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Impact of implementation science in healthcare: an exploration

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7 November 2012, Edinburgh

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Key questions

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1. What are major challenges for decision makers in healthcare?

2. What has implementation science to offer and what has still to be done?

3. What has been the impact of implementation science on decision makers in healthcare?

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Dutch healthcare

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- Private healthcare providers
- Private healthcare insurers
- Strong primary care
- Many guidelines and indicators
- Complex regulation
- High and rising costs
- Some elements of market

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What are current challenges for policy makers and healthcare providers

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Challenges for national and regional policy makers

- Control rising costs/ public expenditures
- Prevent workforce shortages
- Protect patients' safety in healthcare

Challenges for healthcare providers

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- Implement evidence-based practice
- Improve coordination of patient care
- Enhance patient-centredness of services

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What has implementation science to offer and what has still to be done

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Control of rising healthcare costs: what do we know?

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Do standard economic laws also apply to healthcare?

E.g.

- Higher price ➔ higher volume of services
- Fixed budget ➔ lower production (waiting lists)
- Monopoly ➔ more profits for provider
- Transparancy of price/quality ➔ more rational decision making

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Dutch experiment 2006: partial introduction of market principles

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- Competition between health insureres
- Competition between healthcare providers
- Negotiation about price and volume of some services

Some changes since 2006:

- Mergers of health insurers: from 40 to 5
- Reduction of waiting lists
- Steep increase of low cost procedures in hospitals
- Increased prices for some services

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Impact of financial incentives in healthcare: a Cochrane review

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- N=32 studies in 4 systematic reviews suggest that financial incentives may be effective for changing healthcare
- Most effects found in: additional payment for specific patient or service, meeting a pre-specified standard of healthcare or change
- Studies had low to moderate methodological quality

Flodgren et al. An overview of reviews evaluating the effectiveness of financial incentives in changing healthcare professional behaviours and patient outcomes. Cochrane Libary 2011

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Can we reduce cost and improve quality of healthcare simultaniously?

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- Stop non-effective procedures
- Improve technical efficiency
- Improve use of efficient procedures

Dutch Ministery of Health establishes knowledge centre for "sustainable healthcare" in 2013

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Healthcare workforce shortages: more delegation of tasks to support staff?

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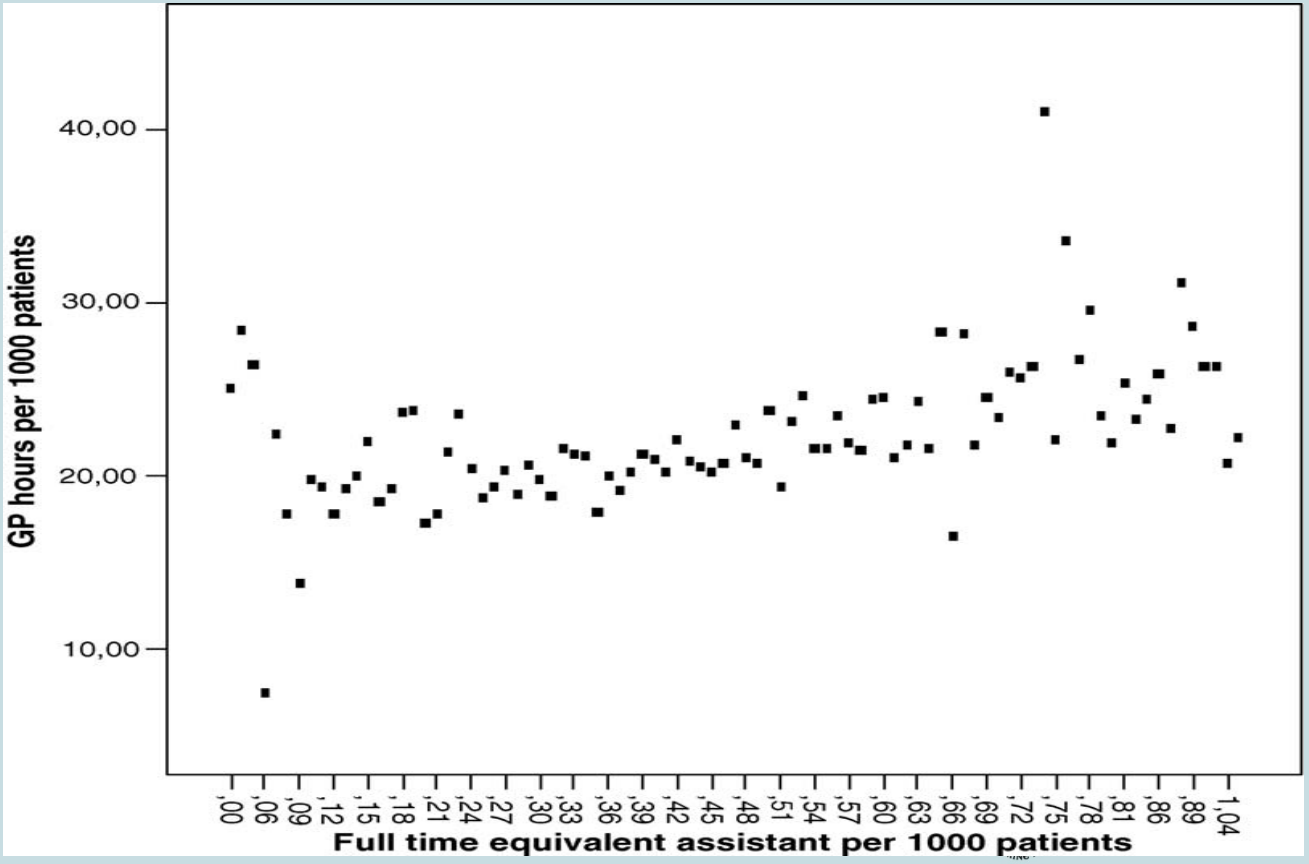
Weekly hours worked of primary care physicians versus volume of non-medical assistance in the practice (Wensing 2006)



How to optimize effectiveness of patient care teams?

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- More knowledge and competencies (e.g. pharmacist)
- Better coordination of patient care (e.g. case manager)

Medical Care Research and Review
http://mcr.sagepub.com/

Review Article: Effectiveness of Patient Care Teams and the Role of Clinical Expertise and Coordination : A Literature Review

Marije Bosch, Marjan J. Faber, Juliette Cruijsberg, Gerlienke E. Voerman, Sheila Leatherman, Richard P. T. M. Grol, Marlies Hulscher and Michel Wensing

Med Care Res Rev 2009 66: 5S originally published online 19 August 2009
DOI: 10.1177/1077558709343295

The online version of this article can be found at:
http://mcr.sagepub.com/content/66/6_suppl/5S

Examples of ongoing studies in our centre
(Miranda Laurant)

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- Physician assistants versus (non-specialist) physicians in hospitals: a cluster randomized trial

- Teams with nurse specialists versus physician-only teams in primary care out of hours care: a comparative evaluation

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Radboud cardiac surgery case

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- **What happened**: high mortality in cardiac surgery department, inspection closed department, change of leadership and surgeons
- **What were outcomes**: dramatic reduction in mortality and complications rates
- **How was the improvement achieved:** we don't know, no research

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Patient safety in Dutch healthcare

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- **Hospital care**: major programs to measure and improve patient safety, but no reduction of hospital-related mortality

⇒ **more effective improvement programs needed**

- **Primary care**: patient safety is low on the policy agenda

⇒ **interventions needed to put this on the political agenda**

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Implementation of evidence-based practice

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Many studies:

- Continuing professional education
- Audit and feedback
- Reminders
- Decision support systems

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Computerized clinical decision support systems

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	Number of trials	Improved processes	Improved outcomes
Primary prevention	41	63%	29%
Diagnostic test ordering	35	52%	31%
Drug prescribing	65	64%	21%
Drug monitoring and dosing	33	60%	21%
Acute care management	36	63%	15%
Chronic care management	55	63%	15%

http://www.implementationscience.com/series/CCDSS

Heterogeneity of organization of generalistic healthcare

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- Range of clinical activities
- Preventive services offered
- Out of hours care
- Information technology
- Registration of patients
- Number of physicians
- Nurse involvement
- Practice size
- Reimbursement system
- Etc.

Primary care characteristics and population-orientated health care across Europe:
an observational study

Jan van Lieshout, Margalith Goldfracht, Stephen Campbell, Sabine Ludt and Michel Wensing

ABSTRACT

Background
The number of patients with chronic diseases is increasing which poses a challenge to healthcare organisations. A proactive, structured, and population-orientated approach is needed: the chronic care model (CCM) provides such a framework.

Aim
To assess organisational conditions for providing structured chronic care according to the CCM across different healthcare systems.

Design of study
International observational study.

Setting
A stratified sample of 315 primary care practices in 10 European countries and Israel in 2008 and 2009.

Method
Practice questionnaires and interviews. Outcome measures were mean practice scores on CCM domains per country, as a percentage of the maximum score, and the influence of practice size and urbanisation on these scores.

Results
Practice size showed large differences with the largest practices in Spain, England, Finland, and Israel. These countries, with a strong primary care orientation, had most physicians and staff involved per practice. The CCM domains 'clinical information systems' and 'decision support' had total practice means of 90%; other domains scored about 50%. Spain and England scored above average on almost all domains. Practice size and urbanisation had little impact.

Conclusion
Characteristics for chronic care delivery differed for most CCM domains. The most common characteristics related to computerisation, providing a good starting

INTRODUCTION

Ageing populations, effective health technologies, and poor lifestyle have contributed to the increasing number of patients with chronic diseases. Comprehensive and coordinated management of chronic disease is a major challenge for healthcare systems, covering the full range of health care from prevention and early diagnosis to treatment of established disease. A proactive, structured and population-orientated approach is needed, with important implications for the organisation of health care. Two widely accepted frameworks on the organisation of chronic care and prevention are the chronic care model (CCM),[1] and the patient-centred medical home (PCMH).[2] In the CCM, outcomes of disease management are seen as the result of interaction between a proactive practice team and an active patient. The CCM seeks to coordinate activities

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Chronic care model

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Community resources and policies	Presence and link to community programs
Healthcare organization	Adequate reimbursement
Selfmanagement support	Patients are well informed and in control of their treatment
Delivery system design	Planned healthcare delivery involving non-physicians
Decision support	Access to clinical guidelines and expert consultation
Clinical information systems	Registries, reminders, feedback linked to patients with chronic diseases

Cardiovascular performance depends on clinical information systems

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	Practice with low CCM score	Practice with high CCM score
Risk factor registration	72%	75%
Antiplatelet therapy	78%	89%
Influenze vaccination	45%	72%

Data refer to 4563 patients with coronary heart disease from 273 primary care practices in 8 countries. Cardiovascular performance based on clinical audit of medical records, practice organization data on self-report questionnaires.

Van Lieshout et al. BMJ Open 2012;2:1334.

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Challenges for researchers

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- Discover how to tailor complex interventions to barriers and enablers for change
- Discover how to involve organisations, professions, healthcare systems in improving healthcare
- Show the impact of implementation research on outcomes of healthcare

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Tailoring implementation interventions to barriers and enablers

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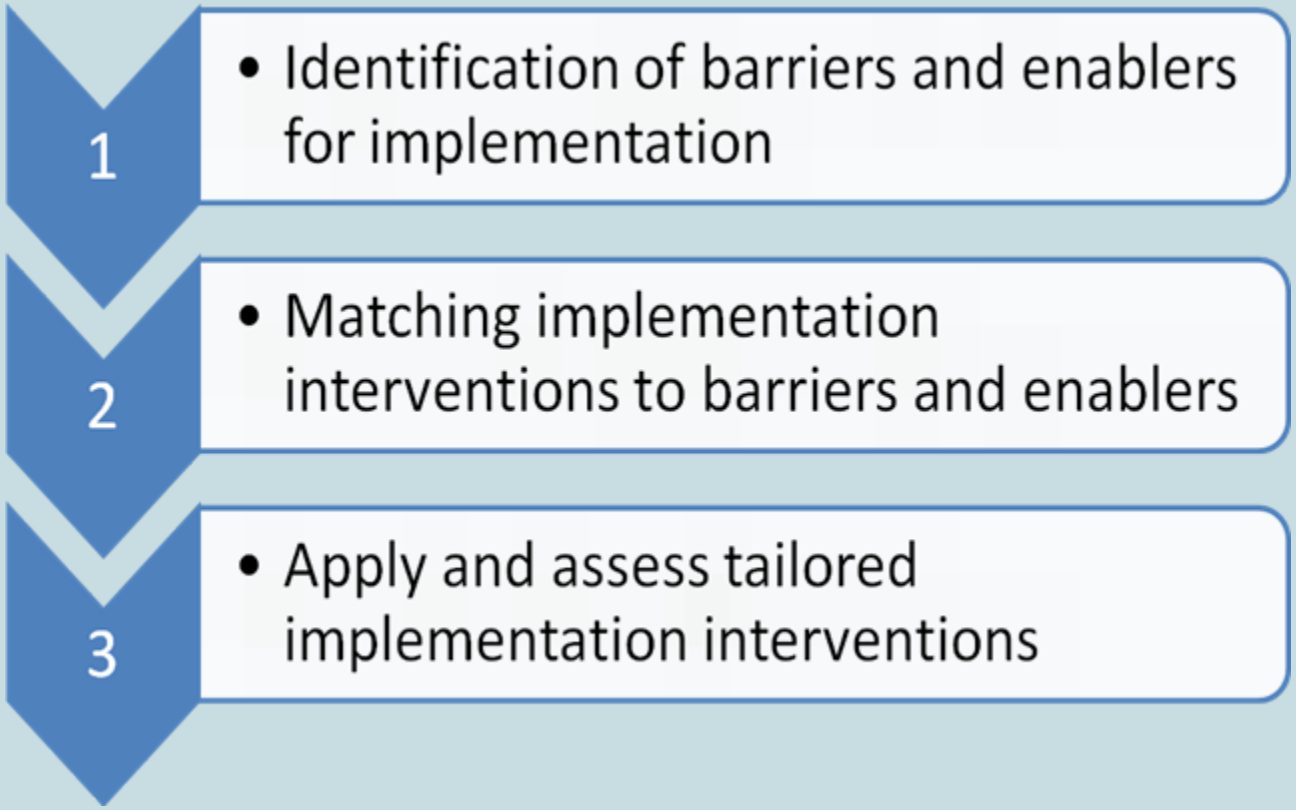

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Determinants of change in practice ("barriers and enablers")

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May be related to:

- guidelines /knowledge
- professional behaviour
- interactions of health professionals
- organisation of healthcare
- health system arrangements
- patient behaviours
- social and political environment

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Multidisciplinary approach is required to improvement in healthcare

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- **Engineering:** innovation of products/services
- **Epidemiology:** population-based figures
- **Psychology:** individual motivation, cognitions, cognitive biases
- **Social psychology:** team functioning, social comparison
- **Economics:** price, transparancy, market structure
- **Management**: leadership, processes design, organisational culture
- **Sociology:** social networks, professional development
- **Politicology:** societal agenda, media influences

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Methodological research

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1. Brainstorming by the implementation team
2. Analysis of performance data
3. Focus groups (professionals)
4. Focus groups (patients)
5. Observation
6. Interviews of professionals
7. Interviews of patients
8. Simple questionnaires
9. Detailed questionnaires.

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Wensing et al. Implementation Science 2011, 6:103
http://www.implementationscience.com/content/6/1/103

IMPLEMENTATION SCIENCE

STUDY PROTOCOL Open Access

Tailored implementation for chronic diseases (TICD): A project protocol

Michel Wensing[1*], Andy Oxman[2], Richard Baker[3], Maciek Godycki-Cwirko[4], Signe Flottorp[2], Joachim Szecsenyi[5], Jeremy Grimshaw[6] and Martin Eccles[7]

Abstract

Background: The assumption underlying tailoring is that implementation interventions are most helpful if these effectively address the most important determinants of practice for improvement in the targeted setting. The aim of the Tailored Implementation For Chronic Diseases (TICD) project is to develop valid and efficient methods of tailoring implementation interventions to determinants of practice for knowledge implementation in chronic illness care.

Methods: The TICD project has organized the planned empirical research in three work packages that follow the three main steps of tailoring: identification of determinants of healthcare practice, matching implementation interventions to identified determinants of practice, and applying and assessing the tailored implementation interventions. These three key steps of tailored implementation will be applied to targeted chronic conditions in five different healthcare systems: cardiovascular disease in the Netherlands, obesity in England, depression in Norway, chronic obstructive pulmonary disease in Poland, and multimorbidity in Germany. The design and interpretation of empirical research will be informed by systematic reviews of previous research on tailoring implementation interventions.

Discussion: The TICD project will provide much needed evidence on the advantages and disadvantages of different methods of identifying important determinants of practice and selecting implementation strategies that take account of those. It will also provide five rigorous evaluations of tailored implementation interventions for five different chronic conditions.

Background

Tailored implementation interventions are strategies that are designed to achieve desired changes in health-interventions resulting from a tailoring process. Little research evidence is available regarding how tailoring is best done in relation to implementation interventions.

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Concluding words

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Papers to be written, e.g. …

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- How to stop doing things non-effective activities
- How to optimize effectiveness of patient care teams
- How to tailor to local barriers for change
- Evidence of impact of implementation science on healthcare

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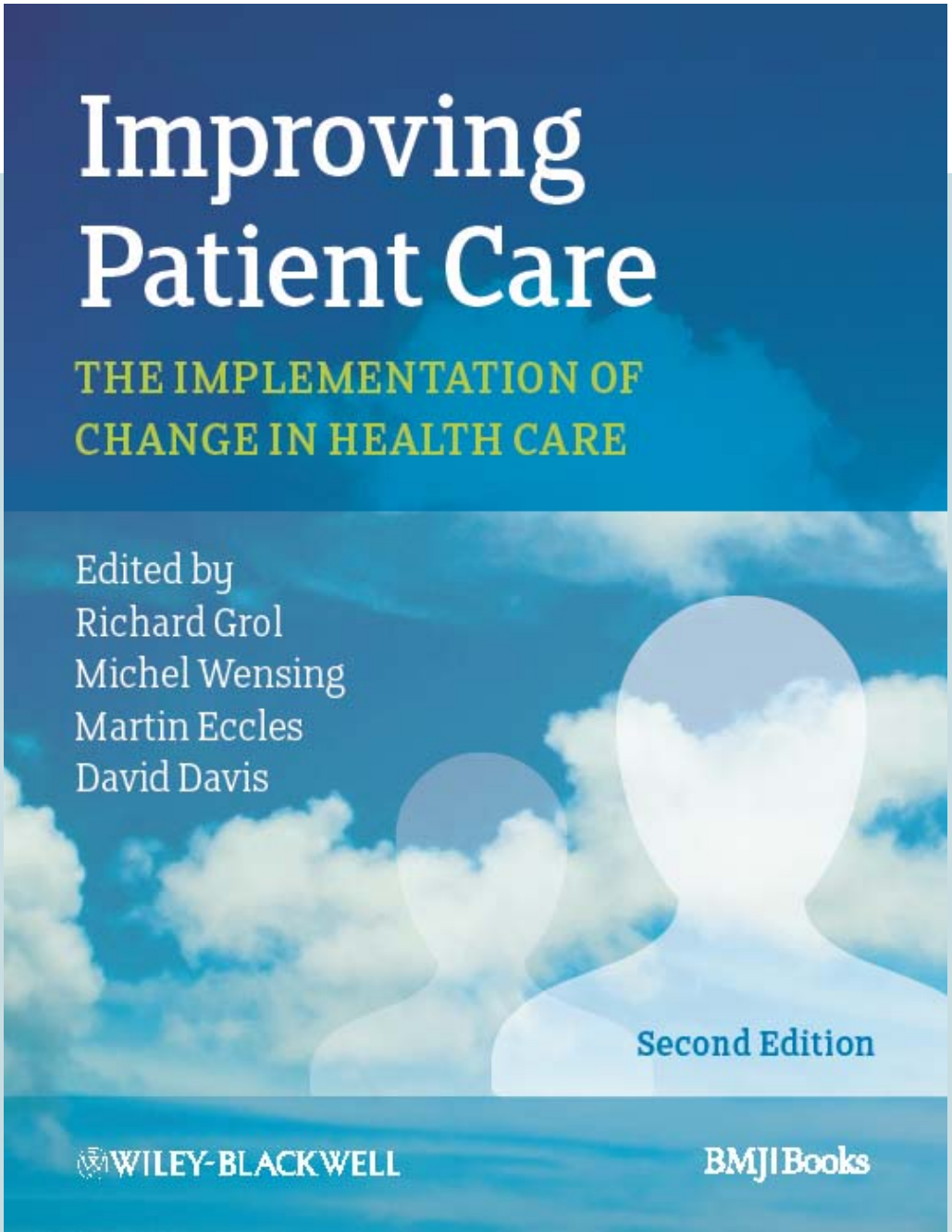

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