consulting psychiatrists and psychotherapists, local managers, and team coordinators.

Intervention

The intervention consisted of a QIC aimed at the implementation of a stepped care approach for depression in a multidisciplinary, primary care setting. The QIC was designed as a 'Breakthrough' QIC.^{22,23} Three stepped care improvement principles, designed by the QIC's national expert team and derived from the national clinical guidelines, were intended to guide the implementation processes²⁰: patient differentiation, stepped treatment, and monitoring of treatment outcomes (Box 1).

Box 1. Stepped care principles of the Depression Quality Improvement Collaborative

1. Patient differentiation. The primary care physician diagnoses the patient, using the International Classification of Primary Care (ICPC) diagnosis P03 or P76 (Lamberts & Wood, 1990). The physician classifies the depression to be either severe or non-severe, according to the criteria of the stepped care model.
2. Stepped treatment. Non-severely depressed patients are offered an intervention of low intensity as a first line treatment, such as: watchful waiting, psycho-education, self-help, counseling, brief psychotherapy, physical exercise. After six to twelve weeks, when response is insufficient, physicians step up to a next level of intensity, antidepressant medication or cognitive behavioural psychotherapy.
3. Outcome monitoring. The Beck Depression Inventory (BDI), a 21-item self-report inventory, for measuring the severity of depression, is used to monitor symptom severity. A score of 0 to 9 indicates a normal mood, patients with higher scores are monitored every six weeks until the score has returned to normal. Stepping up to higher intensity level treatments is considered in case of insufficient response.

A local team coordinator supported the team with the aim of structuring the implementation process. Local team coordinators received brief training from the QIC national expert team about the use of Plan-Do-Study-Act (PDSA) cycles and about the monitoring of stepped care and depression indicators in a Microsoft Office Excel work sheet. Both elements, PDSA-cycles and monitoring, are crucial elements of QICs and help to move the implementation process forward.²⁴ To assist the physicians in applying the stepped care principles into daily clinical practice, the QIC national expert team offered four national conference days for learning, seven meetings for quality improvement project managers, regular telephone contact, as well as working visits to all sites. The physicians independently set up bi-monthly local team meetings for discussions about the translation of the principles into their work settings, and to exchange experiences, progress, and steps for further improvement. In addition, all individual physicians had access to workshop sessions and to online materials, such as a depression toolkit describing evidence-based interventions. Funding for these support

activities primarily came from external bodies; however, the primary care teams also independently co-financed a small portion of the project.²¹

Data collection

Data collection consisted of eight semi-structured group interviews with duration of 60 to 75 minutes with all participating multidisciplinary improvement teams. The interviews took place during the last half of the 15 months of the QIC. Group interviews with the multidisciplinary teams were appropriate, given that there is limited knowledge about applying stepped care principles for depression from the professional perspective, particularly with healthcare professionals coming from different backgrounds. The interviews therefore were expected to provide additional exploratory data that can enrich quantitative findings. The interviews were conducted by the researchers (GF, MO), following a topic list with questions related to the stepped care changes made in clinical practice, the mechanisms and factors that influenced the change processes, and the impact of the changes on the care delivered as perceived by the respondents. The researchers had no relationship with the respondents prior to the interviews, but were familiar with the QIC work from holding former positions in other projects. The interviews were audiotaped with consent of the participants and transcribed verbatim.

Analysis

The interview transcripts were analyzed independently by two coders (combinations of GF, MO, and JdL). The perspective of JdL, a qualitative research expert and the national project manager of the depression QIC, ensured that the data were interpreted and understood from different perspectives. To order the data, thematic coding was used with the help of MaxQda 2007, qualitative analysis software <http://www.maxqda.com/>. Samples of the coded fragments were compared and settled by consensus. As a result, a coding tree was built around the following key themes; the experiences with the QIC method, the changes made in the primary care practices, the factors influencing the change processes and the results of the change processes in terms of outcomes for patients and efficiency of care. Within these themes, different levels of codes were constructed. For example, within the theme of influencing factors, the code 'culture' was assigned, referring to the views within the teams on depression care. Within this code, sub-codes were drawn from the material, such as 'pro-activity,' 'openness and trust,' and 'views on depression,' the latter referring to transcripts in which respondents talked about how their personal concept of depression played a role

in introducing stepped care within the team. Finally, the material was ordered for reporting around the research questions about how the stepped care principles were applied and experienced, and which factors influenced this process. Because our goal was to capture groups' experiences, the findings are reported as the teams' perspectives on each of the stepped care principles. The viewpoints of specific professional groups were only described when relevant.

The interpretations were discussed within the project team. The preliminary results were discussed with the respondents, approximately one year after the QIC's termination (member check). A researcher (MO) interviewed a member of each of the improvement teams by telephone. During these telephone interviews, team representatives were asked whether they agreed with the results from the qualitative interviews, if the analysis had missing information that was important for enriching the data, and if the results were applicable for their team. The interviews confirmed the results.

After this analysis, we used Gunn's NPT framework on depression²⁰ to help understand and further interpret the qualitative findings. Because this framework is a 'conceptual framework for implementing best practice depression care that is informed by NPT' we considered the additional use of the framework of interest to generate a more in-depth understanding of the stepped care implementation process.²⁰ Gunn's depression framework is built on the four NPT mechanisms that drive change: coherence, cognitive participation, collective action, reflexive monitoring¹⁷ (<http://normalizationprocess.org>). The mechanism of coherence refers to the way in which depression care is conceptualized by healthcare professionals, and implies that all actors should have a shared understanding of what constitutes depression and depression work. This shared understanding is necessary for adoption of an effective stepped care model for depression in routine care. Cognitive participation outlines how professionals engage in depression care, and implies an agreement that depression care is part of routine care and that there is a shared set of diagnostic and treatment techniques. The third mechanism, collective action, is about how depression care is organized and what factors constrain and structure the depression care activities. The fourth mechanism of reflexive monitoring is the agreement between the physicians on how depression care is appraised and the understanding about why the depression care happened as it did.²⁰ In our study, the four NPT-based constructs served to reframe our findings, to describe additional relevant issues to stepped care approaches for depression, and to further elaborate on these issues.

Results

Eighty physicians and support staff working in eight primary care teams, expressed an intention to implement stepped depression care, introduced to them during the QIC. The participants consisted of PCPs (n=20), specialized mental health nurses (n=7), primary care psychologists (n=9), social workers (n=11), physiotherapists (n=5), psychiatrists and psychologists consulting in primary care (n=6), pharmacists (n=2), local project managers (n=10) and local supportive staff or managers (n=9) (Table 1).

Table 1. Distribution of participants between the QIC teams

Team identity	PCP	SMHN	PP	SW	Pht	Pth/psy	Pharm	Pm	Other
1	1	1	1	1				1	
2	2	1	2	2	1	1		1	2
3	4	1	1	1		1		1	
4	1	1	1	1		1		2	
5	2	1		2	1	1		2	3
6	5	1	2	2	1			1	
7	1	1	1			1		1	2
8	4		1	2	2	1	2	1	1
total	20	7	9	11	5	6	2	10	8

PCP: primary care physician

SMHN: specialized mental health nurse

PP: primary care psychologist

SW: social worker

Pht: physiotherapist or psychomotor therapist

Pth/psy: psychotherapist, psychiatrist, specialized psychologist

Pharm: pharmacist

Pm: local project manager

Other: manager and supportive staff

Patient differentiation

The first stepped care principle concerned the differentiation between two categories of patients: patients with severe symptoms and patients without severe symptoms. The QIC's national expert team provided a set of pragmatic severity criteria, derived from DSM-IV and diagnostic instruments, to the physicians. One aspect of the severity criteria was the duration of depressive symptoms. Discussing depression identification from the different professional perspectives was new to the physicians, and it took some time to create a shared understanding of the conceptualization of depression in daily practice:

'Our cultures are different and we are quite convinced of our own treatment approach. One can have a psychiatric view of depression and a psychological one. To discuss this with an open mind, it needs time, but that is what happened.' (Team 7)

Many physicians were positive about the new criteria for differentiation between patient categories, which seemed to help them develop their diagnostic skills:

'I find it remarkable that I was not used to the new terminology of severe depression and non-severe depression ... Especially the criterion of time as a factor impacting on severity was an eye-opener to me when I joined the QIC ... and I think for others too. I find this a refinement of my diagnostics and my clinical approach. This is an important advantage.' (Team 3)

Some PCPs preferred to keep old diagnostic styles, because of fundamental disagreement with the medical model underlying the diagnosis of depression. They gave a different meaning to the concept of depression than the QIC stepped care model, especially to the milder forms, and rather looked at underlying problems instead of focusing on symptoms. For example, if a person developed depression following the loss of a beloved one or because of a chronic illness, the PCPs did not label and treat the depressive symptoms as a depression. Even though the QIC experts advised to include this category of patients in the project and offer them a selfhelp or preventive intervention, the clinicians often did not follow these instructions:

'It was difficult to include people in the depression project, because I often thought: if I solve the problem that causes the depression, the depression will disappear. Therefore, I did not interpret the problems as a depression, but rather as ... a mood that corresponds to what is happening to this person.' (Team 1)

According to these physicians, labeling and treating the symptoms as a disease could have the negative effect of adopting too narrow of an approach to the patient's problems, offering medical solutions without considering the patient's story and contextual factors. Another reason for not diagnosing depression was a good functional state of the patient. Some physicians expressed that they would not discuss depression or bring the topic up when consulting with patients who still had high functioning.

The team discussions about the nature of the depression, as a part of the QIC method, was a learning experience for the team members, and a facilitating factor for further refinement of diagnostic skills:

'This is exactly the gain of working together, to look at depression in all its aspects, because one does not become depressive just like that, there is a whole story behind it, and if one only looks at the symptoms and treat those then one can make mistakes.' (Team 6)

Our data show that many factors influenced the implementation of the first stepped care principle of patient differentiation. Some can be related to the NPT constructs of 'coherence,' the process of creating a shared understanding about who is depressed, who is not and the severity level of the depression. This understanding needs to emerge in conjunction with the construct of 'cognitive participation,' the process to get physicians actively engage with the depression work.²⁰ Both constructs were driving the implementation of patient differentiation. Although the boundaries of depression and the severity criteria were handed to the physicians by the QIC's national expert team, the multidisciplinary teams went through an intensive process of exchange about the different perspectives on depression: the 'psychiatric' and the 'psychological' perspective. This process was time consuming, but finally resulted in the 'buy-in' of many physicians into the stepped care principle of patient differentiation, except for some PCPs who had difficulties applying the depression criteria to patients with mild, context-related symptoms (see Table 2 for an overview of the NPT related factors).

Stepped treatment of depression

Most of the change activities of the primary care teams were spent on the second principle displayed in Box 1, stepped depression treatment. The implementation efforts were mainly directed at adding one or more low intensity treatment interventions to the usual routine practice, to serve as alternative treatment option to antidepressant medication for patients with non-severe depression. The stepped care model implied that, alongside the introduction of new interventions, the teams standardized and structured their care for the different levels of depression (non-severe and severe). To some, this idea of structuring and coming to multidisciplinary agreements was helpful, because it gave them a sense of control over the care process. Others were hesitant about it, because they believed that depression care is difficult to standardize, because all patients have a unique symptom profile.

It took some teams quite a long time to discuss the stepped care interventions, compare them to existing routines, study the 'toolkit' with descriptions of the interventions provided by the national expert team, define the skills and capacity

necessary to provide them, and reach agreement upon who should provide the interventions and how to implement them locally. This process was especially relevant in the multidisciplinary teams in which the physicians were unfamiliar with each other's skills and work. Getting to know other team members was a first but necessary step:

'It is important that we now know what everybody has to offer...that process happened in harmony...so now I can refer even more adequately to social work, for instance, if I want the patient to have intensive coaching or practical help...that kind of care.' (Team 4)

The actual implementation activities consisted of different kinds of preparations for stepped depression care. Most teams installed a regular multidisciplinary staff meeting for discussions about patient care plans. Manuals, procedures, and patient information leaflets were developed, educational workshops were attended, new healthcare providers were contacted to provide specific care modules, and insurance companies were approached for additional funding. In addition, many team members participated in workshops offered by the QIC to train themselves in specific techniques, such as problem-solving treatment and psycho-education.

Despite the hard work, it was not possible for every team to organize one (or more) of the new interventions within the 15-month time frame of the QIC. However, if they did succeed to introduce new interventions, this allowed them to offer new choices to patients, as alternative interventions to medication:

'Well, I liked noticing that I did change my routines ... When handling depression, I used to think: either I prescribe medication and do some consultations or I refer to specialty care. Now, many other options appear to be possible.' (Team 7)

Changing routines in clinical practice for depression treatment had several benefits. Not only were team members able to offer more alternative interventions to clients, but they developed the self-confidence to do so, rather than simply prescribing antidepressants. The team members also felt that overall, changing routines for depression care was a positive experience:

'Many people have had good experiences with antidepressants. They find it hard to leave them. Also the PCP is used to prescribing them...but in the course of the project I progressively managed to offer alternative, low intensity interventions, because I started to believe in them myself ... Nowadays I tell my patients that I keep antidepressants up my sleeve.'
(Team 8)

New interventions were not always provided according to the descriptions in the QIC toolkit. Some physicians openly admitted to offer their patients depression care with 'a bit of everything'.

There were several PCPs who displayed mistrust in the effectiveness of the low-intensity treatment options. The reason for disagreement and mistrust stemmed from the fact that these PCPs believed that offering only low-intensity interventions implied insufficient treatment. This group of PCPs argued that patients with depression are in need of more substantial treatment options, and that 'just giving a self-help manual and tell them to return in six weeks, is not general medicine.'

As a consequence of the teamwork, the contacts between the physicians within the improvement teams improved in terms of knowing and understanding each other, and facilitating more open and direct communication and a shared language. Physicians experienced that this improved communication positively impacted on day-to-day collaboration and thought this change of itself had been one of the most important gains of the QIC:

'I think our collaboration improved ... getting to know each other by spending time together. To me, improved collaboration, independent of depression care, has been an enormous gain of this project.' (Team 1)

According to the respondents, competition between mental health nurses, social workers, and psychologists did lead to discussions, but did not result in real conflicts. The argument was that due to the vast number of depression interventions to be implemented, there was work to be done for all types of healthcare workers within primary care. Considering this, team members mostly preferred to be complementary instead of competitive. In relation to specialty care, complementary action included reaching an agreement with staff working at the specialist level, to refer patients to existing self help programs when necessary. Competitive actions included instances where several primary care teams established a new physical exercise group within primary care, rather than

referring patients to existing programs at the specialist level in psychiatric facilities. This reasoning for the introduction of such a program was due to the belief among these primary care teams that bringing exercise 'to the patient' was a better response to address the needs of the patient.

Different factors influenced the implementation of the new interventions. Barriers for introducing them were poor organizational infrastructures in primary care, a lack of financing of some psychological or physical interventions, a shortage of patients with depression choosing the new interventions, and a lack of collaboration from specialist care organizations who were not always keen on sharing care. Other factors were facilitating the implementation of stepped care, for example national policies and regulations within the healthcare system. Some respondents spoke about 'the stepped care movement' that started about ten years ago, but only recently came to reality due to multiple favourable conditions coming together. The QIC had given this movement a 'push,' and although the implementation of the full stepped care model did not occur within the given time frame, change in the right direction did occur in the eyes of the teams:

'It is very difficult to induce change in a short period of time, I have noticed. On the other hand, I did sense enthusiasm for this very workable model...It mainly 'structures' the care that a PCP provides and creates possibilities for agreements. Yes, I do feel positive about this, it would be a waste to return to old routines again, and that's what I notice amongst my colleagues as well.'
(Team 4)

These results show that the second principle of the stepped care model –implementing stepped care treatment– was mainly translated by the physicians in trying to introduce new interventions and reduce antidepressant prescribing. This process demanded an intensive process of 'cognitive participation' and 'collective action,' engagement with a shared set of techniques and agreement on how the work should be organized. Collective action, according to Gunn et al. is defined as 'purposive action aimed at a clear goal, and is influenced by both organizational (external) factors and immediate (internal) factors.'²⁰ Important positive internal factors in our data were related to the physicians developing trust and good relationships among the team members and with patients, important external factors were related to poor reimbursement of the new interventions, and stimulating stepped care policies helping the implementation process. (Table 2).

Table 2. QIC factors influencing the achievement of the NPT constructs and depression propositions

NPT constructs (May and Finch, 2009)	Corresponding propositions (Gunn <i>et al.</i>, 2010)	QIC factors
Coherence	Depression work requires conceptualization of boundaries (who is depressed, who is not depressed). Depression work requires techniques for dealing with diffuseness.	<p>Facilitators:</p> <ul style="list-style-type: none"> • The QIC stimulated multidisciplinary team discussions with open exchange of perspectives. The stepped care model offered physicians a technique for shared understanding on depression (who is severely and non severely depressed). • The BDI offered a framework for dealing with diffuseness of depressive symptoms. <p>Barriers:</p> <ul style="list-style-type: none"> • Different professional views on depression causing long discussions. • Disagreement of some physicians with the medical model underlying the stepped care model.
Cognitive participation	Depression work requires engagement with a shared set of techniques that deal with depression as a health problem.	<p>Facilitators:</p> <ul style="list-style-type: none"> • The new low intensity stepped care treatment options fitted well into the primary care perspective. • The QIC meeting helped the exchange of the different views and come to agreements about the local depression care pathway and the task division. • Working with the stepped care model improved the knowledge, skills and self confidence of primary care physicians. • Treatment choices could be easily shared with the patients, leading to better working relationships. <p>Barriers:</p> <ul style="list-style-type: none"> • Unfamiliarity within the teams with each others skills and perspectives. • The negative attitude of some physicians towards standardization of depression care. • The belief that (pro-active) monitoring is not a normal part of the PCP's work, and rather the patient's own responsibility.
Collective action	Depression work requires agreement about how care is organized, who is required to deliver care, and their structural and human interactions.	<p>Facilitators:</p> <ul style="list-style-type: none"> • The possibility to tailor the stepped care model to the local setting. • Training was offered to apply the stepped care interventions. • Regular team meetings to discuss individual treatment plans helped to agree on how stepped care was delivered. • Competition between the different disciplines was not conceived as a problem because of the large amount of work to be divided. • Government policies have stimulated 'the stepped care movement' over the last decade.

NPT constructs (May and Finch, 2009)	Corresponding propositions (Gunn <i>et al.</i> , 2010)	QIC factors
		Barriers: <ul style="list-style-type: none"> • Poor organizational infrastructures, such as the absence of links with specialty care. • A lack of funding of the new low intensive interventions, such as physical exercise. • A lack of patients opting for specific interventions.
Reflexive monitoring	Depression work requires the ongoing assessment of how depression care is done.	Facilitators: <ul style="list-style-type: none"> • Improved motivation because outcome measurement can structure and advance care for individual patients. • Positive reactions of patients and improved relationships, as a result of sharing the monitoring results. • Improved self-confidence of physicians in making treatment decisions based on objective measurement. Barriers: <ul style="list-style-type: none"> • Multiple logistical problems for getting the questionnaires handed out and returned by the patients. • The absence of supportive systems (ICT, reminder systems) or staff. • The absence within the primary care teams of a culture and skills for process evaluation.

Outcome monitoring of depression

The third stepped care principle to be implemented consisted of structural use of the Beck Depression Inventory (BDI), which had to be completed every six weeks by the patient until a score of 10 or lower was achieved.²⁵ This implies that in case of a no-show of a patient, the team needs to pro-actively contact and follow-up with the patient. The structural use of a depression measurement within the QIC context served two functions. First, it served as an outcome indicator within the stepped care model, to follow-up on the patient's well-being, and step up to a next treatment level if the patient was unresponsive. This use of the BDI was much appreciated by the physicians:

'Such a measurement instrument in a primary care practice is very special. And in fact, I do feel positive and enthusiastic about it. To follow the course of the depression in this way and the treatment time ... three months, six months ... and if something does not work, one can take the following step.' (Team 4)

The second function of the BDI was to serve as a process indicator, in an effort to help the improvement team reflect on the progress of the implementation process,

to identify barriers and adapt implementation strategies where necessary. This introduction of the use of the BDI instrument as a process indicator was part of the PDSA cycle, a formal component of the QIC method. The teams were asked to use process indicator patterns and trends over time to reflect on their implementation work, but this method of making goals and processes explicit and accountable did not appear to fit within the more intuitive cultures of the primary care teams:

'I did not need the Plan-Do-Study-Act method, neither did my group. Rather, it created confusion ... What we did, we just started and tried to profit of each other's added values ... and of course we tried to improve the care for patients with depression. We simply worked with that in mind and that was all we needed.' (Team 2)

There were a number of barriers to the introduction of the BDI, as the structured use of a patient questionnaire for depression was virtually unprecedented. Baseline BDI measurement, at the beginning of care, was relatively easy to organize compared to repeated measurement. One professional-related barrier discussed during team meetings was the vision of some teams that depression measurement on a continuous basis by proactively asking patients to fill out the BDI, was 'patronizing' and therefore not in accordance with a PCP's professional role but more appropriate for other roles, like social workers. Arguing that monitoring is the patient's own responsibility was cited as another reason for not ensuring that the BDI was continuously registered over time:

'Sometimes I see someone with a BDI of 20, and in spite of this I still conclude that this is not depression ... Some weeks later the person visits me again and I see that things have calmed down. And after that the person does not turn up again ... In those cases I do not call the patient myself, that is not my way of working. I consider that to be somebody's own responsibility.' (Team 3)

Although the physicians clearly invested time and effort to use the BDI as a monitoring tool and attempted to make it work, organizational barriers made the use of the BDI a very time consuming and difficult task. Having the BDI sent to the patients and returned to the practice, the lack of supportive Information and Communication Technology (ICT) for reminding the physicians about the BDI or

for registration and feedback of BDI scores, and a lack of administrative staff, were hindrances to BDI implementation. Despite these difficulties, some physicians did manage to incorporate the instrument into their work processes. The patients' reactions to this were surprisingly positive, despite the prior expectations of many that patients would not co-operate. While using the instrument during consultations, the patient-doctor communication became more structured, focused, and therefore more meaningful for both. This was an unexpected function of the BDI instrument:

'I found patients to be very enthusiastic about the BDI. You wonder how they will react when you give them a questionnaire like that. Well, very positively. And for a PCP it provides a starting point for the next consultation, something to talk about, a lead' (Team 4)

Additionally, another also unexpected function of the instrument was the physicians' perception that the BDI legitimated treatment decisions and gave some objectivity to them. Like a thermometer indicating the patient's fever, the BDI made the physicians feel more certain in decision-making, confirming that they were not 'just doing whatever came up.' At times, the physicians noticed that this 'objectivity' also worked out positively for patients as well, particularly when their BDI score changed to a lower score. A declining score served as a hopeful message to the patient, as 'proof' that the depressive symptoms were going to go away even where the patient had not yet experienced any symptom improvement. However, physicians did not always trust the BDI score and sometimes valued their subjective assessment of the client as more important, thus relying on their own clinical judgment.

Relating back to the NPT constructs, the implementation of the BDI during the QIC does not correspond to the construct of 'reflexive monitoring,' which is the notion that depression work demands an 'ongoing assessment of how depression care is done'.²⁰ Reflexive monitoring, in terms of using data for understanding the implementation process and guide discussions that may lead to modification of the implementation goals and strategies, did not occur as intended by the expert team, mostly because it did not match with the primary care culture for introducing change. While teams did introduce the BDI, the function was more to appraise well-being and the treatment plans of the patients, rather than using it as a tool to measure progress and process. Different factors, related to other NPT constructs, influenced the actual implementation of the BDI (Table 2).

Discussion

The introduction of a stepped care model for depression to primary care teams within the context of a depression QIC was generally well received by the participating physicians. All three elements of the proposed stepped care model (patient differentiation, stepped care treatment, and outcome monitoring) were translated and introduced locally. The process was influenced by a complex set of factors. Facilitating factors for the implementation process were the stepped care model itself, the structured team meetings as part of the QIC method, and the positive reaction received from patients to stepped care. Hindrances to rapid implementation included the differing views of depression and depression care within the multidisciplinary healthcare team, lack of resources, and underdeveloped information systems. As a result of these hindrances, physicians were not able to fully adopt the stepped care model as a new treatment approach embedded in primary care, but did manage to take some strides towards utilizing this treatment approach. The stepped care changes reported by the physicians were: learning how to differentiate between patient groups with depressed symptoms and different levels of care; being able to offer a broader treatment package to depressed patients including low intensity interventions; changed antidepressant prescribing routines; and better working relationships with patients and with colleagues.

Although all four NPT constructs operated concurrently in the QIC, 'coherence' and 'cognitive participation' appeared to be crucial drivers, especially in the beginning of the process. The introduction of the stepped care model by the expert team was not enough to get the physicians started. The teams needed time for discussions and information exchange to reach a shared understanding of depression and depression care and to come to local agreements about the selection of interventions and the distribution of tasks amongst the different team members. In teams where members did not know each other prior to the QIC, it was a very time consuming process to reach a shared understanding of depression care and get physicians engaged with the change process. The stepped care model itself provided clear guidance for 'collective action' and the actual implementation of new interventions for depression, but external factors such as poor financing hindered the change process. The NPT construct of 'reflexive monitoring' did not happen as explicitly as the QIC method intended. Instead of following PDSA cycles, supported by monitoring results, the teams moved on rather intuitively, using the BDI data to follow patients outcomes and adapt the treatment plan accordingly.

Relation to other studies

In our study, we found that a shared understanding of depression and depression care is a crucial step towards change. This is in line with the view of Gunn et al., who argue that primary care physicians 'hold a different view of depression and depression work compared to the traditionally applied psychiatric viewpoint' and suggest that 'without shared agreement about what primary care means by the term depression, diagnosing and developing adequate treatment and management pathways will remain difficult'.²⁰

The QIC intervention relates to other national depression quality improvement work in primary care, such as the research by Meredith et al., a process evaluation of an American depression QIC, based on Wagners chronic care model, with multidisciplinary quality improvement teams in 17 diverse primary care organizations.²⁶ The evaluation comprised semi-structured interviews, conducted with team leaders, about the successes and the barriers that facilitators experienced during the QIC. Results revealed that some elements of the chronic care model changes were adopted by all the teams (proactive follow-up, patient education, patient registry systems, and care planning), while other changes were not (provider participation and patient activation). The only barrier that affected perceived success was poor leadership support.

Another similar initiative is the RESPECT project, which involved depression care management, collaboration between mental health and primary care professionals, and preparation of primary care physicians and practices to provide systematic depression management. Patient response was monitored with the Patient Health Questionnaire-9 (PHQ-9).²⁷ Results from the interviews revealed that a lack of reimbursement posed the greatest obstacle for implementation of the care model. Successful dissemination of the depression care model was found to be related to a broadly shared vision and commitment at all levels of an organization, clearly articulated by clinical leadership and a systematic change strategy in place to improve chronic care.²⁸

Our results are also in line with a recently published report of a stepped care implementation study in the United Kingdom, concluding that implementation of stepped care at different sites varies greatly according to different contexts.²⁴ Richards et al. suggest that 'prescriptive national initiatives should incorporate local modeling to translate national prescriptions to specific situations'.²⁹ Although the implementation intervention applied in this project did not contain local computerized modeling, it did incorporate a modeling process in terms of creating

time and support for primary care teams to discuss and translate the stepped care principles to their own contexts.

Strengths and limitations of the study

Strengths of this study are the depth and details generated about the introduction of stepped care amongst a fairly large and diverse group of primary care physicians, who actually experienced these change processes. The use of NPT helped to interpret the findings in a generalizable framework for adoption of new routines. A limitation of our work is that our findings are based on experiences of physicians who volunteered to participate in a quality improvement program and were supported to implement a stepped care approach. Our findings might be less applicable outside the context of a quality improvement project. Secondly, we only interviewed the improvement teams once during the course of the program. Additional interviews at different time points could have reduced the risk of missing information that would have been important to understanding the implementation process; however, we believed one interview was sufficient to capture experience with the implementation process. Furthermore, financial and pragmatic constraints did not allow for multiple interviews.

Interpretations of the findings and implications for practice

Our data strengthen our expectations that the introduction of stepped depression care within primary care teams is time consuming, and dependent on an interaction of complex factors. We found barriers and facilitators for this change at different levels: the stepped care model and the QIC itself, the individual professional, the patient, the social context, the organizational context, and the economic and political context. Despite these barriers, the QIC context helped the teams to move towards a more stepped care approach for depression, using the three principles of the QIC model. Our data underscore the unpublished quantitative findings of the QIC intervention study, that it seems unlikely that the changes reported by the physicians would have occurred by itself within the primary care teams. The data show that the processes of coherence and cognitive participation within the multidisciplinary teams were so crucial, and that without the QIC infrastructure of regular and structured multidisciplinary team meetings, coordinated by a local project manager, the stepped care model might not have been emphasized so much and translated to local circumstances by the physicians as it was during the QIC.

This raises the question whether providing a care model and organizing team meetings are sufficient to induce change or whether physicians also need supportive mechanisms such as following PDSA cycles or making use of an expert team. According to our data, the explicit use of PDSA cycles and the expert team seemed to be of less value to the primary care teams. Another question that remains is whether QICs in mental health, instead of taking a rather one-size-fits-all approach, should be designed in a more flexible way and show more sensitivity to local problems in terms of poor 'coherence' or 'engagement' of individuals. Additional implementation studies may be able to answer these questions and make suggestions for adaptations of the QIC method.

The take-home message, based on our additional NPT analysis, is that future implementation projects for depression in primary care should incorporate sensitizing strategies for addressing local problems of participating teams. Facilitators who guide these processes should be particularly attentive to local problems related to 'coherence' and 'cognitive participation.' If implementation strategies are too oriented towards action and rapid implementation, clinicians might not engage. Also, systems for reflexive monitoring are still not implemented and need to be addressed if policy makers aim at processes of continuous quality improvement in depression care.^{20,30} Besides this message that the use of NPT has led us to, the application of the NPT constructs to our data has also been problematic due to the overlap and difficulty of discerning the difference between the constructs. Another criticism of NPT is related to the point that May and Finch address: that NPT 'focuses on the work of embedding and of sustaining practices within interaction chains'.¹⁹ This implies that the NPT constructs are mainly based on perceptions of people, which present the risk of leaving some contextual factors beyond the scope.

Stepped depression care has been strongly promoted throughout the Netherlands in the past five years. Both the stepped care model used in our study, as well as several of the QIC method elements have been helpful tools to guide stepped care implementation in some regions. It is important to consider that users of the model might consider an adaptation such as the adoption of the PHQ-9 instead of the BDI. The BDI was selected by the QIC's national expert team in 2004, based on their own experience with this instrument in specialist care. However, the PHQ-9 has become more widely used by now, and has some advantages over the BDI, such as its ability to diagnose and monitor the severity of depression, in addition to its brevity and usefulness in primary care practice.³¹

An adaptation of the QIC method may be to use the NPT constructs to check progress of change, to identify team barriers, and to develop strategies to overcome these barriers. These adaptations of both the stepped care model as well as the QIC method could be topics for future research in this area.

Conclusions

Stepped depression care can be received positively in primary care. Although implementation of a full stepped care approach cannot be reached within a short time frame, within a QIC context physicians can set steps into this direction. Creating a shared understanding within multidisciplinary teams of what constitutes depression and coming to an agreement on the content of depression care and the division of tasks is important to address during stepped care implementation processes.

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Chapter 6

Implementing clinical guidelines for depression on antidepressant prescribing in primary care: a quasi-experimental evaluation

G. Franx
J. Huyser
J. Koetsenruijter
C. van der Feltz-Cornelis
P. Verhaak
R. Grol
M. Wensing

Abstract

Objective: Internationally, guidelines for depression recommend a stepped care approach, implying that antidepressant medication should not be offered as a first step treatment to patients with sub-threshold or mild depression. In the Netherlands, antidepressant prescribing rates in primary care as a first treatment step are considered to be high. This study aimed to implement guideline recommendations on antidepressant prescribing within the context of a national Quality Improvement Collaborative (QIC) in primary care.

Method: A quasi-experimental study with a nonequivalent control group and three years follow-up was performed in the primary care setting in the Netherlands. Primary care physicians (PCPs) participated in multidisciplinary QIC teams, which focused on the implementation of a guideline based model for stepped depression care. The model consisted of self-help and psychological treatment options for patients with milder symptoms as an alternative to antidepressants in primary care. Changes in antidepressant prescription rates of PCPs were registered for a three-year period and compared to those in a control group of PCPs, selected from an ongoing national registration network.

Results: A decrease of 23.3% (49.4%-26.1%) in antidepressant prescription rates for newly diagnosed patients with depressive symptoms was found within the intervention group, whereas no difference occurred in the intervention group (50.3%-52.6%). The decrease over time was significant compared to the control group (OR 0.44, 95% CI: 0.21-0.92).

Conclusions: A Quality Improvement Collaborative aimed at implementing stepped care principles for the allocation of depression interventions, resulted in reduced antidepressant prescription rates in primary care. PCPs can change prescribing behaviour within the context of a multifaceted implementation strategy.

Introduction

Depression is a highly prevalent condition with a range of effective treatment options, many of which can be offered in primary care. Since 2004, guidelines in several countries recommend a 'stepped care approach' as a framework for organizing depression care, putting treatment options in a specific order and relating them to patient severity profiles.¹⁻⁵

Based on this framework, the national evidence-based multidisciplinary guideline for depression in the Netherlands, developed by a Guideline Development working Group (GDG) consisting of primary care physicians (PCPs), psychiatrists, psychologists, allied health professionals and consumers and carers, recommended that antidepressant medication should not be offered as a first step treatment to patients with sub-threshold or mild depression. Instead, brief and non-pharmaceutical interventions including watchful waiting, (guided) self-help based on cognitive behavioural therapy (CBT), physical exercise and problem solving therapy were considered appropriate choices in the beginning of a treatment episode. Antidepressant medication or psychotherapy were to be offered as first step treatment options to patients with moderate, severe or chronic symptoms.¹

Depression care according to guideline recommendations, does not seem to be current practice. Rates of guideline concordant care reported in the literature range, depending on setting, country and criteria for appropriateness. Results of the National Comorbidity Survey Replication showed that over twelve months, 52% of patients with depression received treatment and only 42% of these cases received treatment considered adequate, which in that study referred to four outpatient visits for psychopharmacology, or eight or more visits with any mental health professional of at least thirty minutes. This resulted in 22% of all patients with depression being adequately treated.⁶ In the Netherlands, appropriate adherence for depression to the national guideline for PCPs was around 42% of patients with a confirmed 6 months recency diagnosis of depression.⁷ In the Dutch study, adherence to guidelines was defined as: receiving at least five consultations of the PCP in the 15 week period after the diagnosis for psychological support, or receiving counseling, or receiving appropriate antidepressant medication, or a referral to a mental health specialist. Appropriate antidepressant medication was defined as receiving at least one consultation within six weeks of initiating antidepressant drug treatment and continuation of treatment for at least five months or cessation after 2-6 weeks in case of no-response.⁷

Focusing on recommendations concerning antidepressant prescribing, a number of problems exist. Firstly, antidepressant prescription rates in primary care

are high in the Netherlands, 76% in 2002 and 70% in 2008.⁸ Although these rates seem to decline in recent years, they have risen strongly over the last decades, with rises of more than 30% being reported in different countries.⁹⁻¹⁴ One explanation for this rise of volume in antidepressant prescribing are the changes in the proportion of patients receiving long term treatment.^{15,16} Secondly, antidepressant prescription for depression during the first contact with the patient has also risen, from 62% of the cases in 1993 to 73% in 1998.¹⁷ Thirdly, there is a strong variation in prescribing between PCPs, which can be explained by population and PCP's characteristics.¹² And finally, prescription of antidepressants by PCPs seems unrelated to symptom severity.¹⁸ A stepped care approach is also lacking because effective and brief, low intensity alternatives are poorly known and yet to be implemented in primary care.¹⁹ Considering also the fact that antidepressant treatment does not comply with the preferences of many patients, many of whom give negative reports of ineffectiveness and side-effects, there seems to be a need to change prescribing behaviour in primary care into a more stepped care direction, and in accordance with the clinical guidelines.^{18,20-23}

In order to do so and implement key recommendations of national depression guidelines in the Netherlands, a Quality Improvement Collaborative (QIC) with a three year follow-up was run from December 2006 until March 2008, as part of the National Depression Initiative.²⁴ QICs are multifaceted strategies offered to clinical care teams, to rapidly improve performance and outcomes.²⁵⁻²⁸ Parallel to the QIC, an implementation study was performed to determine the impact of the Depression QIC, in implementing guideline recommendations concerning antidepressants prescribing by PCPs.

Methods

As adopting a stepped care model for management of depression is a major change and thus difficult to allocate randomly to healthcare professionals, we performed a quasi-experimental evaluation with a non-equivalent control group and three year follow-up period. The principle research question to be answered concerned the impact of the QIC on antidepressant prescribing of participating PCPs compared to prescribing behaviour of PCPs who had not participated in this improvement program. At the time of the study, nationally around 40%-60% of patients in primary care presenting with sub-threshold or mild depression received antidepressants.^{2,29} Thus, the expected overall effect of the QIC was a decrease of prescription rates in the participating primary care practices over the three year study period compared to non participating practices. Ethics approval was

provided by the METIGG, a national ethics committee in mental healthcare in the Netherlands. The study registration number was ISRCTN99634826.

Study population

Our study included two study groups (“quality improvement collaborative, QIC” and “usual care”, see below) and two measurement moments in each group. The health professionals in the intervention group were PCPs (who provide all primary medical care in the Netherlands), participating in the depression QIC program, a national implementation program described in detail elsewhere.³⁰ These persons had been recruited for this purpose throughout the country by directly approaching primary care practices, or indirectly via the healthcare insurance companies. At the start of the QIC, all thirty nine PCPs were invited to participate in the study, alongside their implementation work. The main criterion for selection in the study, apart from QIC participation, was the willingness to comply with data collection by the research team and data extraction from the EMR. Baseline performance on depression indicators was not a criteria for selection. Practices were paid a fee for the time spent on research activities.

The control group included PCPs from practices participating in the Dutch National Information Network of General Practice (LINH), holding longitudinal and nationally representative data on morbidity, prescribing, and referrals.³¹ The LINH database is the principle national database in the Netherlands for primary care research, and used as such by numerous research teams and to inform the Ministry of Health on the current state of primary care.^{7,18,29,32} Because of their participation in a continuous research infrastructure, the LINH participants can be considered a relatively well performing group of PCPs, more likely to keep themselves up to date with guideline recommendations as non-participating physician. Because of this, LINH physicians and the QIC physicians were considered to be proper naturalistic comparison groups, since participation in both programs required a commitment of the PCPs to register practice data for research and quality improvement purposes.

All LINH-practices were included only if the EMR provided information about at least 90% of the three years duration of the study. Professional performance on depression indicators was not a selection criterion. Selected patients in both groups aged 18-65, with a newly recorded diagnosis of depression, as diagnosed by their PCP, were eligible for the study. Depression had to be registered by the PCPs in the Electronic Medical Record (EMR) with an International Classification

of Primary care (ICPC) diagnosis of depressive feelings (ICPC code P03) or depression (ICPC code P76).³²⁻³⁴

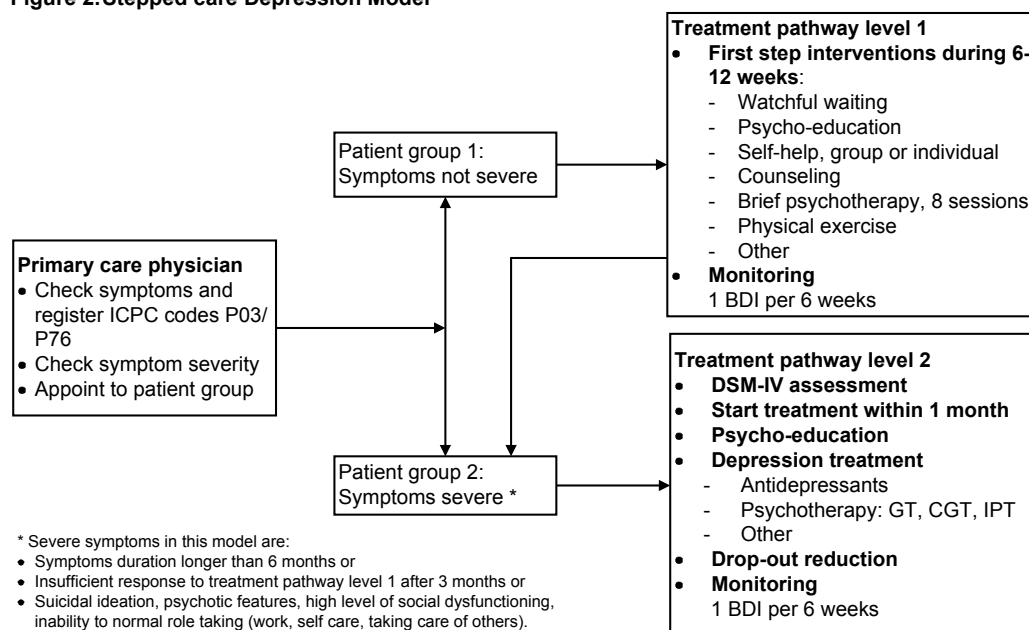
Intervention

A Depression QIC was executed during 15 months. QICs are multifaceted implementation strategies applied in many countries for various clinical problems and generally have five essential features: (1) a focus on a specific topic with gaps between best and current practice; (2), clinical experts providing ideas and support for improvement; (3) multidisciplinary teams from multiple sites participate; (4) there is a model for improvement (setting targets, collecting data and testing changes); and (5) a collaborative process with a series of structured activities in a given time frame.^{28,35,36} These structured activities offered to the participants during the Depression QIC are listed in Box 1.

Box 1. Structured activities of the depression QIC

- A network of multidisciplinary teams;
- An expert team, teaching the Stepped Care Model;
- SMART goal setting, a set of indicators to monitor results and an excel worksheet;
- A training for local team coordinators on breakthrough method and data collection;
- Four conference days for all improvement teams for exchange and learning;
- One conference day for local team coordinators for intensive exchange with the expert team;
- Five meetings between local team coordinators, with the expert team present;
- Team visits of experts and national project coordinators;
- Telephone contact between local and national coordinators;
- Written feedback on improvement reports and data charts;
- A virtual network environment for exchange of best-practices, a Toolkit of instruments and treatment protocols, online discussions and links to relevant sites;
- A two days training Problem Solving Treatment for professionals;
- A workshop Workflow Improvement.

The focus of the Depression QIC was a stepped care model for depression treatment (see Figure 1), developed by the QIC's clinical expert team and based on the multidisciplinary guideline and on previous projects.^{1,30,37} The model consisted of two pathways for patients with different severity profiles. Severity criteria were derived from DSM IV and based on the expert team's opinion. Antidepressant medication was not an option in treatment pathway 1, but could be considered after a first step intervention had not resulted in sufficient treatment response. Antidepressants and psychotherapy were first line treatment options in pathway 2. The model served to guide the primary care clinicians in their improvement work.

Figure 2. Stepped care Depression Model

Data collection

The primary outcome was antidepressant prescribing, defined as the volume of antidepressant prescriptions for the depressed primary care population (prescription rates), issued by PCPs as a first line treatment choice, within one month after the diagnosis. The secondary outcome was referral by the PCPs to clinicians providing psychological treatment. In both groups, all relevant data of patients with ICPC P03 or ICPC P76 registered from 2006 to 2008 were extracted from the EMRs of the primary care practices. Registrations by the physicians of co-morbid anxiety, using ICPC codes P01 (anxious, nervous, tensed feelings), P74 (anxiety disorder, condition of anxiety) and P75 (hysteria, hypochondria) were extracted as well. Data extraction in the QIC group was performed by the physician's assistants, who had received a detailed protocol for computerized searching and support from the researchers. Data extraction in the control group was performed by the staff from the LINH database.

Antidepressant medication covered the subgroup N06A of the Anatomical Therapeutic Chemical (ATC) Classification System of the World Health Organization. Referrals covered a registration of a referral to a primary care or a specialized psychologist, a psychiatrist, a psychotherapist, an institution for ambulatory care or a mental health hospital. Data collection covered a three year

period: the year 2006 indicates the baseline measurement before the QIC, the year 2007 indicates the year of the intervention and the year 2008 largely indicates the follow-up measurement, after the QIC had ended.

Data analysis

Descriptive statistics were calculated within the groups. We examined the changes during the three year follow-up within both study groups using a t-test. To determine the effect of participation in the implementation program and to correct for the clustering effect we applied a multilevel logistical regression analysis with a two-level structure, with patients nested within primary care practices. Statistical analysis was performed in MLwiN 2.15, comparing the outcomes between the two conditions, with antidepressant prescription (yes or no) or referral to mental healthcare (yes or no) as outcomes and the following predictors: group (QIC or usual care), patient age and gender, co-morbid anxiety (yes or no ICPC P01, P74, P75), year (2006, 2007, 2008) and an interaction term with year and group to test the difference in changes between the two conditions.

Results

Twenty PCPs from 17 practices participated in the intervention group, 115 PCPs from 41 practices were selected as controls. In the intervention group, the data of 400 patients were extracted for analysis, in the control group this number was 3956 (Table 1).

Characteristics of the study population

The mean age of patients with a ICPC registration of P03 and P76 was 39.8 years in the QIC group and 41.9 in the control group (table 1). In the QIC group the proportion of younger persons was higher (37.5% versus 32.3%), whereas the control group consisted of a larger proportion of older persons (23.3% versus 29.2%). Registration of co-morbid anxiety disorder was low in both groups of incident cases (4% and 5.8%), compared to co-morbidity rates of 8.8% to 11.9% in prevalent cases reported in other studies.⁸

Table 1. Characteristics of the patient population

		QIC practices (n=400)	Usual care practices (n=3956)
Age	18-35	37.5	32.3
	36-50	39.3	38.5
	51-65	23.3	29.2
	Mean	39.8	41.9
Male		30.0	35.1
Female		70.0	64.9
Co-morbid anxiety		4.0	5.8

Antidepressant prescription

Table 2 shows the changes in professional performance within both groups. During the three year follow up, a decrease in prescription of antidepressant medication of 23.3% occurred in the QIC group (from 49.4% in 2006 to 26.1% in 2008). The usual care group did not change prescription rates (from 50.3% in 2006 to 52.6% in 2008).

Table 2. Patients with new depressive symptoms receiving an antidepressant prescription or being referred to mental healthcare within one month (in percentages of the total of patients with a new depression)

	QIC practices			Usual care practices		
	2006	2007	2008	2006	2007	2008
Antidepressant prescription	49.4	32.2*	26.1*	50.3	47.0	52.6
Referral to mental healthcare	11.5	16.4	11.2	10.1	13.0*	9.0
n	87	152	161	1261	996	1699

* sign. < 0,05 compared with baseline (2006)

Referral rates

Overall referral rates of PCPs in the QIC practices were somewhat higher than in the usual care practices during the three years study interval. In 2006, 11.5% of the patients in QIC practices were referred within a month after diagnosis to either a psychologist, a primary care psychologist, a psychiatrist, a psychotherapist, an institution for ambulatory care or a mental health hospital. In 2008, this rate had remained at the same level, 11.2%. In the usual care practices the PCPs referred 10.1% of their patients at baseline, a non-significantly decline to 9% had occurred in 2008 (Table 2).

Factors associated with antidepressant prescribing and referral to mental healthcare

Table 3 shows the factors associated with the changes during our study period between the two study groups. The usual care PCPs did not change their prescribing behaviour in 2007 (OR 0.92) and in 2008 (OR 0.87). In the QIC group,

antidepressant prescribing as a first line treatment option did not change in 2007 (OR 0.60), but the frequency of describing decreased in 2008 in almost half of the cases, compared to the usual care group (OR 0.44). PCPs tended to prescribe more frequently to older patients, to patients having a depression (ICPC P76) and to those who had additional anxiety problems. Although bi-variate analysis (not shown) showed that these characteristics were found to be associated with antidepressants prescription, multivariate analysis showed that these characteristics did not account for the effect of the intervention and that participation in the QIC over time influenced prescription rates. The QIC group still showed a significant decline in prescription (OR 0.44), compared to the usual care group. There was no significant change of referral behaviour in both groups.

Table 3. Factors associated with antidepressant prescribing and referral to mental healthcare

	Antidepressant prescribing		Referral to mental healthcare	
	OR	(95% CI)	OR	(95% CI)
Age of patient	1.03*	(1.03 - 1.04)	0.97*	(0.96 - 0.98)
Sexe of patient (male = ref)	0.98	(0.86 - 1.12)	0.71*	(0.58 - 0.85)
Co-morbid anxiety	1.66*	(1.26 - 2.18)	0.71	(0.45 - 1.13)
Participation in Collaborative	0.98	(0.57 - 1.70)	0.93	(0.36 - 2.39)
Year (CAU)				
2006 (ref)				
2007	0.92	(0.69 - 1.21)	1.12	(0.68 - 1.86)
2008	0.87	(0.66 - 1.15)	1.28	(0.77 - 2.11)
Year * Collaborative				
2006 (ref)				
2007	0.60	(0.29 - 1.24)	1.11	(0.32 - 3.81)
2008	0.44*	(0.21 - 0.92)	0.71	(0.20 - 2.52)
ICC	0.067		0.193	

* p < 0,05

n = 4356

Discussion

This study assessed the impact of a depression quality improvement intervention, based on the Dutch national multidisciplinary guideline for depression, on antidepressant prescribing behaviour in primary care. We found a substantial change in the intervention group in terms of lowered antidepressant prescription rates as a first step treatment choice for patients diagnosed with depression by the PCP. This change was also sustained in the year after the QIC's ending. PCPs in the usual care group did not change their prescribing behaviour during the three years course of the study. In both groups there was no change in referral rates to mental health clinicians.

The results seem to support our hypothesis that, since many patients present with symptoms in primary care who do not meet the criteria for major depressive

disorder and for whom there is insufficient evidence to support the use of antidepressants³⁸, a reduction of relatively high rates of antidepressant prescriptions can be achieved as a result of an intensive implementation strategy such as a QIC. This more reluctant attitude towards antidepressant prescribing is a central indicator to a stepped care approach. Unfortunately, due to a lack of data about the delivery of low intensity interventions offered to patients with mild symptoms as alternatives to medication, our study was unable to show that the measured decline in antidepressant prescribing pointed at a more stepped care approach by the QIC PCPs. This however, was the conclusion of the qualitative process evaluation of the QIC, based on interviews with the PCP who reported that low-intensity interventions such as guided self help or brief psychotherapy, had been introduced in the QIC practices.³⁹

The second result of the study, the lack of change in referral rates in the intervention group, as well as in the control group, could point at the fact that the QIC participants did not replace the medication by a psychological intervention in the mental health sector but by an intervention in primary care or by 'watchful waiting', meaning psycho education and pro-active follow up. In many primary care practices in the Netherlands, patients can have access to mental health nurses who are equipped to provide brief, low intensity interventions or to do 'watchful waiting'.

A strength of this study was the evaluation of an ambitious quality improvement initiative with a direct comparison between two good, naturalistic groups, which makes the study appropriate to be included in an evidence review of quality improvement interventions.⁴⁰ Other strengths were the large numbers of patients, and the substantial effect on the primary outcome.

A first study limitation was the lack of a randomization procedure, not uncommon in implementation research, which was not an option since the researchers had no control over the allocation of PCPs to a particular condition. We dealt with this risk of selection bias, by choosing the best possible comparison group in the Netherlands, the 'golden standard' for measuring care as usual. An advantage of this LINH network for our study was the fact that the participating physicians, because of their commitment to registration and research, can be considered as a group of motivated and therefore relatively well performing PCPs. The consequence of comparing two motivated groups is that we can not simply generalize our results to the population of PCPs who do not show a specific motivation to improve daily care. To this problem, one could also argue that

motivation is a prerequisite for any change at all, and that the message of this implementation study is meant to inform improvement programs targeting motivated physicians. Another well known challenge in observational studies, is the risk of bias due to confounding, which in our study could have occurred in terms of other factors than the QIC causing the observed changes, might not have been equally present in both groups. Still it is quite obvious that any one of these other factors could not have caused a decline in prescription in the intervention group of 23%, which is considered to be quite substantial in the implementation literature.

A second limitation of our study was the use of EMRs as the major source of data collection. Although EMRs in Dutch primary care are common research sources for primary care data collection, they do lack information on depression identification, depression severity status, treatment process and outcomes. In addition, technical attributes of EMRs do not adapt to innovations immediately which was the reason that the implementation of new low intensity treatment interventions were not registered by the PCPs in our study period. Therefore, detailed information on care provision to different patient categories could not be identified.

Underregistration of depression diagnosis might have been less the case in our control group, since these PCPs had an agreement with the LINH database to register ICPC diagnosis and treatments provided, whereas in the intervention group this agreement did not exist. The lower ICPC reporting rates of the intervention physicians does not necessarily point at a true low incidence rate but could point at a more general trend observed by some authors, of a reduced entry of depression as a diagnosis compensated by an increased recording of depressive symptoms.⁴¹ This move towards recording symptoms in less specific terms, possibly used in patients with mild depression, may be perceived as less stigmatizing for patients or it may be explained by greater questioning of the meaning of psychiatric diagnostic categories in primary care.⁴¹

Our study adds to the Depression QIC, organized by the Institute for Healthcare Improvement in the United States in 2000-2001 and based on Wagner's Chronic Care Model (CCM).⁴² The American QIC also involved 17 primary care practices, who made changes in three of the six categories of the CCM: delivery system redesign, self-management strategies, and information systems. The changes that were most commonly viewed as major successes were delivery system changes and information system changes; these types of changes were also the most often

sustained over time.⁴³ Organizational structure and leadership support were the most common facilitators. Staff resistance, time constraints, and information technology were the most common barriers.

Our study also adds to similar European stepped care implementation studies for depression. The Scottish 'Doing Well' study incorporated the routine use of a depression severity measure with continuous outcome monitoring, a prompt access to guided self-help and a "step-up" to more formal psychological therapy or medical care if indicated. As a result, daily doses of antidepressants increased less rapidly than in other areas.⁴⁴ A more recent British implementation study into stepped care services reported a considerable variation in the design and implementation of the stepped care recommendations of the NICE guidelines.⁴⁵ In the UK, a large scale guideline implementation program, the Improving Access to Psychological Therapies (IAPT), focused on increasing the availability of evidence-based psychological treatments, both the high intensity therapies (CBT) and the low intensity therapies such as guided self-help, psycho-education groups and behavioural activation.⁴⁶ Implementation strategies mostly consisted of training and a National Implementation Plan specifying key principles for the operation of services. Three year results showed that most patients received guideline-concordant care and that patients had a higher chance of recovery if the treatment sites showed higher step-up rates from low to high intensity treatment in case of insufficient response, and if they received an adequate number of sessions.⁴⁶

There is a vast body of literature on quality improvement for depression or sub-threshold depression in primary care, mainly performed in the United States and heavily building on the system components of the CCM.⁴⁷ Ingredients of these programs are quite similar to what our QIC study offered to physicians: institutional commitment to quality improvement, training of local experts and nurse specialists to provide physician and patient education, supportive tools, identification of potentially depressed patients, patient access to nurses for medication follow-up or to trained psychotherapists⁴⁸⁻⁵⁰, collaborative care with a greater role for non-medical specialists and supervising psychiatrist.⁵¹ Practices adopting these quality improvement programs improved the quality of care, mental health outcomes, employment status while showing lowered or equal visits to medical or mental health care. In one quality improvement study, collaboration between mental health specialists and primary care providers substantially changed prescribing rates of antidepressant treatment. Active follow-up by a depression nurse

specialist was associated with longer-term improvement in antidepressant use than in practices without such follow-up.⁴⁸

The key message of this study is that antidepressant prescribing by PCPs can be changed by a multifaceted implementation strategy which offers PCPs attractive alternatives to medication and the time and support to implement those in a multidisciplinary context. This message is relevant for PCPs, psychiatrists, managers and policy makers both in Europe as in the USA who are motivated to implement guidelines for depression and to move from an overemphasis on psychopharmacological treatments for depression⁵² to stepped depression care, where patients with mild symptoms receive less intensive treatments such as medication. Policy initiatives aimed at strengthening primary care and reduce unnecessary antidepressant treatment in primary care can use our information, by addressing PCPs, psychologists, social workers and specialized mental health nurses to recognize, treat and monitor depression in a stepped care manner, offering guided self-help and brief interventions when possible and antidepressant medication when necessary.⁵³

According to Porter, process measurement, though a useful internal strategy for healthcare institutions, is not a substitute for measuring outcomes, whose principal purpose is to provide information for learning and improving, thus enabling innovations in care.⁵⁴ Our study should be considered as one of the first studies focusing on the issue of overprescribing of antidepressant treatment in primary care. It presents data indicating that PCPs can change prescribing behaviour, provided that they have access to alternatives and support. Future implementation studies should expand on this and study actual stepped care delivery of depression treatments, recommended in guidelines. Fortunately, in the Netherlands and beyond, implementation of clinical guidelines followed by process and outcome monitoring for depression are gradually becoming mandatory and better supported by information technology. This is a hopeful message for those who try to improve the care for this patient group.

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Chapter 7

Health gains and economic costs of implementing a national depression guideline in the primary care setting: a matched-control group implementation study

G. Franx
D. Volker
J. Huyser
C. Majo
C. van der Feltz-Cornelis
R. Grol
B. Penninx
M. Wensing

Abstract

Objective: To assess patient-level cost-effectiveness of health care delivery for depression by primary care clinicians, after exposure to a national guideline implementation program, aiming at a stepped care approach.

Data sources/study setting: The study setting was primary care in the Netherlands. The intervention group consisted of primary care patients from practices participating in a national depression Quality Improvement Collaborative (QIC), the control group consisted of patients from usual care practices included in the Netherlands Study of Depression and Anxiety (CAU).

Study design: An economic evaluation with a comparative matched-group design. The QIC group received instructions and support to implement a stepped care approach. The central clinical end-term was remission. Costs encompassed both health care costs and costs stemming from productivity losses.

Data collection/extraction methods: Remission was measured with the Inventory for Depressive Symptomatology (IDS-SR), at baseline and at 12 months. Costs were measured with the Trimbos and Institute of medical Technology Assessment Cost Questionnaire of Psychiatry (TIC-P).

Principal findings: The remission rate in QIC was 9/35 (26%) and 10/55 (18%) in CAU. The mean per-patient societal costs were lower in the QIC group (€5,012) than in the CAU group (€5,871).

Conclusion: From a societal perspective, the QIC approach is likely to offer more value for money than CAU, but a larger and randomized study is needed to verify our findings.

Background

Depression is the single leading cause of non-fatal disease burden, accounting for almost 12% of all years lived with disabilities worldwide and posing a substantial economic burden to societies.^{1,2} In the Netherlands, annual excess cost of depression are 2,278 euro per depressed case aged 18-65 years, summing to a total of 132 million euro per one million population.³ Evidence-based clinical management of patients with depression is crucial to protect and promote quality of life and to reduce the economic costs stemming from productivity losses.

Prevailing clinical guidelines provide a range of specific recommendations on diagnosis and treatment of patients with depression. The first national multidisciplinary guideline for depression in the Netherlands, developed for physicians in the primary and secondary care setting, was published in 2005.⁴ This guideline contained recommendations for treating patients with mild, moderate and severe depression. The recommendations ranged from watchful waiting and brief treatments of low intensity for mild cases of depression to psychotherapy and/or antidepressant medication for patients with moderate and severe depression. Brief treatments included psycho-education, guided self-help, Problem Solving Therapy and follow-up visits. The guideline implicitly recommended a stepped care approach for the delivery of these interventions, starting with a low-intensity intervention likely to induce a significant health gain, and only to step up to a more intensive intervention in case of non-response, which should be monitored.^{4,5}

Although progress has been achieved in the access and quality of care for depressed patients in recent decades, depression guideline recommendations have not been well implemented in daily practice.⁶⁻¹⁰ In Europe, the overall proportion of treatment adequacy for depression is 45.8% (95% CI 38.47–53.05).¹¹ In Dutch primary care, only 18% of patients with a diagnosis of depressive disorder, confirmed with the Composite International Diagnostic Interview¹² have a registration in the primary care Electronic Medical Record of an appropriate or partial diagnosis of depression. And of all CIDI positive patients, 42% is treated in accordance with guidelines.⁹ Despite the growing evidence of the value of depression care, awareness about the substantial economic costs generated through absenteeism, presenteeism, and disability remains limited.¹³

Guidelines do not implement themselves, but require (sometimes complex) changes in clinical practice, with often comprehensive approaches at different levels (physician, team, practice, hospital, and wider environment), tailored to

specific settings and target groups.^{14,15} In the Netherlands, a national quality improvement program using the Quality Improvement Collaborative (QIC) method was used as such a strategy to implement a stepped care model for depression, based on the multidisciplinary guideline and previous projects.^{16,17} The QIC method, which is popular in many western countries¹⁸, has five key features: (1) a focus on gaps between best and current practice; (2), clinical experts providing ideas and support for improvement; (3) participation of multidisciplinary teams from multiple sites; (4) systematic process for achieving improvement (setting targets, monitoring and evaluating changes); as well as (5) a collaborative process with a series of structured activities in a given time frame.^{19,20}

Parallel to the Depression QIC, an implementation study was performed as part of a large research program²¹ to assess professional performance and the cost-effectiveness of healthcare delivery according to QIC standards compared to care as usual. Professional performance outcomes were presented in a different paper and showed that the QIC effectively reduced the number of patients on anti-depressive medication.²² The present paper focuses on the cost-effectiveness of primary care for patients with depression after the QIC was implemented, thus focusing on a guideline-based and stepped care approach while using remission as the clinical endpoint of interest. The aim of this paper therefore, is not to test hypotheses about the effectiveness of the QIC, but to evaluate the tradeoffs between health benefits and costs and to make probabilistic statements to support medical decision making under the conditions of uncertainty. In addition, we address the implementation costs related to the QIC.

Methods

Design

We conducted an economic evaluation with a comparative matched group study, with a 12 months follow-up period to assess the differential impact of the primary care after exposure to QIC versus care as usual (CAU) on clinical outcomes and economic costs. The rationale for this design, rather than a randomized design, was that it was not feasible to randomize primary care physicians (PCPs) volunteering to participate to QIC or usual care.

The economic evaluation was a cost-effectiveness analysis (CEA) using a societal perspective, as recommended for the evaluation of healthcare programs, meaning that costs were calculated independently of those who incur these costs (or benefits) and encompass costs related to the intervention, healthcare uptake, patients' out-of-pocket costs and costs stemming from productivity losses.²³ Data

for the study were collected in the Netherlands from December 2006 until December 2009. Ethics approval was provided by the METIGG, a national medical-ethics committee in mental healthcare. The study registration number was ISRCTN99634826.

Sample of patients

The study population comprised of patients in the age of 18-65 years, newly diagnosed with depression, and receiving treatment in the primary care setting. In the QIC group, patients were consecutively included by the 20 PCPs who participated in the Depression QIC. After having consented to participate in the study, patients received a telephone interview using the depression section of the Composite International Diagnostic Interview-SF (CIDI). Telephone interviews should not affect the results in any meaningful way.²⁴ Patients with a CIDI diagnosis of current minor depressive disorder (one month recency), a major depressive disorder, or co-morbid dysthymia were included.

The CAU group consisted of a matched sample of patients, who had been included in the primary care cohort of the Netherlands Study of Depression and Anxiety (NESDA), an ongoing longitudinal study to investigate the course of depression and anxiety disorders in five regions in the Netherlands.²⁵ This cohort (n=423) had been recruited from 72 primary care practices, following a three-stage screening procedure. First, a random sample of patients who consulted their PCP over a period of 4 months, irrespective of the reason for consultation, filled out a screening questionnaire. Those who consented with the study and screened positive were offered a face-to-face interview, using the CIDI. Patients were included in the NESDA primary care cohort if they fulfilled the CIDI criteria for current minor or major depression, dysthymia, depression and co-morbid anxiety disorder or co-morbid dysthymia, and who were not treated for psychiatric conditions in a mental healthcare setting.

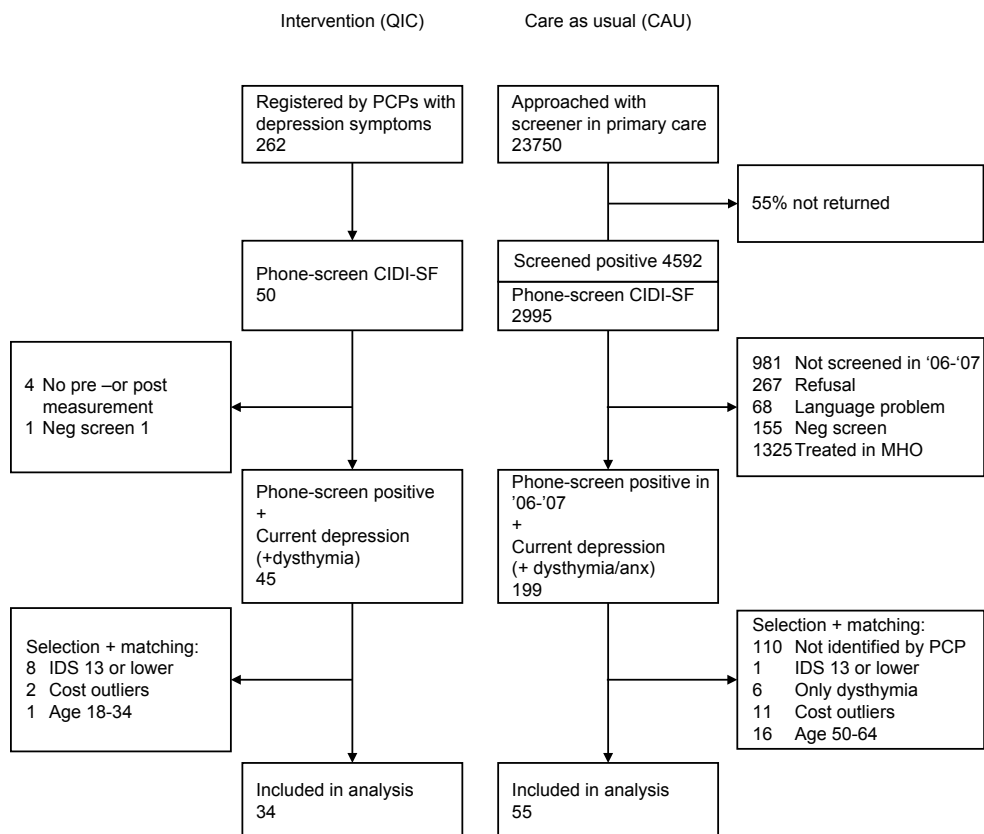
To generate a control group with a similar recruitment path as the QIC group, a subsample from the NESDA primary care cohort was selected with patients who were recruited in 2006 and 2007, being the period after the publication of the depression guidelines and the period in which the Depression QIC was organized. In addition, patients were selected only if they had indicated during the NESDA baseline interview that they had had a consultation with their PCP for mental problems. This was considered as an indication of PCP's recognition of depressive symptoms, in line with the QIC group.

To assure comparability between study groups at baseline we matched the study groups, by relevant patient characteristics that were regarded predictive of treatment response, where treatment response (remission) was defined as an IDS lower than 13. To identify predictors of remission we performed a multivariate regression analysis in both groups with age, gender, diagnosis (current depression, co-morbid dysthymia) and anxiety at baseline, measured with the Beck Anxiety Inventory (BAI) as independent variables. Only age appeared to be a factor that impacted on recovery ($p= 0.059$). After testing for differences in the mean age between the groups, a significant difference occurred with a mean age in the QIC group of 38.9 years and a mean age in the usual care group of 45.9 years. Also the percentage of patients with co-morbid dysthymia differed, with 8.6% of patients in the QIC group and 21.1% in the usual care group. To assure that differences in age and dysthymia did not bias our results, both the QIC and CAU groups were further matched for age and dysthymia, by first stratifying both groups into three age categories (18-34, 35-49, 50-64) and then removing 1 patient from the QIC group and 16 patients from the CAU group who could not be matched. Finally, we looked at comparability of costs at baseline (covering costs prior to inclusion) and removed 13 outliers with extremely high costs (over 35,000 euro, see Figure 1

Because there was a relatively large pool of patients receiving usual care, and because sample size in the experimental group was small, we conducted a 1:2 matching – when and where feasible. In the end we had matched 34 QIC participants with 55 usual care participants (in a 1:1.6 ratio), because there were not two similar CAU participants for every QIC participant. In the context of an economic evaluation however, small sample data can be used to evaluate the tradeoffs between health benefits and costs and to make probabilistic statements to support medical decision making under situations of uncertainty.

Intervention

In order to implement a stepped care approach, the QIC offered a range of implementation strategies to the participating multidisciplinary teams, including training sessions, conference days, and site visits of national experts and written feedback on performance from a national project team.¹⁷ These strategies aimed to encourage physicians in the QIC group to follow a guideline based stepped care model for depression consisting of two pathways for patients with two different depression severity levels: mild and moderate versus severe.¹⁷

Figure 1. Patient flow chart

In the first pathway, patients diagnosed by the PCP with an International Classification of Primary Care (ICPC) diagnosis P03 or P76²⁶, and considered to have a non-severe depression, were offered treatment of low intensity as a first line intervention such as watchful waiting, self-help, physical exercise and brief psychological interventions or a combination of these. In the second pathway, patients with ICPC P03 or P76 and considered to manifest with a severe depression were offered antidepressant medication or psychotherapy, or a combination of both, as first choice options after confirmation of their diagnostic status, using the DSM-IV classification.

In the CAU condition, no specific interventions were applied to change clinical practice and patients received routine medical care. In the Netherlands, routine primary care for depression consists of a number of brief consultations with the PCP of less than twenty minutes. A little more than 50% of patients receive

antidepressant medication or benzodiazepines during the first contact with the PCP.²⁷ Low-intensity psychological interventions are rarely offered.²⁸ Less than 8% of cases are referred to a social worker, mental health nurse, primary care psychologist or to specialized mental healthcare although referral to specialty care has increased between 2002 and 2008.^{29,30}

Measures

The primary clinical outcome used was treatment response, defined as recovery (yes-no), measured with the Inventory for Depressive Symptomatology (IDS-SR), a 30 item self-report questionnaire.³¹ Recovery was defined as IDS score of 13 or lower. Costs were measured with the Trimbos and Institute of medical Technology Assessment Cost Questionnaire of Psychiatry (TIC-P), a self-report questionnaire with two parts: medical consumption and indirect costs, due to productivity losses.³² Direct medical costs included medication, visits to healthcare providers, inpatient or outpatient stays, and self-help groups. Direct non-medical costs are also known as 'out of pocket costs' of patients when traveling to and from health services. We also included the patients' time costs (technically known as opportunity costs). Finally costs stemming from productivity losses were included and these encompass absence from paid work and work cut-back days, productivity losses in volunteer work, and days too ill to perform domestic tasks. Productivity losses in paid work were valued with the average gender and age specific friction costs as per the relevant guideline; while patients' time costs and productivity costs in the domestic area are based on the current price of domestic help. Here we follow the pertinent guideline for computing costs in healthcare.³³ All costs were expressed in euros on a per patient basis and indexed for the year in which they were spent. IDS and costs were measured at baseline and at one year follow-up, and were, therefore, not discounted.

To estimate the investments needed to run the QIC we calculated the initial program costs including the time costs of participating PCPs, the national project management team, the national expert team and the costs of conferences, meetings, travel and supportive materials.

Analysis

The analysis of clinical outcomes and costs was conducted in accordance with the intention to treat principle. Imputation of missing clinical outcome data and of costs at follow-up was performed with STATA 11, applying multiple regression imputation^{34,35} on the variables: age, gender, paid work, diagnosis, study group (intervention), costs at baseline.

Descriptive statistics were used to describe the two study groups at baseline on relevant variables and to calculate the remission rates at follow-up. The costs analysis was performed by calculating the incremental cost-effectiveness ratio (ICER) of treatment in the QIC condition versus treatment in the usual care condition, as the difference in costs between QIC and CAU divided by the difference of effects in both conditions $(C_1 - C_0) / (E_1 - E_0)$. In this formula C is the average annual per-patient cost and E is the percentage of patients who recovered from a depression in the experimental and control conditions (subscripted 1 and 0 respectively). The amount of stochastic uncertainty in the ICER was assessed using 5000 non-parametric bootstraps (thus simulating 5000 costs/effect ratios).

Sensitivity analysis

To test the robustness of our findings and more specifically to check whether the procedures for imputation had any appreciable impact on the conclusion of the analysis, a second bootstrap analysis was performed using the data imputed with the Hotdeck technique.³⁶

Results

Sample characteristics

The analyses were based on 89 patients: 34 in the QIC group and 55 in the usual care group (Figure 1). The mean age was 39.5 years in the QIC group and 42.8 years in the usual care group (Table 1). The participants were predominantly female (QIC 73.5%, usual care 72.7%) and employed (QIC 61.8%, usual care 63.6%). At baseline the mean IDS score was 35.3 in the QIC group and 31.6 in the usual care group. The CIDI diagnosis for current Major Depressive Disorder was found in 88.2% of the QIC patients and in 94.5% of the patients in the usual care group. Minor Depression occurred respectively in 11.8% and 5.5% and co-morbid dysthymia occurred in 8.8% in the QIC group and 16.4% in the usual care group.

Table 1. Sample characteristics

	QIC N=31-34	Usual care N=45-55	p*
Sociodemographic variables			
Age, mean \pm SD	39.5 \pm 11.9	42.8 \pm 11.1	.19
Women, %	73.5	72.7	.93
Employed, %	61.8	63.6	.86
Clinical characteristics			
Major Depressive Disorder, %	88.2	94.5	.42
Minor Depressive Disorder, %	11.8	5.5	.42
Comorbid Dysthymia, %	8.8	16.4	.36
IDS, mean score \pm SD	35.3 \pm 10.2	31.6 \pm 11.2	.13
BAI, mean score \pm SD	20.5 \pm 10.6	18.9 \pm 11.0	.51
Costs			
Direct costs, mean \pm SD	1675 \pm 2842	2001 \pm 3127	.62
Indirect costs, mean \pm SD	6888 \pm 8338	7049 \pm 7791	.93

* P-values based on independent sample t-test (continues variables) and chi-square (dichotomous variables)

Outcomes

In the QIC group 9/34 (26.5%) patients recovered, in the usual care group 10/55 patients (18.2%) recovered, which suggests a likelihood ratio of 26/18=1.4 of a better outcome in the QIC group relative to the usual care group.

Costs

Mean total per-patient costs were €5,012 in the QIC group and €5,871 in the usual care group. Mean direct medical costs for the QIC group were €1,541, compared to €1,208 euro in the usual care group (Table 2). In terms of healthcare uptake, the QIC patients generated higher costs related to visits to their PCPs and the occupational physician, on ambulatory specialized mental care and on hospitalization. The usual care group generated higher costs stemming from visits to psychologists, psychiatrists, physiotherapists and on self-help, home care and alternative medicine. Mean indirect medical costs, due to production losses, were €2,828 in the QIC group and €10,638 euro for the usual care group, whereas work status at baseline was equal for both groups.

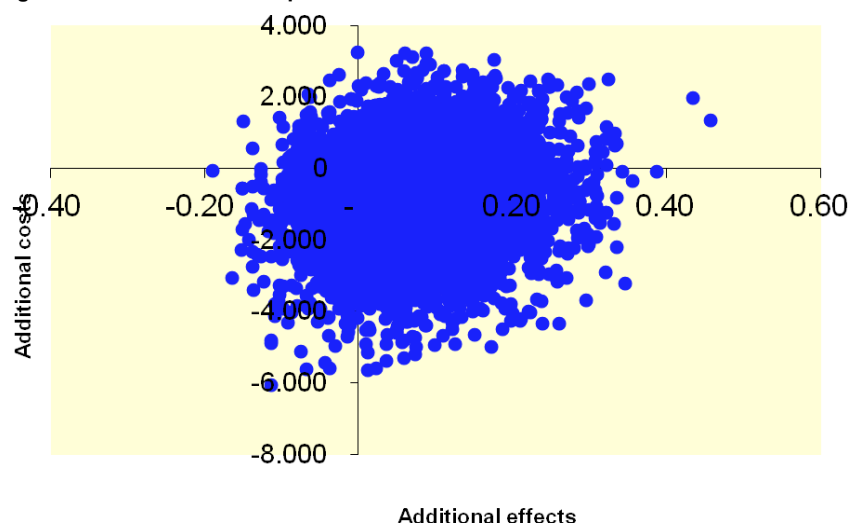
Table 2. Annual per capita costs categorized by condition (in euro, corrected for the year in which costs were made)

	QIC		Usual Care		Difference (QIC–UC)
	Mean	(SD)	Mean	(SD)	Diff
Direct medical costs	1541	(2121)	1208	(1236)	333
Primary care physician	131	(123)	103	(67)	28
Psychological therapist	443	(671)	479	(798)	-36
Medical specialist	87	(171)	127	(217)	-40
Occupational physician	25	(51)	23	(48)	2
Physiotherapist	81	(171)	208	(611)	-127
Self help	59	(891)	79	(423)	-20
Alternative medicine	50	(121)	65	(167)	-15
Ambulatory mental health	401	(1358)	133	(396)	268
Pharmacotherapy	27	(28)	22	(27)	5
Hospitalization	273	(891)	31	(112)	242
Indirect non-medical costs	5130	(5841)	7599	(13484)	-2469
Work loss	2828	(4669)	10638	(13709)	-7810
Work cut-back	3966	(5086)	2705	(4102)	1261
Domestic	2854	(2149)	73	(19)	2781
Total costs	5012	(5953)	5871	(11117)	-859

* Psychological therapist means either: social work, specialized nurse, psychologist, psychiatrist, and psychotherapist

Cost effectiveness

The incremental cost-effectiveness ratio was calculated as $(C_1 - C_0 / E_1 - E_0)$. Substitution yielded $(€5,138 - €5,993 / 0.26 - 0.18) = -€10,311$ per additional remission. Hence, for each case of recovery that can be achieved by offering a QIC treatment rather than CAU, a saving is made of €10,311.

Figure 2. Cost-effectiveness plane

Each dot (n=5000) represents a bootstrapped cost-effectiveness ratio.

The incremental cost-effectiveness ratio (ICER) is surrounded by a certain amount of uncertainty. Figure 2 presents the cost-effectiveness plane for the intervention versus care as usual. The incremental costs are plotted on the y axis and the incremental effects on the x axis. Each dot ($n=5000$) represents a bootstrapped replication of the ICER. 24% of the simulated ICERs are in the upper right-hand quadrant, indicating that a health gain is produced by QIC but at additional costs. 60% of the dots are in the lower right-hand quadrant, indicating a 60% probability that QIC is superior to CAU because it generates better effects against lower costs. There is a 3% probability that QIC is inferior to CAU, and a 13% probability that it is both less costly and less effective.

Figure 3. Cost-effectiveness acceptability curve

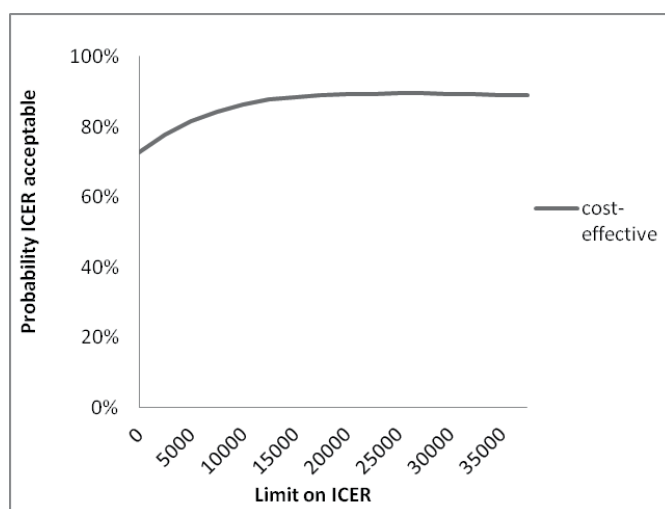


Figure 3 shows a cost-effectiveness acceptability curve, indicating the probability that the incremental cost-effectiveness ratio is acceptable (y-axis) given varying thresholds for willingness to pay (x-axis) for gaining one recovery, based on 5000 bootstrap replications. The acceptability curve intersects the y-axis at 73%, indicating that when the willingness to pay (WTP) for a recovered depressive patient is absent (equal to € 0), then there is a 73% probability that QIC care is more cost-effective than usual care. When the willingness to pay is raised to €10,000 per recovered depression, then the intervention has a probability of 86% of being cost-effective compared to CAU. At €20,000 the probability of an acceptable cost-effectiveness has risen to 89%.

The sensitivity analysis with the Hotdeck imputation confirmed the results of our main analysis. Substitution based on the Hotdeck imputed dataset yielded (€4,811– €5,830/0.26-0.24) = - €35,928. Hence, for each recovery that can be achieved by offering a QIC treatment approach instead of usual care, a saving is made of €35,928. Of all simulated ICERs 18% is in the upper-right quadrant (more costs; better effects), and 44% in the lower-right quadrant (less costs; better effects). 7% falls into the upper left quadrant, indicating that the intervention is inferior; 32% falls into the lower left quadrant, indicating less effect at lower costs. When the WTP equals €0, then the QIC approach has a probability of 76% of being acceptable. At a WTP of €20,000 this probability is at 79%.

Implementation costs

In order to implement a stepped care approach, a total of 80 clinicians with different professional backgrounds and local staff participated in the QIC, for a duration of 60 weeks. On average, 144 hours per person were spent locally on implementation activities of the professionals, such as team discussions and national learning sessions, for a total amount of €724,000, which is around €36,000 per PCP (724,000:20). Apart from this, €340,500 was spent to pay for the national project management, the national expert team and for conferences, meetings, travel and supportive materials. Adding these components up, we estimated that, to organize the QIC in eight different regions in the country, a total budget of about 1 million euro (€1,064,798) was invested (Table 3).

Table 3. Depression QIC implementation costs

Time costs per discipline participating in the QIC	Costs
Primary care physicians* (n=20)	177,154
Primary care psychologists* (n=9)	46,667
Specialty care psychologists/ psychotherapists* (n=1)	12,733
Social workers* (n=12)	34,988
Specialised mental health nurses (n=8)	34,214
Physiotherapist* (n = 5)	6,929
Psychiatrists* (n = 5)	72,495
Doctor, trainee** (n=1)	7,381
Pharmacists** (n=2)	20,712
Local staff QIC teams** (n=9)	138,240
Staff, managers supporting local QIC teams** (n=8)	172,800
Total time costs (n=80)	724,313
National project management team, 234 days***	178,510
National expert team, fixed fees***	95,000
Conferences, meetings, travel, materials***	66,975
Total costs	1,064,798

* Based on: Oostenbrink. 2004. Handleiding voor kostenonderzoek [Guidance for costing research]

** estimation, *** based on QIC administration.

Discussion

Patients in the QIC condition showed similar or (potentially slightly better) outcomes than patients in the CAU condition, while societal costs appeared lower. The economic evaluation indicated that, when choosing the QIC approach over CAU, there is a 73%-89% probability that QIC is more cost-effective, even cost-saving, as compared to CAU, even when the willingness to pay for an additional recovery from depressive disorder is zero (€0).

From a societal perspective, this cost-effectiveness analysis showed that for each recovery that can be achieved under the QIC treatment approach a cost reduction is made of €10,311 relative to CAU. However, the costs of implementing QIC were substantial and this is an issue in its own right.³⁷

There are several limitations to our study. First, randomization of patients was not an option, since the QIC program was designed as an implementation intervention for Dutch clinicians who wanted to adopt the Depression Stepped Care Model. Randomization is rarely used in studies of systemic change.³⁸ Second, we were charged with evaluating an improvement process, in which participation of PCPs was voluntary. We do not know whether, if the QIC program would be imposed on a larger group of clinicians, the results would be the same. Third, recruitment pathways of patients were not exactly the same in the QIC group and in the matched CAU group. In the CAU group, patients were recruited from primary care practices through screening of all patients, following a three-stepped screening procedure. In the intervention group, PCPs themselves recruited patients after having recognized mental problems. We tried to reduce the risks of these and similar biases by using a matching procedure to make both study groups comparable, but the limitations inherent in matching place this study on a less robust footing, and leave our results open to confounding. A last limitation is that both groups contained small numbers of patients, causing a possible lack of power to detect differences by statistically testing hypotheses. In the QIC group, the low numbers were mainly due to perceived barriers amongst the PCPs to make a research contribution in terms of approaching their patients for informed consent to participate in the study. The low numbers made have made the study underpowered and unfit to test hypotheses and draw conclusions based on statistical analyses. Because of this, we considered the study's outcomes tentative rather than final.

While recognizing these limitations, our study suggests that depressed patients receiving care from clinicians participating in a QIC program based on guidelines, pose a lesser economic burden to society, due to fewer productivity losses. This is in agreement with the as yet limited body of QIC literature in the general medical setting, which shows that the QIC strategy can be cost-effective.³⁹

However, our overall positive results are not in line with an economic evaluation performed alongside a pragmatic randomized trial of a depression disease management program for elderly patients, based on the guideline of the Dutch College of General Practitioners.⁴⁰ Bosmans et al⁴⁰ observed no differences in depressive symptoms, quality of life and costs at 12 months. Perhaps, our non-randomized design may have led to portray an overly rosy picture, but there is also the fact that production losses are less relevant in the elderly population, which may have accounted for the different findings.

Increased medical costs to patients who receive guideline-concordant care, is what has been found by Prins et al⁴¹, who studied the delivery of care within the larger naturalistic cohort of patients with depression and anxiety from the NESDA study, a small selection of which we matched with our intervention group. Delivery of care data were extracted from the Electronic Medical Records (EMRs) of the primary care practices and assessed with a set of quality indicators, derived from the guidelines of the Dutch College of General Practitioners (NHG), a different guideline than the one used during the QIC. Guideline concordant care, defined as patients having received psychological support or counseling or antidepressant medication or referral to a mental health specialist, was found to incur higher costs than non-guideline concordant care. The patients receiving guideline-concordant care received more primary care services, except for medication prescriptions and physiotherapist visits, and more consultations with a specialty care clinician.⁴⁰

Our study adds to the growing body of knowledge, mostly modeling studies based on assumptions, on implementing evidence-based interventions in mental health⁴²⁻⁴⁴, because it is one of the rare studies based on empirical data about implementation of guideline based interventions, although it did not employ a randomized design.

This pilot study carries a promising message for those who are driven by improving the quality of depression care. Internationally, a large majority of patients receives antidepressant medication by their PCP before psychological interventions are undertaken.^{30,45} In the Netherlands, a decline in prescribing has been measured from 76% in 2002 to 70% in 2008. This is considered a positive

trend, since it is believed that this high proportion of patients with antidepressant medication is not in accordance with the most recent multidisciplinary depression guidelines that recommend low-intensity treatments for patients with mild symptoms.³⁰ However, the effectiveness of stepped care for depression, including the delivery of low-intensity treatments, still needs to be fully confirmed.⁴⁶ In the mean time, to help PCPs seek alternative interventions in a cost-effective way for depressive patients who do not need medication, strategies such as the depression QIC might be of help but randomized replication studies are needed to confirm this.

Our study showed that, in line with the message of Mason et al³⁷, having to invest resources to change physicians behaviour imposes an additional, or loading factor, upon treatment cost-effectiveness. Larger health gains per patient, higher prevalence of disease, larger practice size or longer duration of behavioural change, all reduce the loading.³⁷ One could wonder who might have an incentive to invest in quality improvement programs for depression, if implementation costs are high and direct medical costs are only to rise as a result of better quality of care. As long as direct healthcare costs and indirect costs of sickness absence are treated separately by government budgets, it will be difficult to drive action.⁴⁴ In health systems where stakeholders, such as policy makers, healthcare insurance companies and employers, do have to make decisions on whether to invest in better depression care, estimated cost-effectiveness of a quality improvement program, as performed in this study, provides crucial information.⁴⁷ Before taking this policy cost-effectiveness decision, one should be aware that an initial investment to set up a QIC will only be attractive if a fairly large number of clinicians and patients are engaged and if cost-effective interventions leading to reduced production losses are being implemented. Moreover, both the clinicians' readiness to change as well as good data registration should be addressed before making the decision to invest in depression QIC.

Conclusion

From a societal perspective, depression QICs carry the promise to offer good value for money, but a sufficiently powered randomized clinical trial is needed to confirm this. Furthermore, the high costs of implementation need to be considered.

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Chapter 8

Bridging the science-to-service gap in schizophrenia care in the Netherlands: the Schizophrenia Quality Improvement Collaborative

D. van Duin
G. Franx
B. van Wijngaarden
M. van der Gaag
J. van Weeghel
C. Slooff
M. Wensing

Abstract

Objective: Many patients with schizophrenia are not treated in line with evidence-based guidelines. This study examined the large scale implementation of the national multidisciplinary guideline for schizophrenia in the Netherlands.

Design: Observational, prospective study with repeated measurement.

Setting: 30 Mental healthcare teams in different regions in the Netherlands.

Participants: 359 Clinicians with different professional backgrounds and 1489 patients suffering from schizophrenia.

Intervention(s): Six evidence-based interventions for schizophrenia were implemented, in the context of a Quality Improvement Collaborative (QIC). Assertive Community Treatment (ACT) or its adapted version Functional Assertive Community Treatment (FACT), Cognitive Behavioural Therapy (CBT), Psycho-Education (PE), Family Interventions (FI), Individual Placement Support (IPS), Pharmacotherapy (PHth).

Main outcome measure(s): Professional performance, symptom severity, social functioning and relapse rates.

Results: Improved professional performance, in line with guidelines. Availability of (Functional) Assertive Community Treatment improved from 23% to 60%, and of Individual Placement Support from 20% to 53%. Complete care plans were composed for 38% of the patients and routine outcome monitoring was introduced in most teams. Social functioning improved slightly (HoNOS mean: from 6.2 to 5.6) as well as symptom severity (CGI-S mean: from 4.1 to 3.9). Relapse rates did not improve during the course of the study.

Conclusions: An intensive implementation program can result in improved delivery of evidence-based care and continuity of care, and improved outcomes for individuals with schizophrenia. More rigorous research designs have to confirm these findings.

Introduction

The first Dutch evidence-based multidisciplinary guideline for Schizophrenia was published in 2005.¹ This guideline was developed by the organizations of patients, families and physicians. It incorporated recommendations concerning diagnosis and pharmacological, psychosocial and family interventions as well as effective community treatment approaches. An analysis of the gap between actual care and guideline recommendations, performed at the release of the guideline, reported a considerable 'science-to-service gap'.² Although best-practices were available in Dutch mental healthcare, patients generally did not receive the effective interventions, or not in a sufficient number of sessions and within an appropriate timeframe. Moreover, coordination of care appeared hard to come about.³ This finding was repeated in the first Quality Assessment of Regional Treatment Systems for Schizophrenia (QUARTS), a structured interview with stakeholders, showing that in 2005 an estimated 25%-50% of patients was offered care according to the guideline.⁴

There is a lack of knowledge about effective guideline implementation strategies in schizophrenia care.^{5,6} Quality Improvement Collaboratives (QICs) have induced better quality and outcomes of care in other settings.⁷ Over the last decade, this method for improving practice has been nationally promoted and funded by the Dutch government to bridge the gap between evidence-based and routine mental healthcare. In schizophrenia care this has led to the launch of two waves of a QIC, between February 2006 and April 2008.

The Schizophrenia QIC was designed by a team of experts, including experts by experience. It aimed at the achievement of two goals: a reduction of relapses and improved social functioning.⁸ Both goals strongly reflected the perspective of consumers and carers. Social functioning, in terms of having a job, a partner or friends, suitable housing and being able to participate in society, is of key importance in the lives of persons with schizophrenia. Although for many of them symptom reduction is not a goal as such, a reduction of relapses is essential because relapses make patients feel more isolated, and interfere negatively with functioning.^{9,10} In order to achieve these goals, a number of evidence-based interventions and best practices, derived from the guideline, were recommended by the expert team. In this paper the methods and results of the Schizophrenia QIC are described and suggestions for further implementation efforts in this field will be given.

Methods

Design

The design of the study was a cohort study, with repeated measures. Comparison to a reference group was not an option, since all schizophrenia teams in the Netherlands were invited to participate in the QIC and routine monitoring data from non-participating teams were not available.

Study population

The study population consisted of clinicians and the patients they treated. Clinicians were selected after a general call to all mental healthcare organizations. Criteria for selection were: being part of a multidisciplinary specialized team, motivation to improve care, active leadership support, a local team coordinator and payment of a participation fee. All patients were selected by the clinicians from their own caseload. Criteria for selection of patients were: having a chart diagnosis of schizophrenia and a need of continuous care.

Implementation strategy

The two consecutive waves of the quality improvement project followed the 'Breakthrough' Quality Improvement Collaborative method.^{11,12} This method has been applied in many countries for various clinical problems and generally has five essential features: (1) there is a focus on a specific aim, with gaps between best and current practice; (2) clinical experts provide recommendations and support for improvement; (3) multidisciplinary teams from multiple sites participate; (4) there is a model for improvement (setting targets, collecting data and testing changes); and (5) a quality improvement process is organized with a series of structured activities in a given time frame.^{7,11,13} The structured activities offered to the participants during the Schizophrenia QIC are listed in Table 1.

Table 1. Implementation strategies used during the Schizophrenia QICs

Professionals	<ul style="list-style-type: none"> • National expert team on Schizophrenia care and quality improvement • National network of multidisciplinary teams for exchange and learning • SMART goal setting and indicators to monitor results in excel (PDSA cycles) • Training on Breakthrough method and data collection • Four conference days for exchange and learning • Eight meetings between local team coordinators and expert team • Team visits and telephone contact by experts • Written feedback on three improvement reports and data charts • A virtual network environment for exchange of best-practices and online discussion • A Toolkit of protocols on evidence based interventions leading to fidelity
Patients	<ul style="list-style-type: none"> • Involvement of patient representatives in improvement teams, care teams • Quality of life measurement and feedback (optional) • A patient participation training • Two meetings for local patient representatives for exchange and learning
Organization	<ul style="list-style-type: none"> • Active management involvement • Include care plan into electronic patient record where possible • Conference day for local management • Workshops <i>Reducing waiting lists</i> and <i>Spreading and sustaining QI-results</i> • Uptake of new interventions in organizational policy and planning • Local newsletters and folders
Financial	<ul style="list-style-type: none"> • Structural funding of new interventions

The aims of the Schizophrenia QIC were implementation of one or more of the evidence-based interventions recommended in the guideline¹ and optimal continuity of care. The evidence-based interventions included: Assertive Community Treatment (ACT) or its adapted version Functional Assertive Community Treatment (FACT)¹⁴, Cognitive Behavioural Therapy (CBT), Psycho-Education (PE), Family Interventions (FI), Individual Placement Support (IPS), Pharmacotherapy (PHth). Optimal continuity of care was to be achieved by the introduction of comprehensive and up-to-date patient care plans, covering treatment, early warning signs and rehabilitation. This was based on the assumption that having a recent comprehensive care plan implies regular patient contact, and a proper assessment of patient's needs and goals.

Measures

To assess the impact of the QIC, outcome and process indicators were developed. Outcome indicators concerned relapse rates and level of social functioning. Process indicators concerned the degree of implementation of the evidence-based interventions, and the existence of a recent comprehensive care plan.

Data collection to calculate the degree of implementation of the evidence-based interventions consisted of repeated self-assessment surveys amongst the team coordinators (n=30). In the surveys, three levels of implementation were

distinguished: level 1, interventions are available; level 2, local protocols describing the proper procedures for the intervention have been developed; level 3, 70% or more of the patients receive care according to the protocol. The survey also contained questions to gather qualitative information on influencing factors and further results of the QIC.

To measure improvements in continuity of care, dates of completion of a recent comprehensive care plan were registered for each patient. A recent complete care plan should not be older than one year, and consist of: a treatment plan, a crisis plan and a rehabilitation plan.

Relapse data were collected with the Dutch version¹⁵ of the Clinical Global Impression (CGI) scale.¹⁶ This instrument was considered to be more informative than other measures used in literature, such as re-hospitalisation, because of its ability to capture serious deterioration experienced by the patient, without being (re)hospitalized. Since there is no general rule for cut-off points of the CGI for relapse, these cut-off points were selected at face-value by the expert team. Relapse was defined as a score of ≥ 5 on the 7-point Severity subscale of the CGI (CGI-S), combined with a score of ≥ 6 on the 7-point Improvement subscale of the CGI (CGI-I). Data for social functioning were collected with the corresponding subscale of the Dutch version of the Health of the Nation Outcome Scales (HoNOS).¹⁷ Both the CGI and the HoNOS are validated instruments and feasible to be implemented in daily practice.¹⁸⁻²⁰ Data were collected on a monthly basis by the clinicians and registered in a database, during 12-14 months. This difference in duration was caused by the context of the second QIC wave, which took part within a large improvement program, the National Action Plan Quality Mental Health and Addiction care.

Statistical analysis

All data were aggregated on a quarterly basis in a SPSS database for statistic analysis. Because these data involved repeated measures over time within patients, and as a consequence were likely to be correlated, the Generalized Estimation Equation (GEE) method^{18,20} was used to test for significance in the rate of change. The GEE method is a type of regression analysis of longitudinal data, specifically useful in multi-site cohort studies as it can handle many types of unmeasured dependence between outcomes.

Results

Eighty organizations were invited to participate in the QIC, 30 healthcare teams from 24 mental health organizations agreed to participate. Three organizations participated in both QIC waves. Participating teams came from all regions of the Netherlands. Most teams already functioned as a regular care team prior to the QIC, a few teams were composed for the occasion of the project. In total 359 clinicians participated in both projects: 40 psychiatrists/doctors, 21 psychologists, 167 case managers, 19 vocational therapists, 41 supported housing professionals, 48 managers, 9 experts by experience and 14 other clinicians.

A total of 1489 patients were included by the clinicians, with a range of 26 to 102 patients in each participating team. Of these patients, 367 were classified by the clinicians as chronic, unstable patients and 1122 as chronic patients with stable symptomatology. The mean age of the patient population was 41.3 years (with a range of 18-83 years). Outcome data from one improvement team were excluded from analysis, due to a short (crisis) treatment period of three months maximum.

Evidence-based interventions

The teams selected one to three evidence-based interventions to be implemented, according to their own priorities. (F)ACT was selected as a priority to be implemented by fifteen teams, PE by fourteen teams, IPS and FI both by eight teams, CBT and PHth both by five teams.

Table 2 shows the degree of implementation of the interventions, in the beginning and at the end of the QIC. Only half of the evidence-based interventions (CBT, PE, PHth) was available in most of the teams at the start of the QIC, and less than half of the teams could offer their patients (F)ACT, FI or IPS. At the end of the QIC, most teams had implemented all interventions (implementation level 1), and a majority of the teams had developed protocols for all interventions (implementation level 2), except for FI and IPS. Adherence to the protocols for at least 70% of the patients (implementation level 3) was reported by a minority of teams, except for pharmacotherapy (53% of the teams), although for all interventions the number of teams who routinely provided the care according to protocol improved over time.

The degree of level 1 implementation of (F)ACT and IPS improved most (respectively from 23% to 60% and from 20% to 53%), although both being marginally implemented at the start of the QIC and both remaining at a relative low implementation rate at the end. The largest level 2 improvement, having a protocol

for the specific intervention, was seen in PE (from 23% to 70%), although only 33% of the teams reached level 3 for this intervention. The intervention with the highest baseline scores on all three implementation levels but with the least increase at the end of the QIC was pharmacotherapy.

Table 2. Self-reports of teams on implementation of interventions (% of total)

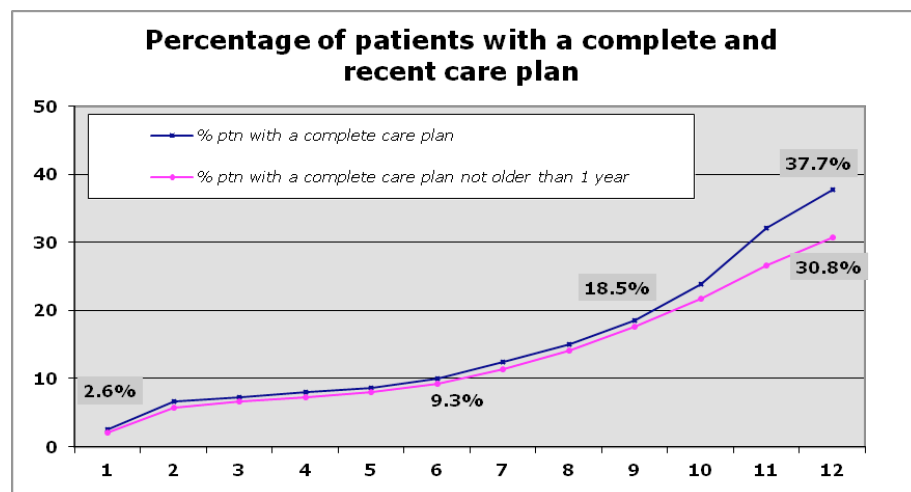
<i>Evidence-based (EB) Intervention</i>	Level 1 EB Intervention available in team		Level 2 Protocol present for EB intervention in team		Level 3 Adherence to protocol with >70% of patients	
	<i>Start QIC</i>	<i>End QIC</i>	<i>Start QIC</i>	<i>End QIC</i>	<i>Start QIC</i>	<i>End QIC</i>
(F)ACT	23%	60%	17%	53%	7%	40%
CBT	70%	83%	33%	60%	3%	10%
PE	70%	90%	23%	70%	7%	33%
FI	43%	60%	10%	27%	0%	10%
IPS	20%	53%	13%	40%	3%	10%
PHth	90%	93%	60%	70%	43%	53%

Bold > 50% of the teams reported a positive score on this item

Continuity of care

Complete and up-to-date care plans, including a treatment plan, crisis plan and rehabilitation plan, were hardly present at the start of the QIC. All teams worked on this aim. At the end of the QIC the overall percentage of patients having a complete and up-to-date care plan, had increased to more than 30% (See Figure 1).

Figure 1. Percentage of patients with a complete care plan not older than 1 year



Social functioning and relapse

During the QIC, teams learned to measure patient outcomes routinely, which was new for most of them. At the start of the QIC, CGI- and HoNOS scores were obtained from a quarter of the included patients (respectively 27.2% and 23.7% in the first month).

During the last month, when some teams were not able to update their excel file before final deadline, CGI- and HoNOS scores were obtained from half of the patients (45.3% and 51.5%). Over the course of the QIC, teams managed to obtain a monthly score on both the CGI and the HoNOS from 64.5% to 85.1% of the included patients.

Time series analysis (using the GEE method) pointed out that the HoNOS mean scores showed a decrease on the 7-point subscale 'Social functioning' from a mean of 6.2 in the first quarter of the QIC to a mean of 5.6 in the last quarter ($\beta=-0.20$; $p=0.000$), reflecting an improvement in social functioning. The percentage of patients with at least two points improvement on social functioning, increased from 8.5% to 54% of the patients ($\beta=0.65$; $p=0.000$).

Table 3. Functional health status and improvement in functional status in schizophrenia patients with outcome measuring, at different stages of the Schizophrenia QIC

	Social functioning		Relapse		
	<i>Mean Score Honos</i>	<i>% ptn with 2 point decrease (improvement)</i>	<i>Mean score CGI-S / % ≥ 5 CGI-S</i>	<i>Mean score CGI-I / % ≥ 6 CGI-I</i>	<i>% ptn with a relapse: ≥ 5 CGI-S <u>and</u> ≥ 6 CGI-I</i>
Quarter 1	6.2 (SD 3.3) (N=535)	8.5% (N=505)	4.1 (SD 1.3) 45.3% (N=949)	4.0 (SD 0.7) 4.8% (N=439)	4.3% (N= 439)
Quarter 2	6.0 (SD 3.3) (N=824)	31.3% (N=710)	4.0 (SD 1.3) 45.2% (N=1248)	4.0 (SD 0.7) 5.3% (N=788)	5.0% (N=788)
Quarter 3	5.7 (SD 3.3) (N=803)	47.0% (N=534)	3.9 (SD 1.3) 42.8% (N=1193)	4.0 (SD 0.6) 7.5% (N=723)	7.1% (N=723)
Quarter 4	5.6 (SD 3.3) (N=747)	54.0% (N=457)	3.9 (SD 1.3) 38.2% (N=1106)	4.0 (SD 0.7) 7.6% (N=656)	6.9% (N=656)
β (p)	-0.20* (0.000)	0.65* (0.000)	-0.09* (0.000) -0.12* (0.000)	-0.01 (0.242) 0.18* (0.014)	0.18* (0.018)

CGI-S Severity Subscale of the CGI

CGI-I Improvement Subscale of the CGI

β Regression coefficient: size and direction of change (using the GEE method)

* Sign. $p < 0.05$

Concerning relapse, mean scores of the Severity-subscale (CGI-S) showed a decrease from 4.1 to 3.9 ($\beta=-0.09$; $p=0.000$). Also, the proportion of patients with scores of 5 or higher on the Severity-subscale reduced from 45.3% to 38.2% ($\beta=-0.12$; $p=0.000$), reflecting a small reduction in symptom severity. Unfortunately, the Improvement-subscale (CGI-I) showed an increase in the percentage of patients with scores of 6 or higher from 4.8% to 7.6% ($\beta=0.18$; $p=0.014$), reflecting a deterioration of clinical status during that period. Relapse rates, defined as the proportion of patients with a score of 5 or higher on the CGI Severity-subscale combined with a score of 6 or higher on the CGI Improvement-subscale, showed an increase in the percentage of patients with a relapse from 4.3% to 6.9% ($\beta=0.18$; $p=0.018$) (See table 3).

Influencing factors and qualitative results

Factors facilitating the QIC, reported by the team coordinators ($n=30$) in the self-assessment survey, were support and interest of the institutional management, a capable local team coordinator, and a motivated and skilled multidisciplinary team of clinicians. Qualitative impacts of the QIC were: increased capacity to work systematically according to protocols while monitoring outcomes, improved knowledge of evidence-based practices and a sense of urgency to bring schizophrenia care to a higher quality standard. The QIC also improved team cohesion and collaboration within the organizations, due to better communication and to using the guideline as a common language for implementing evidence-based care.

Reported factors hindering the project were: a lack of dedicated time for participating clinicians and team coordinators to restructure care- and monitoring processes, and ongoing organizational changes at institutional level. Resistance to innovations amongst clinicians and patients were also mentioned as barriers for change. In relation to this, team coordinators reported that the timeframe of the QIC, 12-14 months, was too short for real changes.

Discussion

During the Schizophrenia QIC the standard of care provided by the 30 participating teams improved in terms of professional performance and patient outcomes. Most teams made all evidence-based interventions available for patients and developed protocols, except for FI and IPS. Self-reported adherence to the protocols increased, with some of the more frequently indicated interventions (FACT, PE, PHth) being offered routinely after the QIC. The degree

of implementation of (F)ACT and IPS improved the most. The overall percentage of patients having a complete and up-to-date care plan changed from almost 0% to more than 30%. Small clinical improvements were made in terms of social functioning and symptom severity. However, teams did not succeed in reducing relapse rates.

The improvements in quality of care, introduced by the QIC teams, are relevant for patients with schizophrenia, since effectiveness research into the implemented evidence-based interventions has shown positive results in terms of hospitalization, employment participation, relapse, adherence to therapy, social functioning, quality of life, coping with positive symptoms and somatic problems.¹⁹ In addition, progress in availability of up-to-date comprehensive care plans is essential within this setting of long-term care, and systematic monitoring of outcomes is believed to improve quality of care. Finally, the authors estimate the small improvements of the mean CGI and HoNOS scores as clinically relevant, considering the robustness of these variables. The deterioration on the improvement scale of the CGI is not easy to understand, but might be due to: a) registration difficulties with the CGI-I; b) a lack of training in proper use of the CGI; c) the choice of cut-off points; or d) a deterioration due to relapse.

There are several strengths and limitations to our study. A strength is that this study is one of the first documented, structured large scale implementation projects, with a participation rate of more than 20% of Dutch mental health organizations. Furthermore, we were able to analyze process as well as outcome data from a large number of patients in a naturalistic context. A first limitation is that data collection was performed by participating clinicians and partly based on self-reports. Secondly, no educational program was arranged for applying the evidence-based interventions. This might have caused practice variation and a delay in the improvement of professional performance. Finally, the duration of the QIC was about one year; teams might need more time to adapt to new methods and this duration might have been too short to measure a consistent change on robust indicators such as relapse rates.

The results of our study are in line with the literature on Quality Improvement Collaboratives, showing modest effects on clinical outcomes.^{7,21,22} Results are also partly consistent with results of the National Implementing Evidence-Based Practice Project, in which 53 American community health centres implemented 1 out of 5 evidence-based programs for severe mental illnesses. Preliminary results

after two years showed a high degree of fidelity in implementing the selected programs in 55% of participating sites.²³ The American project had a longer duration and offered slightly more extensive support to the sites.²⁴ Results on clinical improvements were not measured within this project.

The present study shows that, despite the positive changes in process and outcome measures, improving care for a substantial part of patients with schizophrenia is a long and complex process. Even though teams focused on the implementation process for 12-14 months and received a lot of support, they were not able to offer evidence-based care according to protocol to the majority of their patients within this timeframe. On the other hand, this study shows that a quality improvement program like the Schizophrenia QIC is feasible in the chronic mental healthcare setting and can lead to changes in the quality of care. An improvement model, based on the schizophrenia guideline, offering clinicians specific goals, instruments and support to engage in an improvement process, can help clinicians and healthcare organizations to foster evidence-based routines in schizophrenia care.

The results presented in this study can be helpful to inform others in improving care for patients with schizophrenia. Still, a lot of questions about implementing evidence-base care in this setting remain unanswered, and more rigorous research is needed to confirm our findings and understand factors hindering the uptake of the interventions, effective elements of the QIC method, and the cost-effectiveness of these large and intensive implementation programs, in order to inform policy and practice.

Conclusions

Implementing evidence-based care with positive outcomes is possible in the care for patients with schizophrenia, although it needs intensive and continuous support during an extensive time. Although the Schizophrenia QIC changed healthcare practices, controlled follow up research is necessary to evaluate which method generates long-term improved healthcare practices compared with control conditions and at what costs and benefits.

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Chapter 9

Discussion

General discussion

In this final chapter we summarize and discuss the main findings of this thesis in relation to our overall theme: improving mental healthcare by transferring knowledge into practice. We present some overall methodological considerations and discuss our findings in the context of the existing literature. Finally, we conclude with a number of implications for research and practice.

Key findings Part I: strategies for quality improvement in mental healthcare

Two types of implementation strategies, believed to have the potential to transfer knowledge into practice, were discussed in part one of this thesis: clinical guidelines and organizational strategies.

Guidelines have become evidence-based and accepted but bottlenecks remain

Between 1999 and 2009, a large national guideline program in mental health resulted in 13 multidisciplinary guidelines and in a set of related deliverables, such as consumer versions, checklists and implementation materials. Bottlenecks in guideline development concerned: 1. the method of evidence-based guideline development; 2. the participation of users and carers and 3. the dissemination of the multidisciplinary guidelines.

During the last decade the internationally accepted method of evidence-based guideline development was introduced among almost 30 professional organizations and a range of service user organizations in Dutch mental health. Lessons learned included that guideline development needs to be a transparent and evidence-based process, with nationally organized topic selection, a clear division of tasks between participating professionals and a supportive 'technical team' and a rigorous process management in order to prevent delays and mismatches of expectations.

Although different methods of consumer participation were used, full integration of the service users' perspective into the guidelines often remained unsatisfying and final versions of guidelines were unfit to be of use to individual patients. Bottlenecks were the dominant medical perspective and the lack of a structured process and systematic approach to participation.

Actual use of the multidisciplinary guidelines has been limited so far, although psychiatrists have become more familiar with their content than other disciplines. The disorder based guideline recommendations did not seem to fit easily in the professional paradigms and working methods of allied health professionals. Apart from this other barriers to implementation were the narrow medical focus of

guidelines, the limited evidence base (the randomized controlled trial being the golden standard design used by guideline working groups), the lack of recommendations for problems encountered in daily practice, the poor integration of the different multidisciplinary perspectives (including those of patients) and last but not least the volume and format of the published guidelines, both unattractive for daily use.

Some organizational strategies are evidence-based, but good implementation research is still scarce

In severe mental illness care, organizational strategies and models to improve the quality of care, such as assertive community treatment, supported employment and community mental health teams, have been found to improve patient outcomes. Intermediate measures of professional and organizational performance are much less studied. From an implementation perspective this lack of information on performance measures limits the lessons to be learned from these studies.

High-level studies and systematic reviews into the impact of other popular improvement strategies, such as the revision of professional roles or the use of information technology or performance measurement, are lacking although in practice much is expected of their ability to improve the quality of severe mental illness care.

Key findings Part II: the impact of the quality improvement collaborative on improving mental health

QICs can support the transfer of knowledge into mental health practice

Quality improvement in mental healthcare, in terms of professional and organizational performance in accordance with guidelines, can be enhanced in both primary and secondary care with the aid of QICs. Our QIC studies showed improved delivery of evidence-based care both in primary care as in specialty care. Some outcome indicators improved as well in both QICs, but their interpretation is unclear.

Antidepressant prescribing behaviour can be changed within a QIC context

The quasi-experimental evaluation study showed that the depression QIC was effective in terms of changing the antidepressant prescribing behaviour of PCPs over the course of three years, compared to controls that did not change overtime.

Care delivered by practices participating in the depression QIC might be more cost-effective than usual care

The cost-effectiveness analysis, although underpowered and suffering from selection bias, suggested that care according to the depression QIC did not generate better rates of recovery compared to usual care but was more cost-effective from a societal perspective. Although direct medical costs were higher in the practices that implemented guideline recommendations, productivity losses were lower than the usual care patients.

Stepped care for depression can be introduced amongst PCPs and change existing routines

In our qualitative study clinicians reported practice changes in terms of better differentiation between patient groups, reduced antidepressant prescribing as a consequence of having a broader treatment package to offer, and better working relationships with patients and colleagues. Successful elements of the depression QIC were the pragmatic stepped care model itself, their motivation to implement low intensity interventions, the structured team meetings and clear goal setting (part of the QIC method), and the positive reaction from patients to stepped care including outcome monitoring. Routine monitoring of depression symptoms was difficult to organize due to a lack of clinician pro-activeness, administrative support, information technology and compliance of the patient.

In implementation projects, attention needs to be paid to the concept of depression and depression care

An important driver for change in the multidisciplinary primary care setting, although time consuming, was the process of creating a shared understanding of what constitutes depression and reaching consensus about the content of depression care and the division of tasks.

Methodological considerations

The overall finding of this thesis, that QICs can enhance the quality of care in mental healthcare by enhancing the implementation of guideline recommendations, has to be submitted to some methodological considerations, since the different designs all had their limitations, which have influenced the robustness of our findings.

The most fundamental limitation overall was the lack of a randomization procedure in any of our studies, as it is frequently seen in studies of systemic change.¹ Both our effectiveness study and the cost-effectiveness study consisted of a before–after comparison between two non-equivalent groups of clinicians and patients. In the evaluation of both the depression and the schizophrenia QIC, the gold standard of the randomized clinical trial was not applicable in the naturalistic context of clinicians volunteering to make an implementation effort and not to be part of a control condition. This fact, that clinicians were highly motivated to participate in the QIC, but to a much lesser extent to make an additional research contribution, has also impacted on the inclusion of patients and the data gathering during the study. These limitations might have introduced different types of bias, such as confounding bias, in terms of other factors than the QIC causing the observed changes, not having been equally present in both groups. Selection bias, caused by the fact that the QICs worked with highly motivated clinicians who had volunteered to participate in a quality improvement program, limits the generalizability of the positive findings to all mental healthcare workers in the country or beyond. Outside the QIC context, implementing guidelines might be a different process.

Despite these limitations, our studies generated valuable information to the emerging science of quality and safety in mental healthcare. First, the QIC studies confirmed what is known in general health, that the QIC method can enhance change in professional and organizational performance. Moreover, we showed that QICs can serve as vehicles to implement mental health guidelines in different settings. Second, our results have provided answers to research questions considered crucial in this field,² such as how to present new evidence to professionals and how to guide and support them towards scientifically correct practice. Third, our studies also generated insight into important determinants for successful implementation in mental healthcare that need to be addressed in future programs. An example of these determinants is a shared understanding and

shared language amongst professionals with different backgrounds about the nature of disorders such as depression. Finally, this thesis generated new research questions, to be addressed in the last paragraph.

Discussion of key findings of Part I: strategies for improving mental healthcare

Towards high standard guideline development methods

Guidelines have become key strategies to many stakeholders to improve the quality of care for patients with mental health conditions. At the start, guidelines were considered instruments for clinicians and their patients to support clinical decision making. Over the last years other stakeholders have become interested in using guidelines for purposes of policy making, commissioning, accountability and jurisdiction. With this growing influence of guidelines, the need for good and transparent guideline development methods becomes crucial. If guidelines contain systematic bias, the effects will be widespread.³

Internationally, high quality standards of guideline developments have been developed and shared. The Guideline International Network (GIN), a network of guideline developers from 46 countries, defined a set of key components for guideline development in order to ensure that all guidelines meet basic criteria.⁴ These components address working group composition, decision-making process, conflicts of interest, guideline objective, development methods, evidence review, basis of recommendations, ratings of evidence and recommendations, guideline review, updating processes and funding. Another relatively new innovation in this respect is the widespread introduction of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology, an approach which 'enables more consistent judgments, and communication of such judgments can support better informed choices in health care'.^{5,p.1} The GRADE working group has presented a systematic and explicit approach to making judgments about the quality of evidence and the strength of a guideline recommendation.

Despite these developments, the National Collaborating Centre for Mental Health (NCCMH) for the National Institute for Health and Clinical Excellence (NICE), probably the most comprehensive and methodologically advanced mental health guideline program in the world, has recognized imperfections and patterns of bias in the way that evidence is generated and included in guidelines. According to some, the pharmaceutical industry remains a major source of bias through selective reporting and publishing, and represents a threat to ensuring the evidence underpinning guidelines and clinical decision-making is as complete and

reliable as possible.³ Another concern is that guidelines, although developed in a rigorous way, still may not have the desired impact if they are not integrated with other quality improvement initiatives such as performance measurement and quality improvement programs.⁶

Service user involvement is expected to enhance the implementation of guidelines

One of the innovations in guideline development, believed to enhance the uptake of guidelines, is the creation of a bigger role for service users and carers in the development process. The assumption is that, if guidelines provide recommendations that reflect the users perspective, clinicians will be more motivated to use guidelines. For example, in the depression QIC showed BDI measurement was hard to implement and it was only after positive reactions of patients that clinicians managed to do so.

According to Sackett et al.⁷ evidence-based medicine is not restricted to randomized trials and meta-analyses but it involves tracking down the best external evidence with which to answer our clinical questions. Patients may have very different perspectives on healthcare processes, priorities and outcomes from those of health professionals. Empowered patients want to take control of their conditions and therapy, and thus are crucial to the development of treatment guidelines.⁸ Some argue that good user involvement in guidelines, in terms of the integration of the clinical expertise with the best available research evidence and patient values, is so hard to achieve that it should be reconsidered.⁹ Still, we believe that it is possible to give health care users more influence on the guideline topics, on the selection of relevant outcomes of care and on the actual draft of the recommendations. This might lead to different questions to be answered by the guideline and different types of research being assessed. An example of such a guideline is the recently published guideline on service users' experience of adult mental health services, for which a development group was chaired by a service user jointly with a healthcare professional.¹⁰

The inclusion of service users in mental health guidelines will in the near future be an important focus for high-quality guidelines which are becoming increasingly person-centred. Unfortunately there is a paucity of research into the conditions under which patient and public involvement is most likely to be effective.¹¹ According to Harding et al.¹² progress in three main areas of guideline development and service user involvement should be aimed for during the coming years: (1) translating evidence into recommendation; (2) optimizing the

acceptability of recommendations; and (3) reconciling different types of knowledge. As Kendall et al.³ say:

The future role of service users in monitoring their own experience of care and ensuring that trusts are accountable to them is now a real possibility and is likely to have an impact upon the traditional power relations in mental health and the stigma usually associated with psychiatric problems.

Removing barriers for guideline implementation in mental health

Implementation of guidelines for mental health, high on the policy agendas to speed up improvement, remains a challenge across the world. In mental health, one could argue, the challenge is even bigger than in general health. One of the more fundamental reasons is that underlying concepts of illness and illness management are not clearly presented, defined, studied and shared amongst professionals and patients. Due to this, the mental health guidelines themselves may not contain unambiguous recommendations, which hampers their implementability.

Recently a guideline implementability framework was developed and tested, including 22 elements in the domains of adaptability, usability, validity, applicability, communicability, accommodation, implementation, and evaluation.¹³ It appeared that current guidelines hardly contain features that could improve guideline use, such as alternate versions for different users and purposes, summaries of evidence and recommendations, information to facilitate interaction with and involvement of patients, details of resource implications, and instructions on how to locally promote and monitor guideline use. Using this framework, future guideline products in mental health might become more appealing to users.

Another barrier for the implementation of guidelines to practice is the fact that especially in depression care, different guidelines for the same topic exist and contrasting sets of quality criteria or quality indicators have been derived from them, possibly leading to confusing messages to policy and practice. In the Netherlands, this was illustrated by a publication of Piek et al.¹⁴ entitled 'most antidepressant medication in primary care is justified', referring to good quality of care for depression in the Netherlands. This publication has received a lot of attention from the media and from clinicians since its message was in contradiction with recent policies and the opinion of many leading psychiatrists, scientists and policy makers who believed that inappropriate overuse of antidepressant

medication in primary care should be reduced¹⁵. In their discussion the authors admit that their positive conclusion is based on relatively loose indications for prescribing derived from the monodisciplinary depression guideline of the Dutch College of General Practitioners (NHG). If they would have applied criteria based on the more conservative and overarching multidisciplinary guideline developed by a range of professional organizations in primary and secondary care, they would probably have drawn a different conclusion. It seems to us that this variety of guidelines, leading to contrasting criteria for quality assessment, does not improve the uptake of evidence by clinicians.

A next barrier to guideline implementation is related to the current perspective on implementation, and the top down approaches of implementation programs.

Some people, like Hutschemaekers,¹⁶ argue that the impact of implementing guidelines so far is disappointing. Even with thoroughly designed implementation programs, an absolute change of about 10% on aspects of professional performance on average can be expected.¹⁷ In Hutschemaekers'¹⁶ point of view, the gap between research and practice can only be bridged when both sides are considered mutually complementary. He claims that it is not appropriate to consider science superior to practice and to suggest that clinicians should passively apply the lists of interventions coming from research and guideline development groups. Simple translation for a range of interventions recommended in guidelines will not result in the expected outcomes shown in the original studies due to complex influencing factors. According to Hutschemaekers¹⁶ clinicians need to adapt guideline recommendations to individual patients using their clinical experience and involving patients' preferences.¹⁸ Hutschemaekers¹⁸ proposes the model of the scientist-physician as a solution to bridging the two different worlds of science and practice, being a clinician who acknowledges the value of both clinical experience and scientific knowledge. It would indeed be interesting to study the impact of this approach on clinical processes and outcomes of mental healthcare.

In a more recent Dutch guideline implementation program using tailor-made and multifaceted implementation strategies, significantly improved adherence rates to the Dutch multidisciplinary guidelines for anxiety disorders in the community mental healthcare centre were measured, with greater symptom reduction, higher satisfaction rates and no differences with respect to changes in impairment of functioning and quality of life compared to patients who were not treated according to guidelines.¹⁹ These types of guideline implementation programs are promising,

worth spreading to other organizations and might need additional research into effective program components and longterm success.

Applying effective organizational strategies to improve mental healthcare

We found that, in severe mental illness, there is a fairly large body of evidence based on systematic reviews on the impact of multidisciplinary teams and integrated care on patient outcomes such as symptom severity, functioning, employment, and housing. Other strategies, such as changes in professional roles, quality or knowledge management, have either not been the subject of systematic reviews or have not been evaluated in randomized controlled trials (RCTs).

The Cochrane's Effective Practice and Organization of Care group (EPOC) has so far published 38 systematic reviews on organizational interventions, most of which are structural interventions such as changes in settings of service delivery or provider directed interventions, such as skill mix changes.²⁰ The only EPOC review concerning skill mix changes in mental health provides some modest evidence that mental health workers working in primary care to deliver psychological therapy and psychosocial interventions can change the PCP's behaviour in terms of reduced consultations, prescribing, and referrals to specialist care.²¹ This is in line with the review of Gilbody et al.²² who concluded that, in primary care for depression, effective improvement strategies will require substantial organizational change in terms of enhancement of the role of nurses and greater integration with secondary care.

This change of skill mix is what currently happens in primary care in the Netherlands and other countries, where care management models such as stepped care and collaborative care are about to be introduced on a large scale for patients with common mental disorders. Care managers, specialized nurses and primary care psychologists are gradually playing an important role in managing depression. Also, many interventions have been developed and researched to train patient self-management skills, with the aim to empower patients in enhancing their own health. In organizing effective mental health programs in which doctors, nurses and patients collaborate effectively, a major system barrier seems to be that Dutch primary care is not yet seen and organized to manage chronic mental conditions. This is unlike the American perspective which stresses that disease management strategies for depression require a longitudinal perspective with systematic monitoring, application of evidence-based models, and active patient engagement^{23–25} In the Netherlands, depression management is still

predominantly organized in line with the principles for treating acute conditions, in contrast to the care for diabetes, where PCPs do follow the principles of the chronic care model. This could change in the future, with the introduction of new care models based on disease management principles, such as the stepped care model and the collaborative care model but also when quality improvement instruments such as routine outcome monitoring and patient self management are being implemented.

Discussion of key findings of Part II: the QIC as a strategy for improving mental healthcare

QIC effectiveness in mental health is in line with other settings

Our QIC studies were based on the assumption that guidelines, summarizing the best available evidence, can be translated to goals and instructions relevant to daily practice and, with intensive guidance and support for over a year, could help improve professional performance of clinicians treating patients with mental health problems. Our overall finding, that QICs can serve to implement guidelines and enhance the quality of care in mental healthcare, supports this assumption. This is in line with the emerging evidence underlying QICs in different settings, which suggest that, overall, the impact of QICs are moderately positive on a selection of the parameters, whereas the only randomized controlled trial published on QICs did not show a significant result.²⁶

Opening the black-box of the QICs

Our qualitative work provided insight into the 'black box' of the depression QIC and the determinants of success. According to Schouten²⁶ who performed most studies in the general medical setting, collaboratives might be most successful in improvement settings where a team approach is required and in order to enhance change incentives will have to be build into team and organizational processes. Other determinants of success, apart from team functioning, were organizational preparation and alignment, senior management support and interaction with peers.²⁶

These factors may have been present in the mental health QICs as well. In the depression QIC primary care physicians were encouraged to change their prescribing behaviour by making more use of psychological interventions as alternatives to medication. Multidisciplinary teams, non-existent before the start of the QIC, implemented these new, low intensity interventions. From the qualitative data of the depression QIC we know that, for some clinicians the positive

experience with these less intensive, more 'empowering' interventions, delivered in collaboration with the nurses or psychologists from the QIC team, was an incentive for change. In the schizophrenia QIC, these team processes were already existent prior to the start of the QIC.

Smolders et al.²⁷ reported that adherence to depression guidelines is related to a stronger confidence of PCPs in depression identification, which was enhanced during the depression QIC according to the clinicians. In addition, perceived time limitations, known to be associated with a decrease of delivering appropriate non-pharmacological care²⁷ might have been removed during the QIC, due to the support that the PCPs received from the mental health workers.

In addition to these factors our studies identified other barriers to implementation processes in primary depression care. A first crucial factor was the creation of a shared understanding of the concept of depression and depression care and a consensus amongst different PCPs on a shared set of tasks, from the start of the process. A second, almost decisive factor for successful implementation of change, was the uptake of depression process and outcome indicators in the EMRs of PCPs. Without feedback information depression care can not be properly improved. Here, there is still a lot to gain in the Netherlands. The last factor that needs attention in stepped care implementation programs is the risk of undertreatment of patients with severe or long term depression, when everybody's focus is on implementing low intensity interventions for mild cases.

Investing in QICs .. making the business case first

Little is known about the costs of interventions to improve the quality of care. Further, the costs and effectiveness of these interventions are likely to be context-specific and depending on the culture of the setting and other variables.²⁸ QICs are time consuming interventions and do not come for free. Our cost-effectiveness study of the depression QIC estimated the overall initial time costs of the clinicians plus the organization of the QIC on a national level, to be over €1 million. Economies of scale can be obtained if nationally or regionally organized QIC reach a large number of primary care practices and mental health organizations and if the clinicians involved in QICs offer the new approaches to a large number of their patients. Since patient identification of depression in primary care is not optimal in the Netherlands,¹⁵ project managers and funding bodies should make their business cases before investing in QICs, and assess costs, returns on investments and the stakeholders who will actually cash the profits. If important funding bodies such as health insurance companies in the Netherlands invest in

direct healthcare costs and improvement strategies without profiting or increased productivity gains, it will be difficult to drive action.²⁹

Patient differentiation and non-pharmacological treatments in mild cases more explicitly recommended in depression guidelines in primary care

In four studies we looked at the impact of the QIC method in primary care for depression. The most solid result was generated by the controlled before-after study, showing a substantial reduction in antidepressant prescribing by PCPs as a first treatment step to patients with a new or first episode of depression compared to the control group, who did not change overtime. Clinical outcomes could not be measured.

Whether the reduced prescription rates pointed to a more stepped care approach and better clinical outcomes is not clear, since those data could not be extracted from the Electronic Medical Records (EMRs). Still, we are inclined to consider the changed prescribing behaviour of the QIC clinicians to be more in line with guideline recommendations to PCPs to refrain from antidepressant prescribing in patients with mild or moderate depression.³⁰

This reluctant attitude towards antidepressant medication has been made more explicit in the latest version of the monodisciplinary guideline for PCPs, published in 2012 and recommending antidepressants as initial treatment only to patients with a severe depression.³¹ This new guidance for primary care also seems to have adopted the stepped care principles, which can be concluded from the comment that:

Depressive symptoms are included (in the guideline, GF) in addition to depression because primary care physicians see more patients with depressive symptoms than patients with depression, and doctors need diagnostic and therapeutic advice about these patients. Moreover, there is increasing evidence that the non-pharmacological treatment of depressive symptoms by PCPs is effective.³¹

Stepped care for depression: easy to recommend, hard to implement

Stepped care for depression was the central focus of the depression QIC and the majority of our studies. Although the model is recommended in the most recent guidelines in the Netherlands, the existing evidence for its effectiveness is still limited and diffuse, partly due to the methodological problems related to studying this approach. Also, current guidelines lack clarity on the exact content of a

stepped care model for different depressed populations. As a consequence, different interpretations of stepped care models for depression exist, some focusing on patients with mild symptoms,³² some on stepped-collaborative care for patients with moderate depression³³ and some on stepped care models for patients with depression and anxiety.³⁴

In the United Kingdom (UK) stepped care was one of the fundamental principles underpinning a nationwide stepped care implementation program to introduce evidence-based psychological treatments for common mental health disorders.³⁵ The difficulties encountered underway this Improving Access to Psychological Therapies program (IATP) led Richards to conclude that 'stepped care is considerably simpler in conception than application'.^{35,p.212} Evaluation data showed high levels of implementation diversity and low rates of less than 10% of stepping up from low-intensity treatment to more intensive treatment.³⁶ The program has generated several lessons for implementation to be addressed when stepped care is spread on a large scale.³⁵ Some of these lessons overlap with the key findings in this thesis, such as the conclusion that case managers can play an important role in the delivery of the lower level evidence-based psychological treatments provided that they receive competency-based skills training to implement guideline-approved psychological treatments and to replicate the protocolized treatments. Another lesson learned in the UK is the critical role of 'smart' information technology as a facilitator for managing high volumes of patients and to collect routine outcome measures.³⁵ Despite this, the IATP is considered to be very successful, although a range of implementation issues such as the large attrition levels or the influence of professional background on patient flow, urge for more in-depth implementation research into stepped care.³⁶

Implications for practice and research

Towards 'living guidelines'

Representatives of the Dutch Ministry of Health, Welfare and Sport and patient and professional organizations, health insurance companies and healthcare providers organizations have recently come to an agreement to work together in making mental healthcare efficient and of high quality. Crucial elements of the agreement are 'having one language for the quality of care and making outcomes of care in terms of price and quality, comparable'.³⁷ In order to reach these quality goals, multidisciplinary guidelines will become the backbone of an ambitious quality improvement program for 2013–2014. The context of this agreement, and the promise of the government to facilitate the quality program, creates a

momentum to integrate guidelines with other quality improvement initiatives in mental health such as routine outcome measurement (ROM), care pathways and care standards. This can be done by revising the existing guidelines in such a way that they are of high methodological quality, acceptable and implementable for patients and a range of professional groups, linked to multi-level quality and performance indicators, translated to local care pathways and to solid data registration systems. The purpose should be to develop a new generation of guidelines that is based on thoroughly assessed scientific evidence and to which knowledge is added generated through practice data collection. In the coming decade, hopefully good practice data on processes and outcomes of care, including patient experience, will become available in specialty and primary care. The challenge will be to use these data for purposes of local quality improvement and to aggregate them nationally in a reliable way for guideline development purposes. Guidelines can then contain, in addition to scientific recommendations, additional information about the organization of effective treatments that is directly linked to daily practice. This new generation of guidelines can then be truly called 'living guidelines.'

Towards continuous quality improvement

Integrated guidelines can only become 'living' and make an impact if clinicians use them for quality improvement purposes. This means that quality improvement work has to be initiated on a continuous basis. A prerequisite for this seems to be that clinicians and their professional bodies will take the lead in the quality improvement movement. Apart from developing guidelines and implementing evidence-based interventions, clinicians should take the challenge of monitoring their processes of care and the generated outcomes, reflect on them and learn. Just as Batalden et al.^{38,p.2} promoted that 'healthcare will not realize its full potential unless change making becomes an intrinsic part of everyone's job, every day, in all parts of the system'. Creating such a positive culture and climate of change in mental healthcare requires strategic, well-planned and evidence-based implementation strategies. Elements of the QIC method, that could be of use in local change projects are target setting, creating a shared understanding and engagement amongst clinicians, continuous monitoring, supportive materials and feedback and guidance of experts and management. In addition, financing and accountability systems, information technology and monitoring systems, education, the appropriate work force and capacity and effective organizational models of care are all needed to drive quality improvement.³⁶

Fortunately, many current practice initiatives in the Netherlands are pointing in this direction. In primary care, health insurance companies are starting to work with local primary care groups to implement integrated stepped (collaborative) care depression programs. These include the stepped care organization of effective interventions for prevention, self-help and management of depressed feelings and diagnosed depression. The new discipline of 'practice assistant in mental health (POH GGZ)' is introduced on a large scale, being responsible for large parts of the care and the monitoring of outcomes. Effective e-mental health interventions are slowly finding their way to these practices, holding the promise to contributing to increased capacity building in primary care and to the desired shift of patient flow from expensive secondary care to primary care.

Eventually, in a few years time, effective management of mental health problems needs to be regionally organized, with the healthcare insurance companies and the municipalities in the lead, in line with the recommendations of Unützer and Park,²⁵ directed at depression care. These include the adoption of a:

systematic, population-based approach, which entails systematic case finding and diagnosis, patient engagement and education, use of evidence-based treatments, close follow-up to ensure patients are improving, and a commitment to adjust treatments or consult with other disciplines until patients are significantly improved.^{25,p.415}

As for depression care programs will be needed in which primary care providers and mental health specialists collaborate effectively, applying the stepped care principles in order to substantially improve patients' health and functioning while reducing overall healthcare costs.²⁵

Towards a shared research agenda for quality improvement in mental health

A national research agenda into stepped care models for depression will be important in the coming years in order to align scientific efforts and allocation of research funding. Many different and local stepped care or stepped collaborative care models are implemented and studied in the Netherlands, but their contribution to the overall body of evidence body is unclear. Rigorous and large trials appear difficult to perform because of the numerous methodological issues involved, the difficulties with the inclusion of patients and an increasing lack of

good control groups. It is important that leading researchers engage in a national research agenda in order to collectively generate the answers to the research questions in relation to stepped care. These answers could then be fed back to new revisions of the depression guidelines.

According to Grol et al.² the research field on quality and safety in healthcare, including guideline implementation studies, is not yet fully developed. Evidence is lacking to support decisions about which guideline dissemination and implementation strategies are likely to be efficient under different circumstances, but getting this evidence is essential to inform policy and practice and to know if expensive quality improvement programs yield value for money.^{2,39}

The policy developments described above might generate an unprecedented opportunity to create a high-performance mental health system in the Netherlands. As for the implementation research agenda in Dutch mental health, it should generate information on the process and impact of the quality program initiated in the context of the stakeholders' agreement. Research questions could refer to the implementability of the revised guidelines, or the impact of linking guidelines to performance-based quality improvement, or to the methods of incorporation of practice data into evidence-based guidelines. This research agenda will need a strong, multidisciplinary research program and team in which the limited resources for implementation research are spent in the best possible way.

Guiding policy makers in decisions about the allocation of research funds is also a responsibility of the research community. It is crucial to convince policy makers of the fact that investing in mental health is good value for money, since it contributes to economic prosperity and to the sustainability of the healthcare system. A recent and powerful report of the London School of Economics in the United Kingdom⁴⁰ can serve as a strong example of what the research community can do to lobby for quality improvement. The report has alerted commissioners to think again about planned cuts on mental health by stating that 'there is a massive inequality within the National Health Service (NHS): the way it treats mental illness as compared with physical illness'^{40,p.1} and that investing in mental health by promoting effective early interventions and psychological treatments, training of PCPs and the uptake of specific quality targets in the NHS outcomes framework will result in savings that outweigh the costs.⁴⁰

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Summary

Chapter 1: Introduction

This thesis is about improving the quality of healthcare for patients with mental health problems, in particular depression and schizophrenia, by implementing knowledge in clinical practice. Implementation is important because one of the most critical issues in mental health services today is the gap between what is known about effective treatment and what is provided to and experienced by consumers in routine care. In primary care, about 21% of the patients suffer from depressive symptoms and only 42% of them are treated in accordance with guidelines. In schizophrenia care an estimated 25–50% of patients receive guideline-concordant care.

In the last decades different strategies have been developed in healthcare to implement knowledge in daily practice and improve the quality of care. In this thesis we examined to what extent some of these ‘implementation strategies’ used in general medical healthcare, can improve the quality of care for patients in the mental healthcare setting. Implementation strategies are ‘targeted activities to realize the introduction of a specific method or product or to enhance a specific change’. In the healthcare sector, these activities can target clinicians (for example education, audits), organizations (for example skill-mix changes), patients (for example co-payments, information leaflets) or regulations (for example health insurance policies, legislation).

The studies presented here concentrate on three different but related strategies targeting clinicians and organizations:

- 1) Clinical practice guidelines as strategies to inform clinicians and make recommendations about effective treatments;
- 2) Organizational strategies to organize these treatments in daily practice;
- 3) The Quality Improvement Collaborative (QIC), a ‘multifaceted’ strategy, combining both organizational and professional directed strategies.

The first two strategies are the subject of part I of the thesis, whereas part II entirely focuses on the QIC strategy.

Part I

Strategies for quality improvement in mental healthcare

Two types of implementation strategies were presented in part one: clinical practice guidelines (guidelines) and organizational strategies. Guidelines make recommendations to clinicians and patients, based on scientific evidence, clinical expertise and the expertise of healthcare users. The rationale for developing guidelines is their expected contribution to ‘evidence-based’ practice, in which

decisions are supported by scientific information, and thus lead to better quality of care, and healthier patients and societies. Organizational implementation strategies are interventions that involve a change in the service delivery of health care. This change can involve who delivers health care (a doctor or a nurse), how care is organized (in multidisciplinary teams or by a single clinician, face-to-face or online) or where care is delivered (in the hospital or at home).

In **chapter 2** we gave an overview of the activities in the last decade concerning the development of the multidisciplinary mental health guidelines in the Netherlands, developed to be used by multiple disciplines working in mental health. We based our information on the Dutch literature and documents.

Between 1999 and 2009, thirteen multidisciplinary guidelines and a set of related deliverables, such as consumer versions, checklists and implementation materials were published in the Netherlands. The method of evidence-based guideline development, according to Offringa a method that 'makes conscientious, explicit and judicious use of the existing proof', was introduced among almost 30 professional organizations and a range of service user organizations. Although different methods of consumer participation were used, full integration of the service users' perspective into the guidelines remained unsatisfying.

Dissemination of the national multidisciplinary guidelines in terms of clinicians being aware of them has occurred, but actual use of the multidisciplinary guidelines has been limited so far, although psychiatrists have become familiar with the content and use of the guidelines.

Although guidelines did become a key quality instrument of professional and service user organizations, different criticisms have been expressed. One of them was related to the disorder based focus of guidelines, which did not seem to fit easily in the professional paradigms and working methods of non-medical professionals. Other criticisms were related to the limited evidence base of guidelines (the randomized controlled trial being the most dominant research design), the lack of recommendations for problems encountered in daily practice, the poor integration of the different perspectives (including those of patients) and their volume and format, both unattractive for daily use.

Based on this overview we recommended a stronger focus on the adaptation of coming guidelines to the information needs of all user groups, and on their implementation in terms of making professionals, service users and managers more sensitive and skilled to using evidence in daily decision making.

Chapter 3 contains an overview of the scientific literature concerning another implementation strategy, organizational strategies and models to improve the quality of care. For this study a search of systematic literature reviews was performed in PubMed, PsycINFO, CINAHL, EMBASE and the Cochrane Central Register of Systematic Reviews. Three reviewers independently selected and assessed the studies' quality. We categorized the studies using an existing taxonomy of six broad categories of strategies for organizational change. A total of 21 reviews were included. Among these seventeen had reasonably good methodological quality. Almost all reviews included or intended to include randomized controlled trials (RCTs), six reviews did not identify studies that met eligibility criteria.

Studies into the effectiveness of multidisciplinary teams and integrated care models had been reviewed most frequently (a total of fifteen reviews). Other types of organizational changes, such as changing professional roles and the use of electronic decision support, were much less the topic of systematic reviews. This is surprising since these strategies have been encouraged strongly by policy makers.

In most studies, the organizational changes led to better outcomes in terms of symptom severity, functioning, employment and housing, compared with conventional services. Unfortunately, very few reviews looked at effects of organizational changes on intermediate measures of professional performance (for instance the number of times a certain treatment was given). We argued that from an implementation perspective this lack of information on performance measures limits the lessons to be learned from these studies and to provide guidance on how to implement a specific organizational model in daily care.

Part II

The impact of the Quality Improvement Collaborative on the quality of mental healthcare

In part two we presented several studies on the impact of two QIC programs, organized in Dutch mental healthcare from 2006-2008 on the quality of care for patients with depression and schizophrenia. The quality of care was defined in terms of key recommendations of the first multidisciplinary guidelines for these conditions, both published in 2005. QICs had become very popular in the Netherlands over the last decade and from the 1990's the Ministry of Health, Welfare and Sports invested heavily to initiate them in many settings, both cure and care. QIC projects bring together multidisciplinary groups of professionals from different healthcare organizations to improve aspects of the quality of their

service, in a structured way of setting targets, collecting data and testing changes (Plan-Do-Study-Act Cycles). National learning sessions, conference calls and feedback on progress reports are organized. Clinical experts and experts in quality improvement provide ideas and support.

The next four studies (chapters 4-7) all focus on the impact of the Depression QIC, organized in the primary care setting to implement a stepped care approach and change antidepressants prescribing behaviour of primary care physicians. Chapter 8 presents a study into the Schizophrenia QIC organized in specialty care to implement a series of evidence-based interventions and improve continuity of care.

In **chapter 4** we described the content, activities and quality improvement data of the thirteen multidisciplinary primary care teams participating in the Depression QIC. The aim of this QIC was to implement a guideline-based stepped care depression model, which had been developed by an expert team and printed on a smart card. The stepped care model consisted of two care pathways with different levels of treatment intensity: a first low intensity treatment pathway for patients with non-severe depression and a second treatment pathway offering antidepressants or psychotherapy to patients with severe depression or with insufficient response to the first step. In both pathways monitoring of depression symptoms with a questionnaire was required. The criteria to differentiate between severely and non-severely depressed patients were defined by the national expert team.

In total 101 mostly primary care health professionals were involved, and 536 patients were diagnosed. Overall 356 patients (66%) were considered non-severely depressed by the clinicians and 180 (34%) patients showed severe symptoms. The mean percentage of non-severe patients treated according to the stepped care model was 78%, and 57% for the severely depressed patient group. The proportion of non-severely depressed patients receiving a first step treatment according to the stepped care model improved during the project, this was not the case for the severely depressed patients. The teams were able to monitor depression symptoms to a moderate to reasonable extent during a period of six months. Within three months, 28% of monitored patients had recovered, meaning a Beck Depression Inventory (BDI) score of 10 and lower, and another 27% recovered between three and six months.

We concluded that a stepped care approach seems acceptable and feasible in primary care, introducing different levels of care for different patient groups,

although special attention should be paid to the quality of care for severely depressed patients.

Chapter 5 presented the qualitative results of semi-structured group interviews with the eight multidisciplinary teams (out of thirteen) from the Depression QIC who consented to participate in additional implementation research activities. The aim of this study was to provide insight into the perceptions of the primary care physicians, mental health nurses, social workers, physiotherapists, psychiatrists, psychologists and others on the implementation of stepped care for depression into their daily routines. The interviews took place during the last half of the fifteen months of the QIC and were audio taped, transcribed verbatim and independently coded by two researchers, applying thematic coding with the help of qualitative analysis software. To help understand and further interpret the qualitative findings, the analysis was supported by an existing conceptual framework for implementing best practices for depression, based on the Normalisation Process Theory (NPT).

The interviews showed that all three stepped care principles (patient differentiation, stepped care treatment, and outcome monitoring), were locally partially translated and introduced. Clinicians reported changes in terms of learning how to differentiate between patient groups and different levels of care, changing antidepressant prescribing routines as a consequence of having a broader treatment package to offer to their patients, and better working relationships with patients and colleagues. Factors facilitating the process were the simple and pragmatic stepped care model itself, the structured team meetings (part of the QIC method), and the positive reaction from patients to stepped care. The differing views of depression and depression care within multidisciplinary health teams, lack of resources, and poor information systems hindered the rapid introduction of the stepped care model.

The two NPT constructs 'coherence' and 'cognitive participation' appeared to be crucial drivers in the initial stage of the implementation process. Coherence refers to the way in which depression care is conceptualized by healthcare professionals, and implies that all actors should have a shared understanding of what constitutes depression and depression work. This shared understanding is necessary for adoption of an effective stepped care model for depression in routine care. Cognitive participation outlines how professionals engage in depression care, and implies an agreement that depression care is part of routine care and that there is a shared set of diagnostic and treatment techniques.

We concluded that while it is difficult for the implementation of a full stepped-care approach to occur within a short time frame, clinicians can make progress towards achieving this within the context of a QIC. Creating a shared understanding within multidisciplinary teams of what constitutes depression and reaching a consensus about the content of depression care and the division of tasks are important factors to address when implementing new models for depression care.

In **chapter 6** we presented a quasi-experimental implementation study into the impact of the Depression QIC on antidepressants prescribed by primary care physicians. The stepped care model for depression implied that antidepressant medication should not be offered as a first step treatment to patients with sub-threshold or mild depression. Instead, low intensity interventions were being implemented. At the time of the study around 40%-60% of Dutch patients in primary care presenting with sub-threshold or mild depression received antidepressants, which was considered to be high by many. Therefore, the expectation was that during the QIC a reduction of antidepressant prescribing by primary care physicians would occur.

To test this hypothesis a quasi-experimental study was performed, with a non-equivalent control group and three years follow-up. The percentage of antidepressant prescriptions provided by the QIC primary care physicians, as a first treatment step for adult patients diagnosed with depressed feelings (ICPC P03) or a depression (P076) was compared before, during and after the QIC to the prescribing behaviour of physicians participating in the Dutch National Information Network of General Practice (LINH). This is a national database holding longitudinal and nationally representative data on morbidity, prescribing, and referrals in primary care. In both groups prescribing data were gathered from the Electronic Medical Records of the participating practices. In addition we gathered information on referrals to mental health specialists.

The QIC group consisted of 20 primary care physicians from 17 practices, the control group included 115 primary care physicians from 41 practices. Data regarding 400 patients in the QIC group and 3956 patients in the control group were included in the analyses. A decrease of 23.3% (49.4%-26.1%) in antidepressant prescription rates for newly diagnosed patients with depressive symptoms was found within the intervention group, whereas no difference occurred in the control group (50.3%-52.6%). Multilevel regression analysis

showed that a decrease over time due to participation in the QIC was significant compared to the control group (OR 0.44, 95% CI: 0.21-0.92).

We concluded that QICs can lead to a substantial reduction of antidepressant prescriptions as a first treatment step for depression in primary care. Future research has to determine if this reduction is part of an adequately implemented stepped care approach, in which patients with mild symptoms have access to low intensity interventions and severely depressed patients to medication and psychotherapy.

In **chapter 7** patient-level cost-effectiveness was assessed of health care delivery for depression by primary care clinicians after exposure to the QIC. We performed an economic evaluation using a societal perspective which means that costs encompass both health care costs and costs stemming from productivity losses. The intervention group consisted of primary care patients from practices participating in a national depression Quality Improvement Collaborative (QIC), the control group consisted of patients from usual care practices included in the Netherlands Study of Depression and Anxiety (NESDA). To assure comparability at baseline we matched the study groups by relevant patient characteristics that were regarded predictive of treatment response. The central clinical end-term of the study was remission, measured with the Inventory for Depressive Symptomatology (IDS-SR) at baseline and at twelve months. Costs were measured with the Trimbos and Institute of medical Technology Assessment Cost Questionnaire of Psychiatry (TIC-P).

The costs analysis was performed by calculating the incremental cost-effectiveness ratio (ICER) of treatment in the QIC condition versus treatment in the usual care condition, as the difference in costs between QIC and the control group divided by the difference of effects in both conditions $(C_1 - C_0) / (E_1 - E_0)$, where C is the average annual per-patient cost and E is the percentage of patients who recovered from a depression in the experimental and control conditions (subscripted 1 and 0 respectively).

The analyses were based on 89 patients: 34 in the QIC group and 55 in the control group. These small numbers of patients made the study underpowered and unfit to test hypotheses and draw conclusions based on statistical analyses. In the context of an economic evaluation however, small sample data can be used to evaluate the tradeoffs between health benefits and costs and to make probabilistic statements to support medical decision making under situations of uncertainty.

In the QIC group 26% recovered and 18% in the control group. The mean per-patient societal costs were lower in the QIC group (€5,012) than in the control group (€5,871). There was a 73%-89% probability that QIC care was more cost-effective than usual care and for each case of recovery that could be achieved by offering a QIC treatment a saving was made of €10,311. However, the investments for implementing the QIC approach were estimated at over one million euro.

We concluded that from a societal perspective the QIC approach is likely to offer more value for money than care as usual after being implemented, but a larger and randomized study is needed to verify our findings.

In our last study in **chapter 8** we presented the Schizophrenia QIC. The context and design of the study were similar to the study in chapter four on the Depression QIC. The study was based on the quality improvement data collected by 30 QIC teams from the Netherlands in which 359 clinicians with different professional backgrounds participated. This QIC aimed at implementing six guideline-based interventions for schizophrenia: Assertive Community Treatment (ACT) or its adapted version Functional Assertive Community Treatment (FACT), Cognitive Behavioural Therapy (CBT), Psycho-Education (PE), Family Interventions (FI), Individual Placement Support (IPS), Pharmacotherapy (PHth). In addition, teams worked on better continuity of care by developing an individual care plan for each patient covering treatment, early warning signs and rehabilitation.

The degree of implementation of the interventions was measured at the end of the QIC in a survey amongst participants. Care plans were collected and counted and clinical outcomes were measured at different instances with the Health of the Nation Outcome Scales (HoNOS) en de Clinical Global Impression scale (CGI).

Analyses were based on 1489 patients suffering from schizophrenia. Before the QIC only half of the evidence-based interventions (CBT, PE, PHth) had been available in most of the teams, and less than half of the teams could offer their patients (F)ACT, FI or IPS. At the end of the QIC, most teams had made all interventions available and a majority of the teams had developed protocols for most of them. Still, only a minority of teams was able to adhere to the protocols for at least 70% of their patients, except for pharmacotherapy (53% of the teams), although for all interventions the number of teams who routinely provided the care according to protocol improved over time. Complete care plans were composed for 38% of the patients, as opposed to 3% previous to the QIC. Social functioning improved slightly (HoNOS mean: from 6.2 to 5.6) as well as symptom severity

(CGI-S mean: from 4.1 to 3.9). Relapse rates did not improve during the course of the QIC.

Our conclusion was that a QIC can result in improved delivery of evidence-based care and continuity of care in the specialized mental health care setting, and in improved outcomes for individuals with schizophrenia. More rigorous research designs have to confirm these findings.

In the **general discussion** we reflected on the main findings of this thesis. Our results, although not based on randomized designs, pointed in the same direction, that QICs can improve implementation of guideline recommendations, and lead to better quality of care and possibly to better clinical outcomes. These effects occurred both in primary care for patients with depression as well as in specialized mental healthcare for patients with schizophrenia.

Most studies focused on the implementation of a stepped care model for depression in primary care. The most solid result of the depression QIC was the changed antidepressant prescribing behaviour of the participating primary care physicians. Although we could not determine which patient groups exactly profited of this change, these reduced prescribing rates are quite remarkable because they interrupt a solid trend of consistent, higher prescription rates in primary care.

The implementation of a full stepped care model was hard to organize during the course of the QIC and most teams concentrated on the implementation of the low intensity treatments for patients with mild depression and continuous monitoring. Possibly care delivered according to the QIC depression model might also be more cost-effective than usual care, because of lower productivity losses. Still, large investments are needed to initiate QICs which requires funding bodies to make the business case before doing so.

A range of factors impacting on stepped care implementation have been identified in our work. Most of them, like sufficient time, motivation and resources are not specific to depression care and have already been described in the general implementation literature. A few factors actually do seem unique to mental healthcare and important to mention for future implementation programs. A first crucial factor is the creation of a shared understanding of the concept of depression and depression care and a consensus amongst different primary care clinicians on a shared set of tasks, from the start of the process. A second, almost decisive factor for successful implementation of change, is the uptake of depression process and outcome indicators in the EMRs of primary care physicians. Without feedback information depression care can not be properly

improved. Here, there is still a lot to gain in the Netherlands. The last factor that needs attention in stepped care implementation programs is the risk of undertreatment of patients with severe or long term depression, when everybody's focus is on implementing low intensity interventions for mild cases.

It is expected that multidisciplinary guidelines will become the backbone of future quality improvement programs in mental health initiated by the government and the professional and patient organizations. This thesis can provide relevant input for the design of these programs. We suggested that future guidelines will be developed in such a way that they are of high methodological quality and at the same time acceptable and implementable for patients and professionals. This can only be done by linking them, more than currently happens, to other quality improvement instruments such as performance indicators, local care pathways and routine outcome monitoring systems. If professionals and patients can directly link to guideline recommendations and receive personalized decision support, chances are high that the science-to-practice gap will be reduced. If guidelines then become the common source for developing local and national indicators to monitor the quality and outcomes of care, improvement activities can be set up more easily and performances of organizations can be better compared. In that situation nationally organized QICs might become superfluous and managers can take the lead in initiating local or regional QIC-like networks for quality improvement.

The conditions for this 'culture of change' in mental healthcare seem to come in sight. The professional organizations are gradually taking responsibility for the national quality improvement agenda and a more effective and efficient healthcare system. Consumer organizations are better involved and heard, and health insurance companies are looking for more collaboration with professionals. And perhaps most of all, the possibilities of information technology systems to provide feedback information has improved tremendously. The only thing yet to happen seems to be that all who are involved in mental healthcare start to fully profit of these circumstances without negative external pressure, for instance by studying data on local care processes and outcomes, reflect on them, learn and act to improve daily care. For the well-being of patients and the sound allocation of available budgets, the development of these improvement processes will be crucial for the years to come, because as Paul Batalden from the Institute for Healthcare Improvement (the institute who invented the QIC) and his colleagues stated: 'healthcare will not realize its full potential unless change making becomes an intrinsic part of everyone's job, every day, in all parts of the system'.

Samenvatting

Hoofdstuk 1: Introductie

Dit proefschrift gaat over het verbeteren van de kwaliteit van zorg voor mensen met psychische problemen, met name depressie of schizofrenie, door de implementatie van onderzoekskennis in de alledaagse praktijk. Implementatie is belangrijk omdat er in de geestelijke gezondheidszorg (GGZ) een grote kloof is tussen de beschikbare kennis (wat men weet) over effectieve behandelingen en de dagelijkse praktijk en ervaringen van mensen (wat men krijgt). Zo lijdt ongeveer 21 procent van alle patiënten in de huisartspraktijk aan depressieve klachten en krijgt slechts 42 procent van deze groep een behandeling die in overeenstemming is met richtlijnen. Van alle mensen die voor schizofrenie behandeld worden ontvangt 25 tot 50 procent een behandeling in overeenstemming met de richtlijn.

In de afgelopen decennia zijn er in de zorgsector vele strategieën ontwikkeld om het gebruik van kennis in de praktijk te bevorderen en daarmee de kwaliteit van de zorg te verbeteren. In dit proefschrift werd onderzocht in hoeverre enkele van deze 'implementatiestrategieën' uit de algemene gezondheidszorg geschikt zijn voor het verbeteren van de kwaliteit van zorg in de GGZ. Implementatiestrategieën zijn 'gerichte activiteiten om de introductie van een specifieke methode of product te realiseren of om een specifieke verandering te bevorderen'. In de zorg kunnen deze activiteiten gericht zijn op hulpverleners (bijvoorbeeld bij- en nascholing, visitaties), op organisaties (bijvoorbeeld veranderingen in taakomschrijvingen), op patiënten (bijvoorbeeld eigen bijdragen, informatiefolders) of op regelgeving (bijvoorbeeld nieuw verzekeringsbeleid of wetgeving).

De hier gepresenteerde studies concentreerden zich op drie verschillende maar aan elkaar gerelateerde implementatiestrategieën, namelijk:

- 1) Klinische richtlijnen, gericht op hulpverleners om hen te informeren en aanbevelingen te doen over effectieve of werkzame zorg;
- 2) Organisatorische strategieën om effectieve zorg in de dagelijkse praktijk te organiseren;
- 3) De "Quality Improvement Collaborative (QIC)", een samengestelde strategie waarmee men zowel hulpverleners als organisaties poogt te veranderen.

De eerste twee implementatiestrategieën zijn het onderwerp van deel 1 van het proefschrift, deel 2 gaat geheel over QICs.

Deel 1

Implementatiestrategieën in de GGZ

In deel 1 werden twee verschillende implementatiestrategieën gepresenteerd: klinische richtlijnen (kortweg richtlijnen) en organisatorische strategieën. Richtlijnen bevatten vakinhoudelijke aanbevelingen aan hulpverleners en patiënten voor optimale zorg, en zijn gebaseerd op wetenschappelijk bewijs, klinische expertise van hulpverleners en ervaringskennis van patiënten. De gedachte achter het ontwikkelen van richtlijnen is dat zij kunnen bijdragen aan 'evidence-based' geneeskunde, waarin wetenschappelijke kennis wordt meegewogen bij het nemen van behandelbeslissingen. Richtlijnen zouden zo kunnen leiden tot betere zorg, betere gezondheid van patiënten en tot een welvarender maatschappij.

Organisatorische implementatiestrategieën zijn veranderingen in de manier waarop zorg in de praktijk geleverd wordt, met als doel de kwaliteit van zorg te verbeteren en daardoor gezondheidswinst voor patiënten te bereiken. Organisatorische strategieën kunnen bestaan uit veranderingen in het type hulpverlener dat een behandeling geeft (de verpleegkundige in plaats van de dokter), de manier waarop de hulp is georganiseerd (in teams in plaats van in een solopraktijk, zorg geleverd door een computer of een hulpverlener) en de plaats waar de behandeling wordt gegeven (thuis in plaats van het ziekenhuis).

In **hoofdstuk 2** werd een overzicht gegeven van de activiteiten in Nederland op het gebied van multidisciplinaire richtlijnen in de GGZ, bedoeld voor de verschillende beroepsgroepen in de eerste- en tweedelijns GGZ. Dit overzicht werd gebaseerd op Nederlandse literatuur en documenten.

Tussen 1999 en 2009 werden in de GGZ dertien multidisciplinaire richtlijnen ontwikkeld en kwamen vele van deze richtlijnen afgeleide documenten uit, zoals patiëntenversies, checklists en implementatiemateriaal. Bijna dertig beroepsverenigingen en tal van patiëntenorganisaties waren bij de richtlijnontwikkeling betrokken. Deze volgde de methode van 'evidence-based' richtlijnontwikkeling, een methode waarbij volgens Offringa gestreefd wordt naar het 'gewetensvol, expliciet en oordeelkundig gebruik van het bewijsmateriaal'. Hoewel patiënten op verschillende manier bij de richtlijnontwikkeling participeerden, bleef het perspectief van hen in de richtlijnen vaak onderbelicht.

Hulpverleners in de GGZ werden zich in de afgelopen jaren bewust van het bestaan van de landelijke richtlijnen, maar men gebruikte ze slechts in beperkte

mate, met uitzondering van psychiaters die de inhoud van de richtlijnen vaak kenden en toepasten in dagelijks praktijk.

Hoewel richtlijnen een belangrijk instrument zijn geworden voor beroepsgroepen en cliëntenorganisaties, was er ook veel kritiek. Eén van de kritiekpunten was dat de richtlijnen sterk diagnose georiënteerd waren, wat niet goed paste in de professionele paradigma's en werkwijzen van diverse niet-medische beroepsgroepen. Andere kritiekpunten hielden verband met de beperkte onderbouwing van richtlijnen (de randomized controlled trial als het dominante onderzoeksdesign), het gebrek aan aanbevelingen voor concrete problemen uit de praktijk, de moeilijkheid om in een tekst de perspectieven van diverse beroepsgroepen en cliënten te verenigen en de omvang en vormgeving van de richtlijnen, beiden onaantrekkelijk voor dagelijks gebruik.

Gebaseerd op dit overzicht kwamen we tot de conclusie dat toekomstige richtlijnen in de GGZ beter moeten aansluiten op de informatiebehoeften van hulpverleners, hulpvragers en managers. Daarnaast zullen deze gebruikers de komende jaren beter moeten leren om de richtlijnen te gebruiken bij beslissingen in de dagelijkse praktijk.

Hoofdstuk 3 bevat een overzicht van de wetenschappelijke literatuur over organisatorische implementatiestrategieën voor het verbeteren van de zorg. We concentreerden ons op gepubliceerde overzichtstudies oftewel systematic reviews en voerden een systematische literatuursearch uit in de databases PubMed, PsycINFO, CINAHL, EMBASE en in het Cochrane Register van Systematische Reviews. Drie onderzoekers selecteerden en beoordeelden de kwaliteit van de studies onafhankelijk van elkaar. De geselecteerde studies werden vervolgens geordend aan de hand van een bestaande indeling van zes categorieën van organisatorische implementatiestrategieën.

In totaal werden 21 systematische reviews geselecteerd, waarvan zeventien van een redelijke methodologische kwaliteit. Bijna alle reviews hadden gerandomiseerde, gecontroleerde trials geïnccludeerd of beoogden dat. In zes reviews werden er geen studies gevonden die aan de gestelde inclusie criteria voldeden. Vijftien reviews gingen over multidisciplinaire teams en geïntegreerde zorgmodellen. Over andere organisatorische veranderingen in de zorg, zoals een verandering in professionele rollen en het gebruik van informatietechnologie bij het nemen van behandelbeslissingen, waren veel minder reviews gepubliceerd. Dit is

opvallend omdat deze innovaties de laatste jaren door beleidsmakers sterk worden gestimuleerd.

In de meeste van de beoordeelde reviews leidden de organisatorische veranderingen tot minder psychiatrische symptomen, beter functioneren en betere uitkomsten met betrekking tot werk en wonen. Helaas bevatten de studies weinig informatie over het effect van organisatorische veranderingen op intermediaire maten zoals het handelen van hulpverleners (bijvoorbeeld het aantal keer dat een bepaalde behandeling werd gegeven), omdat dergelijke uitkomsten vaak niet in de studies werden gemeten. Vanuit implementatie oogpunt is het dan moeilijker om uit dit type onderzoek af te leiden hoe een specifiek organisatorisch model in de dagelijkse praktijk werkt en kan worden geïmplementeerd.

Deel 2

De impact van de Quality Improvement Collaborative op de kwaliteit van zorg in de GGZ

Deel 2 van het proefschrift presenteerde verschillende studies over twee QICs die van 2006 tot 2008 in Nederland werden uitgevoerd. Het doel van deze programma's was om de kwaliteit van zorg voor mensen met depressie of schizofrenie te verbeteren door het implementeren van centrale aanbevelingen uit de in 2005 gepubliceerde, eerste landelijke multidisciplinaire richtlijnen voor deze onderwerpen. QICs zijn de laatste tien jaar erg populair geworden in de Nederlandse zorgsector. Het Ministerie van Volksgezondheid, Welzijn en Sport investeerde vanaf 1990 veel overheidsgeld in deze programma's, zowel in de kortdurende zorg als in de langdurende zorg. In QICs vormen multidisciplinaire teams van hulpverleners uit verschillende organisaties een landelijk netwerk om een jaar lang te werken aan het verbeteren van de zorg in hun eigen instelling. Dit gebeurt op een gestructureerde manier door het stellen van duidelijke doelen, het verzamelen van zorggegevens en het testen van veranderingen in de zorg (de Plan-Do-Study-Act cyclus). Door een landelijk expertteam worden conferenties, begeleiding, training en feedback op tussenrapportages georganiseerd. De rol van de experts is te adviseren over inhoudelijke en verandervraagstukken.

De vier studies uit hoofdstuk 4 tot 7 gaan over de impact van de Depressie QIC in de eerstelijns. Deze QIC beoogde een zogeheten stepped care model voor depressie in te voeren en daarmee het voorschrijfgedrag van huisartsen met betrekking tot antidepressiva te veranderen. Hoofdstuk 8 gaat over een QIC in de tweedelijns GGZ met als doel effectieve behandelingen uit de multidisciplinaire

richtlijn schizofrenie te implementeren en de continuïteit van zorg voor deze doelgroep te verbeteren.

In **hoofdstuk 4** werden de inhoud, activiteiten en de verbetergegevens beschreven van dertien multidisciplinaire teams in de eerstelijns die deelnamen aan de Depressie QIC om een stepped care model oftewel getrapte zorg voor depressie in hun praktijken in te voeren. Dit model was ontworpen door een landelijk QIC expert team en gedrukt op een geplastificeerd kaartje. Het stepped care model bestond uit twee 'zorgpaden' of behandelstappen van verschillende intensiteit. Voor patiënten met niet-ernstige depressieve klachten bestond het zorgpad uit kortdurende, niet intensieve behandelingen gedurende zes tot twaalf weken en uit een instrument om de klachten te monitoren. Een tweede zorgpad was bedoeld voor mensen met ernstige depressieve klachten. Dit bestond uit antidepressiva en/of psychotherapie als eerste behandelstap en uit het monitoren van de klachten. Deze tweede stap was ook aangewezen voor de lichte groep bij onvoldoende effect van de eerste stap. De ernstcriteria voor het differentiëren tussen ernstige en niet-ernstige patiënten waren door de experts gedefinieerd.

In totaal deden 101 hulpverleners uit voornamelijk de eerstelijns mee aan de QIC. Zij implementeerden het model voor 536 patiënten bij wie zij depressieve klachten of een depressie hadden geconstateerd. Van deze groep werden 356 mensen (66%) als niet-ernstig depressief beschouwd, 180 patiënten (34%) waren ernstig-depressief volgens de hulpverleners. Gemiddeld werd 78% van de niet-ernstige groep volgens het stepped care model behandeld en 57% van de ernstige groep. Het percentage niet-ernstig depressieve patiënten dat behandeld werd volgens het model verbeterde tijdens het project, voor de ernstige groep was dat niet het geval. Tijdens de QIC waren de teams matig tot redelijk in staat om de depressieve klachten zes maanden lang te monitoren. Binnen drie maanden bleek 28% van de gemeten patiënten te zijn hersteld, met een score op de Beck Depression Inventory van 10 of lager. Nog eens 27% knapte drie tot zes maanden na de start van de behandeling op.

We concludeerden dat een stepped care aanpak voor depressie, waarbij verschillende niveaus van zorg voor verschillende patiëntengroepen worden georganiseerd, in de eerstelijns haalbaar en acceptabel is hoewel speciale aandacht uit moet gaan naar adequate zorg voor mensen met ernstige depressies en het herhaaldelijk meten van depressieve klachten.

In **hoofdstuk 5** werden de resultaten gepresenteerd van semi-gestructureerde interviews met acht van de dertien multidisciplinaire teams uit de Depressie QIC, die hadden toegezegd om mee te doen aan aanvullend implementatieonderzoek. Het doel van dit kwalitatieve deelonderzoek was het verkrijgen van inzicht in het perspectief van huisartsen, sociaal psychiatrisch verpleegkundigen, maatschappelijk werkers, fysiotherapeuten, psychiaters, psychologen en anderen op het implementeren van het stepped care model voor depressie in hun dagelijkse routines. De interviews werden in de laatste helft van de vijftien maanden durende QIC gehouden, op de band opgenomen, woordelijk uitgeschreven en door twee onderzoekers onafhankelijk van elkaar thematisch gecodeerd met behulp van een software programma. Als laatste stap in de analyse werden de resultaten bekeken vanuit een bestaand conceptueel model voor het implementeren van veranderingen in de depressiezorg, gebaseerd op de Normalisation Process Theory (NPT).

De uitkomsten van deze studie lieten zien dat de drie principes van het stepped care model (differentiatie tussen patiëntengroepen, stepped care of getrapte behandeling en het monitoren van uitkomsten), lokaal vertaal werden naar de praktijken en op onderdelen werden ingevoerd. De hulpverleners gaven aan dat ze tijdens de QIC beter onderscheid leerden te maken tussen lichte en ernstige depressies en de bijbehorende verschillende niveaus van behandeling, dat zij in sommige gevallen anders omgingen met antidepressiva omdat zij een breder pakket aan behandelingen tot hun beschikking hadden. Ook noemden zij de verbeterde relaties met patiënten en collega's door de invoering van het stepped care model. Factoren die deze veranderingen bevorderden waren het eenvoudige kaartje met het stepped care model, de lokale teambijeenkomsten en de positieve reacties van patiënten op stepped care zorg, met name op het gebruik van vragenlijsten. Andere zaken zaten de invoering van het stepped care model in de weg, zoals de verschillende visies op depressie onder de diverse disciplines en het gebrek aan tijd en geld en aan goede informatietechnologie om depressiesymptomen te kunnen monitoren.

De uit de NPT afkomstige concepten 'coherentie' en 'cognitieve participatie' bleken cruciale fenomenen voor het op gang komen van het implementatieproces. Coherentie impliceerde dat de visie op depressie en depressiezorg eerst door alle betrokkenen moest worden uitgewisseld en gedeeld om effectieve invoering van het nieuwe depressiemodel in de praktijk mogelijk te maken. Cognitieve participatie verwees naar het belang van overeenstemming tussen de

hulpverleners over het feit dat depressiezorg onderdeel was van ieders werk en dat er een gedeelde set van diagnostische en behandeltechnieken nodig was.

De conclusie van deze studie was dat hoewel het moeilijk is om in korte tijd een heel stepped care model voor depressie in de eerstelijns te implementeren, de QIC hulpverleners voortgang boekten op de drie onderdelen. Het ontwikkelen van een gedeelde visie op depressie binnen multidisciplinaire teams en het bereiken van overeenstemming over de inhoud van depressiezorg en de onderlinge taakverdeling hebben expliciete aandacht nodig bij de implementatie van nieuwe zorgmodellen voor depressie.

Hoofdstuk 6 besloeg een quasi-experimentele implementatiestudie naar de impact van de Depressie QIC op het voorschrijven van antidepressiva door huisartsen. Het stepped care model voor depressie impliceerde dat antidepressiva niet als eerste stap in de behandeling van mensen met lichte klachten zouden worden gegeven. In plaats daarvan werden laag intensieve behandelingen in de huisartspraktijk geïmplementeerd. In Nederland werd ten tijde van de studie, aan 40 tot 60 procent van de patiënten met depressieve klachten in de eerstelijns antidepressiva voorgeschreven, hetgeen door velen als een hoog percentage werd beschouwd. De verwachting was dan ook dat door de introductie van het stepped care model, het aantal voorschriften van een antidepressivum door huisartsen in de loop van de QIC zou dalen.

Om deze hypothese te testen werd een quasi-experimentele studie opgezet met een ongelijke controlegroep en drie jaar follow-up. We vergeleken voor, tijdens en na de QIC het percentage voorschriften voor antidepressiva van de QIC huisartsen, als eerste stap in de behandeling van volwassen patiënten met een eerste of nieuwe episode van depressieve klachten (ICPC P03) of een depressie (ICPC P076) met het voorschrijfgedrag van huisartsen uit het Landelijk Informatie Netwerk Huisartsenzorg (LINH). Dit is een database met representatieve, longitudinale gegevens over ziekte, voorschrijven en verwijzing in de huisartspraktijk. In beide groepen werd in het Huisartsen Informatie Systeem (HIS) van de deelnemende huisartsen gezocht naar gegevens over voorschrijven. Ook werd gekeken naar verwijzingen door de huisarts naar GGZ hulpverleners in de eerste- of tweedelijns.

De QIC groep bestond uit 20 huisartsen uit 17 praktijken, de controlegroep bestond uit 115 huisartsen uit 41 praktijken. De gegevens van 400 QIC patiënten en van 3956 patiënten uit de controlegroep werden in de analyses meegenomen. In de QIC groep verminderde het percentage antidepressiva voorschriften als

eerste behandelstap van 2006 tot 2008 met 23% (van 49.4% naar 26.1%). In de controlegroep trad geen verandering op (van 50.3% naar 52.6%). De multilevel regressie analyse liet zien dat participatie in de QIC invloed had op verandering in het voorschrijfgedrag (OR 0.44, 95% CI: 0.21-0.92). Het percentage verwijzingen veranderde niet in beide groepen.

De conclusie van deze studie was dat QICs kunnen leiden tot een aanzienlijke daling in het aantal voorschriften voor antidepressiva als eerste behandelstap in de huisartspraktijk. Nader onderzoek moet aantonen of deze daling onderdeel uitmaakt van een adequate stepped care benadering, waarbij mensen met lichte klachten in eerste instantie lichte interventies krijgen aangeboden en mensen met een ernstige depressie antidepressiva of psychotherapie.

In **hoofdstuk 7** werd de individuele kosteneffectiviteit van de zorg volgens het QIC model vergeleken met gebruikelijke zorg. We voerden een economische evaluatie uit vanuit maatschappelijk perspectief, hetgeen betekent dat de berekende kosten zowel zorgkosten omvatten als kosten veroorzaakt door productiviteitsverliezen. De interventiegroep bestond uit patiënten van huisartsen die deelnamen aan de Depressie QIC. De controlegroep bestond uit patiënten van huisartsen die gebruikelijke zorg gaven en deelnamen aan de Netherlands Study of Depression and Anxiety (NESDA). Om deze twee groepen vergelijkbaar te maken werden ze gematched op een aantal factoren. De centrale uitkomstmaat van de studie was herstel, gemeten met de Inventory for Depression Symptomatology (IDS-SR), op baseline en na twaalf maanden follow-up. Kosten werden gemeten met de Trimbos and Institute of medical Technology Assessment Cost Questionnaire of Psychiatry (TIC-P).

Voor de economische analyse werd de incrementele kosteneffectiviteits ratio (ICER) berekend van behandeling in de QIC groep versus behandeling in de controlegroep. Dit gebeurde door het berekenen van het verschil in kosten tussen de groepen gedeeld door het verschil in effecten tussen de beide groepen $(C_1 - C_0) / (E_1 - E_0)$, waarbij C staat voor de gemiddelde kosten per patiënt per jaar en E voor het percentage patiënten dat herstelde van een depressie in de QIC en de controlegroep (respectievelijk subscript 1 en 0).

Er werden gegevens van 89 patiënten geanalyseerd: 34 in de QIC groep en 55 in de controlegroep. Dit kleine aantal maakte de studie ongeschikt voor het statistisch toetsen van hypothesen, maar voor een economische analyse kunnen kleine aantallen wel gebruikt worden voor het doen van probabilistische uitspraken om beslissingen in situaties van onzekerheid te onderbouwen.

In de QIC groep herstelde 26% van de patiënten, in de controlegroep 18%. De gemiddelde kosten per patiënt per jaar waren lager in de QIC groep (€5,012) dan in de controlegroep (€5,871). De economische evaluatie liet zien dat wanneer de QIC benadering werd gekozen in plaats van gebruikelijk zorg, er 73%-89% kans was dat de QIC kosteneffectiever was en dat er voor elke herstelde patiënt €10,311 kon worden bespaard ten opzichte van de gebruikelijke zorg. Wel werden er, om de QIC benadering in acht regio's te implementeren, investeringen van ongeveer 1 miljoen euro gedaan.

De conclusie van deze studie was dat de geïmplementeerde depressie QIC benadering vanuit maatschappelijk perspectief waarschijnlijk meer value for money geeft maar dat een grotere en gerandomiseerde studie nodig is om dit te bevestigen.

Hoofdstuk 8 beschrijft de QIC in de schizofreniezorg, zoals hoofdstuk 4 de Depressie QIC beschreef. De gegevens voor deze studie waren afkomstig van 30 QIC teams, waarin 359 GGZ hulpverleners met verschillende achtergrond deelnamen. Het doel van de teams was het implementeren van zes interventies die in de multidisciplinaire richtlijn werden aanbevolen: Assertive Community Treatment (ACT) of de aangepaste variant Functionele Assertive Community Treatment (FACT), Cognitieve Gedrags Therapie (CGT), psycho-educatie (PE), Familie Interventies (FI), Individual Placement and Support (IPS) en farmacotherapie (FT). Een tweede doel was het verbeteren van de continuïteit van zorg door het invoeren van zorgplannen.

De implementatie van deze interventies werd aan het eind van de QIC met een vragenlijst onder hulpverleners gemeten. Daarnaast werden van alle patiënten de zorgplannen geteld en werd op verschillende momenten het sociaal functioneren en ernst van de symptomen bij patiënten gemeten met respectievelijk de Health of the Nation Outcome Scales (HoNOS) en de Clinical Global Impression scale (CGI).

In totaal werden 1489 patiënten met schizofrenie in de QIC betrokken. Voorafgaand aan de QIC waren in de meeste teams alleen CGT, PE en FT beschikbaar en kon minder dan de helft van de teams (F)ACT, FI of IPS aanbieden. Aan het eind van de QIC waren in de meeste teams alle interventies aanwezig en had een meerderheid voor de meeste interventies ook protocollen ontwikkeld. Toch was maar een minderheid van de teams in staat om zich bij meer dan 70% van de patiënten aan de protocollen te houden, behalve bij farmacotherapie. De invoering van zorgplannen nam fors toe. Aan het eind van de

QIC had 38% van de patiënten een zorgplan, terwijl dat percentage voor de QIC slechts 3% was. Het sociaal functioneren van patiënten verbeterde licht (gemiddelde HoNOS score van 6.2 naar 5.6), evenals de ernst van de symptomen (gemiddelde CGI-S van 4.1 naar 3.9). Terugvalpercentages verbeterden niet.

De conclusie van deze studie was dat een QIC in de tweedelijns GGZ kan leiden tot meer evidence-based zorg en een betere continuïteit van zorg voor mensen met schizofrenie en tot verbeterde uitkomsten. Vergelijkend onderzoek moet dit resultaat bevestigen.

In de **discussie** werden de belangrijkste resultaten van het proefschrift besproken. Hoewel deze niet gebaseerd waren op gerandomiseerde studies, wezen ze allen in dezelfde richting namelijk dat QICs kunnen helpen bij het implementeren van richtlijnaanbevelingen in de praktijk, en daarmee kunnen leiden tot betere kwaliteit van zorg en mogelijk tot betere uitkomsten voor patiënten. Deze effecten traden zowel op in de eerstelijns depressiezorg als in de gespecialiseerde zorg voor mensen met schizofrenie. Deze effecten lijken in onze ogen generaliseerbaar naar de zorg voor sterk vergelijkbare patiëntencategorieën, zoals angststoornissen in de eerstelijns en bipolaire stoornissen in de tweedelijns.

De kern van het proefschrift betrof de implementatie van een stepped care aanpak in de eerstelijns depressiezorg, het doel van de depressie QIC. Het meest robuuste resultaat van deze QIC was het veranderde voorschrijfgedrag van huisartsen met betrekking tot antidepressiva. Hoewel niet kon worden onderzocht welke patiënten er precies van deze verandering profiteerden, is deze daling in voorschriften op zichzelf een bijzonder resultaat omdat het een jarenlange landelijke trend van constante, hogere voorschrijfpercentages doorbreekt. De implementatie van het gehele stepped care model voor depressie bleek te complex om in een jaar tijd te realiseren, maar het lukte de hulpverleners om enkele nieuwe interventies in te voeren voor mensen met lichtere problematiek, naast het monitoren van depressiesymptomen. Mogelijk dat zorg volgens het depressie QIC model ook kan leiden tot minder productieverliezen en dus kostenbesparingen, hoewel de initiële investeringen voor het organiseren van een QIC fors zijn. Dit vraagt om een goede kosten-baten afweging van financiers voordat zij aan QICs beginnen.

Uit onze studies kunnen we een aantal factoren destilleren die de implementatie van stepped care bij depressie hebben beïnvloed. De meeste hiervan, zoals voldoende tijd, motivatie en middelen, zijn niet uniek en al ruimschoots in de literatuur beschreven. Een paar factoren lijken echter wel specifiek voor

veranderprocessen in de eerstelijns GGZ en belangrijk voor toekomstige veranderprogramma's. Zo bleken het ontwikkelen van een gedeelde visie op depressie en depressiezorg en consensusvorming onder de verschillende eerstelijns hulpverleners over onderlinge taakverdeling cruciaal voor het op gang komen van veranderingen. Een tweede bijna doorslaggevende factor voor succesvol veranderen bleek de registratie van proces- en uitkomstindicatoren voor depressie in het HIS van de huisarts. Zonder feedbackinformatie over de verleende zorg en zorguitkomsten valt depressiezorg niet goed te verbeteren. Hier valt op dit moment nog veel aan te verbeteren in ons land. De laatste factor die bij implementatie van stepped care programma's zeker aandacht behoeft is het risico op onderbehandeling van mensen met ernstige of langdurende depressies wanneer lichte interventies te veel naar voren geschoven worden.

Het lijkt er op dat multidisciplinaire richtlijnen in de GGZ de komende jaren nog een grote rol gaan spelen in de kwaliteitsprogramma's van de overheid en de landelijke beroeps- en patiëntenverenigingen. Dit proefschrift bevat aanknopingspunten voor de inrichting van dergelijke programma's. Zo suggereerden wij dat toekomstige richtlijnen of herzieningen van de bestaande richtlijnen zo worden ontwikkeld dat ze én van hoge methodologische kwaliteit zijn én acceptabel en implementeerbaar in de praktijk. Dit kan alleen gerealiseerd worden als richtlijnen, veel meer dan nu het geval is, geïntegreerd worden in andere kwaliteitsinstrumenten zoals proces en uitkomstindicatoren, zorgpaden en het elektronisch patiënten dossier (EPD). Als hulpverleners en patiënten vanuit het EPD kunnen doorklikken naar richtlijnen en op maat adviezen kunnen ontvangen bij behandelbeslissingen, neemt de kans toe dat de science-to-practice gap wordt verkleind. Als richtlijnen daarnaast de bron worden voor het ontwikkelen van lokale en landelijke prestatieindicatoren die in het EPD worden bijgehouden, kunnen verbeteractiviteiten makkelijker worden georganiseerd en organisaties beter onderling worden vergeleken. Dan zijn landelijke QICs wellicht niet meer nodig, maar kunnen managers in hun instelling of regio QIC-achtige netwerken opzetten voor het implementeren van richtlijnen of innovaties.

De voorwaarden voor een dergelijke 'verbetercultuur' in de GGZ komen steeds meer in zicht. Beroepsgroepen nemen de laatste jaren meer verantwoordelijkheid voor de landelijke kwaliteitsagenda en het tot stand brengen van een betere en doelmatige GGZ. Patiëntenorganisaties raken beter betrokken en gehoord, zorgverzekeraars zoeken naar samenwerking met de veldpartijen en, misschien wel de meest belangrijke voorwaarde, de mogelijkheden van ICT systemen om feedbackinformatie te leveren zijn enorm verbeterd. Het enige wat resteert lijkt nog

te zijn dat alle betrokkenen de mogelijkheden volop gaan benutten, bijvoorbeeld door zonder negatieve externe druk beschikbare gegevens over geleverde zorg te analyseren, ervan te leren en actie te ondernemen om geconstateerde problemen in het dagelijks werk op te lossen. Voor het welzijn van patiënten en de juiste besteding van zorgbudgetten is het cruciaal dat deze verbeterprocessen de komende jaren overal worden ontwikkeld, omdat zoals Paul Batalden van het Institute for Healthcare Improvement (het instituut waar QIC is ontworpen) aangaf: 'de zorgsector nooit optimaal zal functioneren tenzij 'veranderen' een integraal onderdeel wordt van ieders werk, elke dag, in alle onderdelen van het systeem'.

Dankwoord

Het is precies zeven jaar geleden dat ik in het Brabantse Veldhoven de bus naar station Eindhoven nam, na afloop van het implementatiecongres Kennis Beter Delen, waar volgens de website 'mensen van elkaar leren hoe ze met zorgvernieuwing om kunnen gaan'. In die bus stond toevallig ook Richard Grol. Ik waagde het er op en vertelde hem dat ik net had gehoord dat het Trimbos-instituut subsidie zou krijgen om Doorbraakprojecten in de GGZ uit te voeren en dat ik dan graag rond dit onderwerp bij hem zou willen promoveren. 'Maak een afspraak' zei Richard 'en vraag daar meteen Michel Wensing bij'.

Zo geschiedde en vervolgens volgde ruim een jaar waarin het onderzoeksvoorstel langs ZonMw commissies ging en de Doorbraakteams werden geworven. De kartrekker van het Doorbraak Depressie verbetertraject, Jochanan Huyser, had inmiddels als co-promotor het wetenschappelijke team versterkt.

In de zeven jaar dat ik over dit proefschrift heb gedaan heb ik veel hulp gekregen. Die had ik nodig omdat het proefschrift min of meer 'naast het werk' is geschreven, zoals veel van de 'promovendi-op-leeftijd' overkomt. Het leuke hiervan is wel het proefschrift hierdoor mijn vijftien jaar werk in het Trimbos-instituut globaal is gaan weerspiegelen. In die tijd heb ik met velen samengewerkt en nog meer mensen hebben mij geïnspireerd. Het is onmogelijk hen hier nu allemaal te noemen, ik moet me beperken tot degenen die bij het proefschrift waren betrokken.

Richard Grol wil ik bedanken voor het gestelde vertrouwen in mij, toen in die bus en in de afgelopen zeven jaar in Nijmegen. Vanaf het eerste overleg ging hij heel voortvarend af op het resultaat: de artikelen. Terwijl ik nog geen idee had waar ik aan begon, moest ik van Richard meteen een inhoudsopgave van het proefschrift maken. Richard, ik denk dat jij door had dat dit pragmatisme voor iemand als ik van groot belang is om te voorkomen dat het gehele traject op niets uitdraait. Dat is mede dankzij jou niet gebeurd. Naast het proefschrift was je de afgelopen tien jaar ook betrokken bij sollicitaties voor twee banen in het buitenland: in 2002 in Australië en nu in de VS. Ook daar bedank ik je voor.

Met Michel Wensing heb ik het meest gewerkt en van hem heb ik zeer veel geleerd. Hij werd vanaf de dag dat Richard Grol met emeritaat ging dan ook mijn eerste promotor. Ik heb enorme bewondering voor zijn intelligentie en kennis op het gebied van implementatie onderzoek en voor zijn bescheidenheid daarover. Ook waardeerde ik zijn manier van begeleiden: kritisch, nooit over-enthousiast maar optimistisch. Gewoon doorgaan en benoemen wat je wel hebt kunnen aantonen. Michel, ik dank je zeer voor de tijd en aandacht die je in mij investeerde

en ben er trots op dat ik bij jou promoveer. Omdat ik al vroeg in het traject vond dat de Nederlandse GGZ meer van jou als hoogleraar implementatiewetenschap zou moeten profiteren, tekenden onze instituten een convenant en werk jij nu ook met diverse collega's van mij. Ik hoop dat dit nog een lange toekomst heeft. Mochten alle literatuur databases het ooit begeven, dan heeft de wetenschappelijke wereld hem nog, denk ik wel eens. Je hebt veel van je kennis met me gedeeld, ik hoop dat we samen blijven werken in dit veld.

Jochanan Huyser was Mister Doorbraak Depressie en degene met wie ik zeer intensief heb opgetrokken vanaf het eerste pilot project (2004-2006). Jochanan was toen werkzaam als psychiater op een derdelijns depressieafdeling en toonde zich enorm enthousiast over de Doorbraakmethode, waar hij vijf jaar lang vele overuren in heeft geïnvesteerd. Hij vertelde me later dat deze ervaring een rol heeft gespeeld in de overstap van psychiater naar manager in Arkin, waar hij verantwoordelijk is voor grote verandertrajecten. Over die veranderingen in de GGZ hebben we de afgelopen jaren vaak gediscussieerd, als ik op zijn werkkamer in Amsterdam mijn artikelen kwam bespreken. Jochanan, je bent een zeer vertrouwde en belangrijke link naar de praktijk voor me geworden en als ik de afgelopen tijd zelf twijfelde over het nut van mijn richtlijn- en implementatiewerk dan hoefde ik maar aan jouw overtuiging te denken om te weten dat deze projecten wel zin hebben. Ik dank je zeer voor alle samenwerking.

Jan Walburg, mijn baas en directeur van het Trimbos-instituut, heeft me zeer gestimuleerd om te promoveren. De combinatie met een leidinggevende functie vond hij geen bezwaar en toen ik aankondigde dat ik na de promotie direct een jaar naar het buitenland wilde, was hij daar ook helemaal voor. Jan, jouw bevologenheid voor kennisverspreiding en kwaliteitsverbetering in de GGZ heeft me geïnspireerd tijdens het schrijven van dit proefschrift. Ik wil je hartelijk bedanken voor je leiderschap en voor de mogelijkheden die het instituut me heeft geboden om mezelf op vele verschillende fronten te ontwikkelen.

Ook bedank ik graag enkele van mijn voormalige leidinggevers, Giel Hutschemaekers en Lourens Henkelman, die mij in het Trimbos-instituut hebben aangenomen en in de posities hebben gezet die tot het proefschrift hebben geleid. Ik was Giels hulpje in 1999, toen het Trimbos-instituut begon met het ontwikkelen van de richtlijnen. Giel zette in dat jaar de visie neer voor een evidence-based GGZ, en die is sindsdien leidend geweest bij ons werk. Was ik in 1999 nog de persoon die na elke vergadering van de Landelijke Stuurgroep bedankt werd voor de koffie, nu heb ik de eer om het richtlijnprogramma zelf mede aan te sturen in

partnership met de beroepsgroepen en patiëntenorganisaties. Die positie dank ik vooral aan Lourens Henkelman, met wie ik 5 jaar lang heel plezierig heb gewerkt en die het mogelijk maakte dat ik een promotietraject kon realiseren in het Trimbos-instituut, hetgeen niet voor de hand liggend is. Hij vertrok in 2007 en ik was zeer vereerd toen hij mij vroeg om hem op te volgen.

Een aantal hoogleraren heeft mij op onderdelen van het proefschrift geadviseerd en tijd in mijn werk geïnvesteerd. Ik bedank Christina van der Feltz-Cornelis, hoogleraar sociale psychiatrie, voor het opnemen van de Doorbraakstudie in het grote Depressie Initiatief en haar leiderschap in dat programma. Ik bedank Brenda Penninx, hoogleraar psychiatrische epidemiologie, voor de betrokkenheid bij het oorspronkelijke design van de trial waar NESDA data voor gebruikt zouden worden. De dataverzameling liep helaas anders dan gepland, maar gelukkig hebben we toch het kosteneffectiviteitsartikel met elkaar kunnen schrijven. Dat dat lukte kwam voornamelijk door de begeleiding en input van Filip Smit, hoogleraar evidence-based public mental health, die geheel belangeloos en op zijn vriendelijke wijze kritische suggesties deed voor verbetering van dit artikel. Ik bedank ook Peter Verhaak, hoogleraar GGZ binnen de huisartsvoorziening, die mij adviseerde over het gebruik van LINH gegevens en bij dit artikel co-auteur was. Dank ook aan Jan Spijker, hoogleraar chronische depressie, lid van de richtlijnwerkgroep depressie en expert bij de Doorbraak-projecten. Maar vooral was hij de laatste jaren mijn opgewekte buurman in het Trimbos-instituut. Ook dank ik Ton van Balkom, hoogleraar psychiatrie en al vele jaren voorzitter van de richtlijnwerkgroep depressie en angststoornissen. Hij is als vooraanstaand lid van de Nederlandse Vereniging voor Psychiatrie zeer belangrijk geworden voor de ontwikkeling van GGZ-richtlijnen in ons land, de stepped care aanpak van angst en depressie en de implementatie daarvan. En dan last but not least, Jan Swinkels, hoogleraar richtlijnen in de gezondheidszorg, die ik al vanaf 1999 in vele projecten tegenkom. Ik dank je Jan, voor je kennis over en bevlogenheid voor praktisch alles wat met kwaliteit van zorg te maken heeft. Maar net zo belangrijk voor me is je Amsterdamse directheid en de lol die ik heb bij onze ontmoetingen.

Advisering en begeleiding door hoogleraren is cruciaal bij promoveren, maar het zijn overwegend anderen die helpen bij het uitvoerend werk. De meeste van hen waren medewerkers van het Trimbos-instituut. Ik ben hen zeer erkentelijk voor de kwaliteit die ze leverden, hun inzet en hun humeur dat immer goed bleef, ook bij de tachtigste email van mij. De volgende personen wil ik hierbij zeer bedanken

voor hun werk aan de verschillende hoofdstukken. Hans Kroon hielp bij beoordelen van de artikelen uit het review (hoofdstuk 3) en Jacomine de Lange en Lex Hulsbosch bij de analyses van de Doorbraakdata (hoofdstuk 4). Jacomine en Matthijs Oud waren sterk betrokken bij de kwalitatieve studie over het Doorbraakproject Depressie (hoofdstuk 5). Harrie van Haastrecht en Yvonne Drost verzorgden het datamanagement bij de Doorbraak Depressie studie (hoofdstuk 6). Danielle Volker en Cristina Majo voerden de kosteneffectiviteitsanalyse uit (hoofdstuk 7). Met Danielle van Duin werkte ik nauw samen aan het hoofdstuk over het Doorbraakproject Schizofrenie (hoofdstuk 8). Veel dank gaat uit naar Jan Koetsenruijter van IQ healthcare die hielp bij de analyses van de studies uit hoofdstuk 6 en 8. Tot slot bedank ik all co-auteurs die hier nog onvermeld bleven voor de plezierige en productieve samenwerking: Rob Drake, Mark van der Gaag, Jeremy Grimshaw, Jako Burgers, Jolanda Meeuwissen, Peter Niesink, Henny Sinnema, Cees Slooff, Jaap van Weeghel.

In de publicatiefase van de artikelen en het boekje werd ik zeer geduldig en professioneel geholpen door Toine Ketelaars, Joris Staal, Nelleke van Zon en Jolanda van Haren van IQ healthcare. Jolanda, ik ben je zeer erkentelijk voor de zorg die jij in de eindfase droeg voor de promotie en het boekje. Nelleke, jouw hulp strekt veel verder dan de promotie en ik kan je eigenlijk niet genoeg bedanken voor jouw professionele, pro-actieve en zeer prettige ondersteuning van mij de laatste jaren. Mede omdat ik veel aan jou heb kunnen overlaten, is het gelukt om dit boekje nu van de pers te laten rollen.

Als hoofd van het team Zorginnovatie van het Trimbos-instituut ben ik mijn (oud)teamleden dank verschuldigd voor hun geduld en steun bij het tot stand komen van het proefschrift. Ik ben me ervan bewust dat ik vooral het laatste jaar vaak thuis aan het werk was en er voor jullie niet altijd fysiek kon zijn. Peter van Splunteren, Jolanda Meeuwissen, Ina Boerema, Daniëlle van Duin, Henny Sinnema, Matthijs Oud, Geurt van de Glind, Marleen Hermens, Bob van Wijngaarden, Daniëlle Meije, Simone van de Lindt, Annemieke van den Bosch, Laura Shields en Harriët van Wetten, ik ben zeer trots op de prestaties van ons team en dank jullie enorm voor je inzet. Hedda van 't Land ben ik erkentelijk voor het feit dat ze mij dit jaar als leidinggevende van dit team op zeer energieke wijze vervangt.

Zonder de vele hulpverleners en hun patiënten die aan de studies hebben bijgedragen was dit proefschrift uiteraard nooit tot stand gekomen. Ik noem Betty Steenkamer en Marieke van den Heuvel van ROS Robuust bij naam, omdat zij in Zuid Nederland het Doorbraakstokje hebben doorgegeven aan een grote groep huisartsen en andere eerstelijns hulpverleners die nu nog steeds met het depressiemodel werkt, gestimuleerd door verzekeraars. Het is zeer bemoedigend om te weten dat al het implementatiewerk niet alleen voor dit boekje is verricht. Ook in de langdurende zorg zijn de effecten van de Doorbraakprojecten nog steeds aanwezig, zo horen we terug.

Met die boodschap durf ik dan wel thuis te komen, na zeven jaar afwezigheid op etentjes en avondjes, weekjes Frankrijk, zeilvakanties, tennispartijtjes, Luba loopjes, etcetera. Dit brede thuisfront heb ik bij tijd en wijle tekort gedaan, dat realiseer ik me goed. Gelukkig is iedereen er nog. Mijn lieve ouders bijvoorbeeld, die me al mijn hele leven van dichtbij volgen. Ik vind het zeer bijzonder en ontroerend om hen nog om me heen te hebben nu ik promoveer. Mijn beide paranimfen, Rolande en Elske-Tine, zijn al twintig jaar geleden op hun posities benoemd en waren dus zo langzamerhand wel gewend om rustig en opgewekt het moment af te wachten waarop er iets ging gebeuren. Ik vind het een fijn idee dat zij op dat ene moment dan eindelijk naast me staan. En dan mijn broers, schoonfamilie en vrienden, ik dank jullie allen zeer voor de steun en interesse maar jullie kunnen nu ophouden mij te confronteren met de vraag: 'is het proefschrift al af?'

Het proefschrift is af en opgedragen aan Marijke Hoen, my working week and my Sunday rest.

Amsterdam, oktober 2012

Curriculum vitae

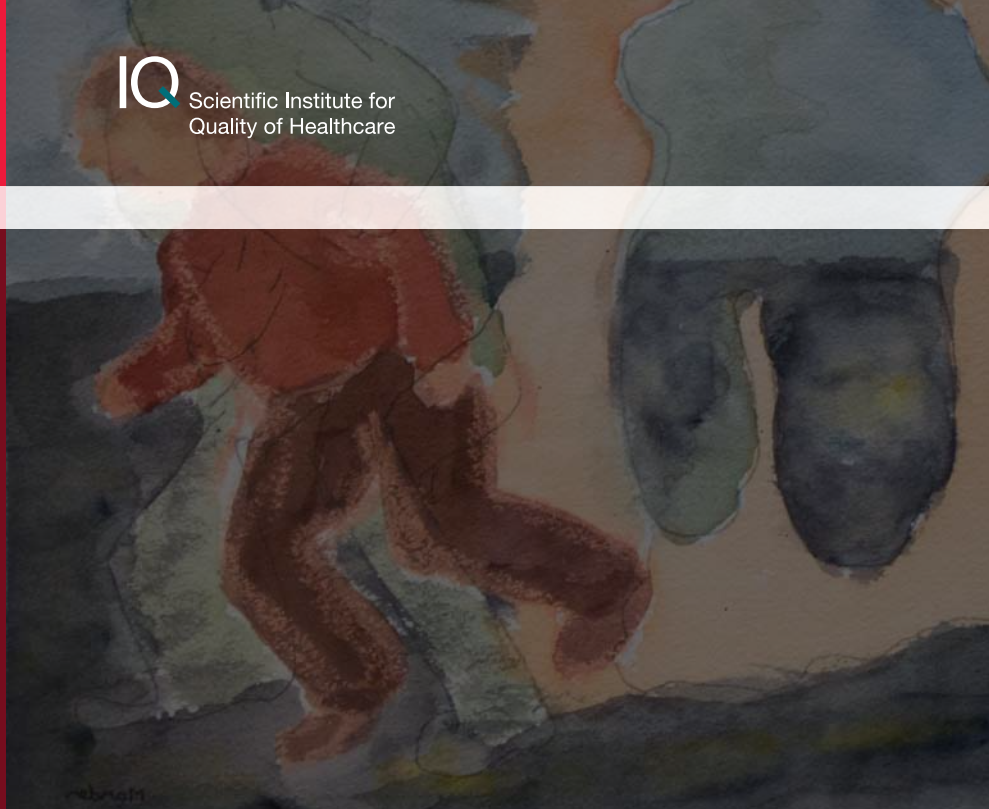
Gerdien Franx werd geboren op 24 augustus 1963 in Amsterdam. In 1981 behaalde zij haar VWO diploma aan het Christelijk Lyceum Dr. W.A. Visser 't Hooft in Leiden en in 1986 het HBOV diploma aan de voormalige Gijsbrecht Akademie, Amsterdam. Vanaf 1995 studeerde ze naast het verpleegkundige werk Gezondheidswetenschappen aan de Universiteit Maastricht, waar ze in 1998 cum laude haar doctoraaltitel behaalde.

In haar eerste banen werkte ze als verpleegkundige in diverse ziekenhuizen in Nederland en Frankrijk. Vanaf 1990 vertrok ze voor anderhalf jaar naar Armenië, toen nog onderdeel van de Sovjet Unie, om voor Artsen Zonder Grenzen een hemodialyse afdeling op te zetten. Later werd zij landcoördinator in Armenië en overzag ze alle projecten van AZG, die vooral gericht waren op kinderen met een verstandelijke handicap en kinderen met post traumatische stress klachten. In 1993, terug in Nederland, rondde zij de opleiding Intensive Care verpleegkunde af in het VU medisch centrum in Amsterdam, waar zij tot 2001 werkte als ic-verpleegkundige.

In 1998, na het behalen van haar doctoraaltitel, begon Gerdien haar werk in het Trimbos-instituut als wetenschappelijk medewerker. In 2002 onderbrak ze dit voor een jaar om als visiting-researcher aan de Universiteit van New South Wales in Sydney te werken aan een studie over patiëntenparticipatie bij richtlijnen. Vanaf 2006 is ze als promovenda verbonden aan de afdeling IQ Healthcare van het UMC St Radboud Nijmegen.

Vanaf 2007 is Gerdien programmahoofd Zorginnovatie in het Trimbos-instituut, waarmee zij de eindverantwoordelijkheid draagt voor de ontwikkeling en implementatie van de landelijk multidisciplinaire richtlijnen in de GGZ, die samen met de beroepsverenigingen en patiëntenorganisaties tot stand komen. Diverse Doorbraakprojecten, het onderwerp van dit proefschrift, werden de afgelopen acht jaar door haar team en vele professionals uitgevoerd en geëvalueerd. Andere projecten van haar waren gericht op thema's als patiëntenparticipatie, zorgstandaarden en ketenzorg voor depressie.

Begin 2012 werd Gerdien geselecteerd als Harkness-fellow in Healthcare, Policy and Practice van het Amerikaanse Commonwealth Fund. Vanaf september werkt zij in de Department of Psychiatry van Columbia University in New York aan een studie over de implementatie en financiering van geïntegreerde programma's voor psychische en somatische zorg.



In de Geestelijke Gezondheidszorg bestaat een grote kloof tussen de beschikbare kennis over werkzame behandelingen (wat men weet) en de dagelijkse praktijk (wat men krijgt). In Nederland ontvangt slechts 25-50% van de patiënten met psychische problematiek bewezen effectieve zorg. Richtlijnen worden gezien als hulpmiddelen om beschikbare kennis in de praktijk te implementeren en daarmee zowel de zorg als de gezondheid van patiënten te verbeteren.

De hoofdstukken uit dit boekje vormen een proefschrift over de implementatie van aanbevelingen uit de landelijke multidisciplinaire richtlijnen voor depressie en schizofrenie. De methode die hiervoor werd gebruikt is de uit Amerika overgenomen Doorbraakmethode. Groepen hulpverleners uit huisartspraktijken en GGZ instellingen werden begeleid om in ruim een jaar tijd richtlijnen in hun praktijken in te voeren. In diverse studies werd nagegaan of dit doel werd bereikt, of patiënten ervan profiteerden en of investeringen in dergelijke implementatie projecten lonen.