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● **Guidebook on Implementation
of Quality Improvement
in General Practice**

Edited by:
Andrée Rochfort
Violetta Kijowska
Katarzyna Dubas

Guidebook on Implementation
of **Quality Improvement**
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Andrée Rochfort, Violetta Kijowska, Katarzyna Dubas

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Introduction

Quality improvement (QI) processes are fundamental elements of modern general practice/family medicine that are undertaken to improve and assure the safety, quality, and cost efficiency of health care.

Whether you work in an isolated rural practice setting or in a large primary care team in an urban environment, quality and safety activities are at the core of the care you deliver. Every episode of clinical care is an opportunity for quality assessment and improvement by the individual health professional and by health organisations.

Lapses in quality and safety may have significant consequences for patients, their families and carers and for the health professional. In recent decades, advances in professional training for general practice have been central to bringing about improvements in the quality of care.

However, quality improvement initiatives need to be embedded and integrated into our everyday work, for the entire duration of our medical careers. EQuIP, the European Association for Quality and Safety in General Practice/Family Medicine, a Wonca Europe Network, has at the core of its principles that quality improvement is a professional responsibility.

Family physicians/general practitioners (FPs/GPs) also face increasing demands and expectations that require them to be actively involved in quality improvement activities.

Quality improvement is about providing person centered, safe and effective care while managing healthcare resources more efficiently. Implementing change in a meaningful way may begin with an individual health professional. The overall strategy for improvement also needs to involve the extended primary care team who care for patients and the wider environment.

This guidebook on implementation of quality improvement in general practice intends to illustrate to you the scope of quality improvement in the context of general practice and introduce you to practical means of assessing and improving the quality of care where you work. There are diverse methods, tools and approaches to the QI processes in general practice, which results in multiplicity of obstacles that can be met on the way towards better quality of delivered care. You may wish to address a specific obstacle to quality improvement or to develop a new system of managing patients with a chronic condition. The guidebook is targeted at regular GPs looking to improve the quality of their practice using either an individual approach or a team based approach.

The guidebook has three interrelated sections. The first section presents general concepts of quality improvement in family practice. Emphasis is put at the GP's education process and competency profile. Examples of some successful quality improvement projects in European countries are described. The second section provides an overview of the quality improvement methods and tools that can be used at an individual GP and/or practice level. The practical implementation of the quality cycle is described. Issues of patient safety and approaches to overcoming possible barriers in implementing QI initiatives are highlighted.

The third section provides additional literature for those interested in further development of in-depth quality studies and includes a glossary of terms. Each chapter has an associated comprehensive set of references. The guidebook is aimed at helping regular GP to develop the necessary knowledge and skills in order to understand and manage basic quality improvement methods. It provides an overview of the most important theoretical aspects and practical recommendations that every 'beginner' in the field of quality improvement should find useful.

Some specific examples of quality improvement initiatives are illustrated in this guidebook. The authors expect that there are many other examples of successful QI projects at regional / community level and at practice level. There is an opportunity for you to contribute further to this list by sending details of your quality improvement activity to be shared with others on a section of the EQuIP website which will function as a repository for interesting, relevant and valuable examples of QI across European general practice.

Editors



PART I

Concepts & Examples

Chapter 1

Quality and Medicine

Richard Baker

Learning objectives:

- ability to describe in brief the evolution of approach to quality in medicine
- ability to describe in brief the history of quality improvement in Family Medicine

Quality improvement is an integral feature of modern general practice

The place of primary care in health systems is now well established. It helps prevent illness and improve health, and can reduce the overall costs of care through reducing demand for specialist interventions. General practice is the core discipline of primary care, and general practitioners therefore have a key role in the effectiveness and efficiency of health systems. Yet the task facing general practitioners is growing more challenging by the day.

Firstly, the proportion of people aged 65 or older in the population of most countries is increasing, and older people have greater need for health care. Secondly, economic constraints have become more acute, making the expansion of general practice and increased resourcing of primary care difficult. Thirdly, scientific advances mean that not only more patients, but patients with more complex problems, can be managed in primary care, and consequently general practitioners have to absorb the new research evidence and apply it in the midst of already busy and demanding working lives. Nevertheless, despite these challenges, policymakers and funders need the consistent delivery of high quality, safe general practice in order to sustain national health care systems.

It follows that general practitioners cannot restrict their responsibilities to individual patient care. General practices are small enterprises, and they need management and leadership just as much as larger organizations. Furthermore, each general practice cares for patients with countless different conditions, even those practices that are restricted to certain patient sub-groups. Consequently, general practices need effective quality improvement systems rather than occasional, isolated quality improvement projects alone. Such systems must be applicable to almost any clinical condition, have a strong patient experience focus in view of the many patient interactions with the practice, and be simple and low cost to operate given the context of multiple small providers. This new guidebook sets out to address this demanding challenge.

Some history

Quality, of course, has always been a concern of doctors. This has been expressed in various ways, and for example can be found in the Hippocratic Oath dating from 430-330 BC – *'I will use my power to help the sick to the best of my ability and judgment'*. However, it was not until the emergence of modern medicine in the 19th and 20th centuries that quality improvement became a systematic process and itself the subject of research. Florence Nightingale is often given credit for initiating quality improvement, through her work in the 1850s using statistical methods to explain causes of death of soldiers during the Crimean war. Her methods to bring about change included the education of nurses, establishing good practice on the design of hospitals, and influencing decision makers from Queen Victoria and her government ministers downwards. At the beginning of the 20th Century, Ernest Codman, a Boston surgeon, published annual reports of errors he had made so that others could judge the quality and outcome of care. His peers of the time did not welcome his openness, and in 1911 he left the Massachusetts General Hospital to found his own hospital. In the first half of the 20th century, the routine collection of mortality and other statistical data became common in many countries, and inquiries and investigations into aspects of care took place and contributed to professional practice and national policies, examples including maternal mortality and anaesthesia related deaths. After the second world war, the pace of development accelerated. Paul Lembcke, a US public health physician, showed in the 1950s how medical audit could lead to better clinical decision making in a classic study of hysterectomy. Avedis Donabedian set out the framework for quality improvement, including a definition of quality, a description of methods, and the now universally adopted classification of care into structure, process and outcome.

Around the same time, progress began in general practice. Influential observational studies of quality in general practice were undertaken in the US by Peterson, in Canada by Clute, and in England by Collings. These documented the strengths and weaknesses of general practice in those countries and triggered major reforms that helped establish the basis for quality improvement, including continuing education and the beginning of primary care teams. During these years, general practice was itself developing. Initially regarded as a less important and less prestigious branch of medicine, at varying speeds and to varying extents, in most developed countries general practice has become better resourced and appreciated. Professional leadership has strengthened through the creation of associations and colleges. Research into the discipline of general practice and how it can be improved, blossomed. After a small number of enthusiastic general practitioner exponents of quality improvement showed what could be done in their own practices, leadership was provided through a partnership between researchers and general practice organizations. For example, in Europe, the role of WONCA Europe and its network organization EQuIP has been fundamental.

The European Association for Quality in General Practice/Family Medicine (EQuIP) was established in 1990 under its first chair, Richard Grol, Professor of Quality of Care at Nijmegen University. He was the outstanding researcher of quality in general practice, and was an outstanding leader as well, a combination of qualities that gave EQuIP impetus and impact. Through the conduct of demonstration projects and interaction with influential decision makers, quality improvement in general practice took root in general practice in most European countries. Under its current president, Tina Eriksson, the aim of EQuIP remains to promote quality improvement in general practice among all countries in Europe. Its activities include steps to influence policy within countries and across Europe, to provide practical methods, and to provide leadership and encouragement to GPs in the field of quality improvement. Methods developed by EQuIP include an instrument to measure patient experience of general practice designed specifically for countries in Europe and available in European languages (EUROPEP), the European Practice Assessment (EPA), a method for assessing practice management amongst European general practices, and the International Family Practice Maturity Matrix, an organizational assessment aimed at stimulating quality improvement in primary care. There are also conferences and meetings, and opportunities for training and networking. In 2011, WONCA Europe approved a proposed change of name and remit of the association to include patient safety, so that without changing “EQuIP”, it became the European Association for Quality and Safety in General Practice/Family Medicine.

Over the last decade, increasing support for quality improvement activities has come from international agencies such as the Institute for Healthcare Improvement, the Picker Institute Europe, and country specific groups such as the Primary Care Foundation. These draw on a variety of research and business experience to offer services, advice and support. There are journals specific to quality, including BMJ-Quality and Safety and Implementation Science, and even a journal specific to primary care – Quality in Primary Care.

The future

But does all the activity of recent decades constitute progress in quality in general practice? Almost certainly it does, although it is difficult to disentangle the effects of quality improvement activities from other interventions such as improved training of general practitioners or increased investment in facilities and electronic record systems. In many countries, the development of general practice has been linked with improvement of quality; in order to establish and maintain an accepted role in the health system, general practice has had to demonstrate quality. The development of general practice and the development of quality improvement have gone hand in hand. Many health system funders now expect general practices to deliver care to determined standards, and to have the systems in place to enable this to happen.

However, the goal of embedding quality improvement throughout general practice is not yet achieved. It would be inaccurate to claim that all medical practices and medical practitioners, or indeed all general practices and general practitioners across Europe are proficient in quality improvement; even those who are proficient do not necessarily use the methods of quality improvement on a routine basis to monitor, maintain and improve health outcomes. Much remains to be done before the full potential of quality improvement is realized.

Encouragement, leadership, training and support all have crucial roles to play. The general practitioner, by definition, cannot be an expert in everything, and this applies to quality improvement as much as it does to neurology or ophthalmology. Nevertheless, every general practice should have sufficient expertise to understand and manage the quality of the care it provides. Small practices will find it difficult to acquire and apply such expertise, and it is time that experiments are conducted of different organizational forms that can help to bring small general practices together into affiliations or partnerships. There may be practical ways in which quality improvement expertise can be more efficiently shared between practices. Even so, it will be necessary for every GP to be proficient in the principles of quality improvement, and to be active participants in quality improvement activities. The challenges faced by health care systems are so great that quality general practice is now imperative and everyone in general practice must be a driver of quality; there is no room for passengers in delivering quality. The following chapters set out methods and approaches that general practitioners will find helpful.

Key messages for GP practice

- The challenges faced by general practitioners have been increasing due in part to factors related to economic constraints, demographic changes and scientific advances.
- In many countries, the development of general practice has been linked with systematic documentation and demonstrations of improvements in quality in order to help establish an accepted role for general practice in a health system.
- Quality improvement is an integral feature of modern general practice. In Europe, a WONCA network organization – The European Association for Quality and Safety in General Practice/ Family Medicine (EQuiP) has a leading role.
- A challenge for the future is for all general practitioners to use quality improvement methods on a routine bases to monitor, maintain and improve health outcomes. Encouragement, leadership, training and support all have crucial roles to play.

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Chapter 2

Importance of Quality Improvement in General Practice

Tina Eriksson

Learning objectives:

- understanding why GP/FP are an important target group for quality improvement
- ability to list the main reasons for introduction of quality improvement in GP/FM

Quality improvement (QI) is systematic, data-guided activities designed to bring about positive changes in the delivery of care. It is a clinical and managerial opportunity and a key component of professional accountability.

GPs are obliged to engage in QI. Primary care is an important part of health care systems, and the one that deals with the initial assessment and continuing care of populations with chronic medical conditions and with undifferentiated symptoms. Therefore, GPs/FPs have the capacity to improve the health of the populations they serve.

During the last three decades, QI has grown in conceptual importance in general practice, as well as in other areas of medicine and many other aspects of society. The importance of QI in GP/FM is increasing due to demographic change and the growing burden of chronic disease, such as Diabetes Mellitus (DM), Chronic Obstructive Pulmonary Disease (COPD) and Ischaemic Heart Disease (IHD) globally and in Europe. Prevention of chronic disease and care for patients with chronic conditions are at the core of GP/FM, and it is crucial that the care delivered is evidence informed.

Many different aspects of GP/FM are targeted for QI, for example the various aspects of clinical

practice (clinical indicators, prescribing data, prevention), organizational practice and service, patient satisfaction, patient safety, the doctors own health, work satisfaction among GPs and staff, and attempts to assess the quality of the psychosocial part of the consultation.

Concerning the possible activities aimed at improving or maintaining quality, a wide range of methods and tools have been used and tested, starting with the Plan-Do-Check-Act cycle, or quality improvement cycle (see part II). Educational measures, peer support, team building, external facilitation and control have been introduced to support QI. More recently methods based on Information and Communication Technologies (ICT), such as continuous capture of quality data and decision support systems are under development – sometimes even integrated into the Electronic Health Record.

In several European countries, practice accreditation schemes are mandatory, and recently, EQuIP published results of a European survey on the subject.

QI is an established part of European General Practice, and it is difficult to argue against the fact that GPs have an obligation to take on the task of assessing different aspects of their work and respond to address substandard care. In the coming years, the ICT development will increase the GPs potential for QI activities with hopefully less efforts.

Though not all schemes have proved efficient at improving patient outcomes, there is growing evidence that the methods are improving clinical GP/FM overall.

Key messages for GP practice

- ❑ QI is systematic, data-guided activities designed to bring about positive changes in the delivery of care.
- ❑ QI is a clinical and managerial opportunity amended from and to a key component of professional accountability.
- ❑ QI is a way to ensure that the delivered care meets evidence based and evidence informed standards.
- ❑ QI may target many aspects of GP/FM, such as clinical indicators, prescribing data, prevention, organizational practice and service, patient satisfaction, patient safety, the doctors own health, work satisfaction among GPs and staff.
- ❑ QI methods and tools may be educational measures, peer support, team building, external facilitation and control, most often with a basis in the Plan-Do-Check-Act QI cycle.
- ❑ In the future Information and Communication Technologies (ICT), such as continuous capture of quality data and decision support systems will be integrated into the Electronic Health Record and thus widely used.

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Chapter 3

Quality Improvement Teaching

Marija Petek-Šter, Janko Kersnik

Learning objectives:

- ability to describe how QI can be taught
- ability to understand what are the benefits of QI education in GP/FM

Introduction

The general aim of medical teaching is to implement evidence, clinical guidelines, new procedures or best practice to make patient care more effective, efficient, safe and patient-centered. Medical education alone is not enough; knowledge, skills and attitudes on continuing quality improvement are needed to assure that the growing body of research evidence is introduced into daily practice. Appropriate interventions comprise different types of activities intended to improve the knowledge and skills of the target group.

Quantity of acquired medical knowledge increases during basic medical training, but gradually decreases over subsequent years if not supported by adequate continuing professional development. During undergraduate and postgraduate courses, acquired knowledge and skills are only weakly associated with actual performance, so actual performance has increasingly become a yardstick of educational outcomes. Continuing education has gradually developed into continuing professional development with the focus on learning needs of the individual care provider.

Significant variations arise when introducing research evidence and clinical guidelines into routine daily practice. Data show that many people

do not receive up-to-date care, and they may even sometimes receive unnecessary care or even harmful interventions. Substantial evidence suggests that it is possible to change providers' behaviour, but these changes generally require comprehensive approach at different levels (physician, practice team, health system) and should be tailored for specific settings and target groups.

Recently, in basic and continuing medical education, passive, large-scale teaching methods have been replaced by small-scale, motivational types of education. Motivational education is mostly based on adult learning theory. These theories assume that adult learners are intrinsically motivated to learn and that they can guide their own process of learning themselves. Adults prefer to learn new insights by means of identifying specific problems that they have experienced in daily practice (problem based learning). One important principle to be regarded in problem-based learning is that individuals have different learning styles. Therefore, relevant education should meet these different learning styles.

Most published QI curricula apply sound adult learning principles and demonstrate improvement in learners' knowledge or confidence to perform QI. The recommendations for teaching QI based on the results of systematic review are:

- Teach collaborative skills
- Facilitate experiential learning (using incremental changes from trial and error)
- Provide learners with opportunities to work closely with colleagues from other disciplines
- Use the basic principles of adult learning and collaborative small tests

The potential impact of teaching quality improvement on processes and outcomes of care is still not proven in larger studies. Although the effect of educational curricula on behaviour may be limited due to complex confounding factors, it is often a necessary first step in a process of implementation of innovations. Education is particularly valuable if it is a part of a broader implementation strategy that includes other interventions promoting change as well.

Methods of teaching QI

There are several methods of teaching QI from provision of educational material to face-to-face detailing. Each of them has its strong and weak points.

Educational materials: publication or mailing of written recommendations for clinical care, including guidelines, audiovisual materials, electronic publications and educational computer programmes. Interactive Internet websites and distant learning programmes are in this category.

Large-scale educational meetings: participation of care providers in conferences and lectures that are large scale. Large-scale meetings focus on the presentation of information in an oral/visual format. This category includes lectures, seminars, presentations, courses and conferences. Participants are usually passive listeners.

Small-scale educational meetings: participations of care providers in workshops, skills training, educational groups, local consensus groups and quality circles or peer review groups outside the practice settings. The aim of these meetings is more functional: that is skills training to learn technical or communication skills

or development of a local consensus. Participants are usually actively involved in small group discussions exchanging and sharing experiences, which promotes learning uptake.

Practice visits: contacts in the providers' practice with the care provider and a trained individual who provides information, instruction and support and sometimes also feedback on current practice. The visitor should be a physician, nurse, pharmacist or other provider involved in actual patient care. This type of education has been applied mainly to rationalise physicians' prescribing behaviour, but also to promote preventive practices. Specific techniques of outreach visits are: interview to investigate baseline knowledge, current practice pattern and motivation to change for the defined set of care, defining clear educational and behaviour objectives, stimulating physician's active participations in educational interactions and provision of positive reinforcement of improved practices in follow up visits.

Opinion leaders: individuals who are seen by other members of the professional group as influential in a specific clinical or professional area may impact on behaviour through educational activities they provide.

Tab. 3.1. Strong and weak points of particular QI methods

METHOD	STRONG POINTS	WEAK POINTS
EDUCATIONAL MATERIALS	- COST EFFECTIVE	<ul style="list-style-type: none"> – Participants are passive, except interactive Internet websites and distant learning programme. – Can support other activities. – Limited evidence on effectiveness.
LARGE-SCALE EDUCATIONAL MEETINGS	<ul style="list-style-type: none"> - INFORMATIVE - COST EFFECTIVE 	<ul style="list-style-type: none"> – Participants are passive. – Justified for introduction of new concepts and practices. – Impact on current practice is limited.
SMALL-SCALE EDUCATIONAL MEETINGS	<ul style="list-style-type: none"> - PARTICIPANTS ARE ACTIVELY INVOLVED - LEARNING SKILLS 	<ul style="list-style-type: none"> – Time and money consuming. – Appropriate to support behavioural change in important targeted areas where motivational peer support is needed. – Some evidence for effectiveness in changing current work.
OUTREACH VISITS	<ul style="list-style-type: none"> - ACTIVE PARTICIPATION - POSITIVE REINFORCEMENT - FOLLOW UP VISITS 	<ul style="list-style-type: none"> – Appropriate to support behavioural change in important targeted areas where expertise on the subject is needed. – Some evidence for effectiveness.
OPINION LEADERS	- CLEAR RECOMMENDATIONS	– Seems to be effective.

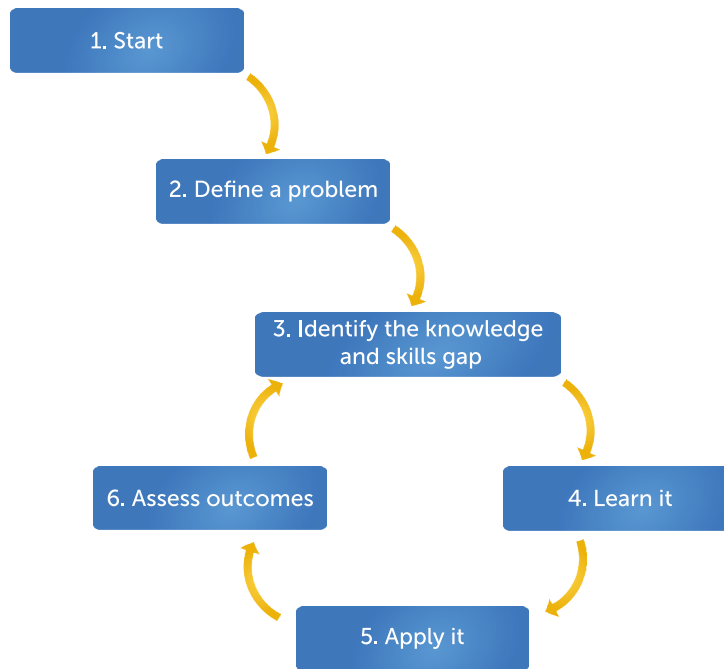


Fig. 3.1. The problem based QI learning cycle. Adapted from: <http://staff.kings.edu/jkmoore/PBL/cycle.htm>

Determinants of effective education

There are several factors that can influence effectiveness of an educational activity:

1. **Duration of education:** Education, lasting less than one day is less effective, than education of several days, but there are minimal differences between education of two days and education of more than 12 months.
2. **Group composition:** The education is found to be more effective if the participants are from one organisation compared to a group of care providers from different organisations.
3. **Needs assessment:** Should be tailored in a way that content (topic) and format of education (educational method based on the aims learning style) are taken into account.
4. **Active participation:** Improves the effectiveness of education, because it increases motivation and provides opportunities to focus the programme on personal learning needs.
5. **Use of opinion leaders:** Opinion leaders have different roles as endorsing educational materials or delivering lectures during educational meetings and seem to have positive effect on educational outcomes.

Benefits of QI education in GP/FM

There is a constant drive to improve the quality of patient care and prevent the occurrence of avoidable errors. Through research we want to improve quality of primary care by improving our understanding and practice of it. Educational activities increase learner's knowledge and skills and help them to integrate QI activities into daily work. QI curricula should provide learners with access to resources that facilitate their QI activities, such as performance data and pre developed process improvement tools.

Conclusions

The concept of quality of care is complex and quality improvement needs medical, contextual and policy evidence. The role of teaching in QI is to change provider's behaviour by learning about quality improvement using different methods. There is some evidence that interactive and personally tailored education is more effective than passive large-scale educational activities. Careful integration of safety and quality competencies across the various activities is critical to assure consistency, avoid duplication and build capacity.

Key messages for GP practice

- Interactive and personally adaptable educational activity is more effective than passive large-scale education.
- In tailoring educational activities the effectiveness of the intervention should be taken into account.
- The impact of educational interventions themselves on behavioural change may be limited. The effect of education on physicians' behaviour can be better if an education is a part of broader implementation strategy of QI.

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Chapter 4

Content of Quality Improvement Education

Zalika Klemenc-Ketiš

Learning objectives:

- getting familiar with the key content of quality improvement education
- ability to list core topics in quality improvement knowledge
- ability to list effective skills in quality improvement
- ability to define most appropriate quality improvement attitudes

Introduction

Several different theoretical frameworks can be used to try to describe what is expected from general practitioners (GPs) or family physicians (FPs) in the field of quality improvement (QI). Some of them are based on health system design (for example crossing the quality chasm model, Bellagio model) while other models deal with teaching QI in continuous medical education (CME) and continuous professional development (CPD) (for example Canadian educational model for medical students (Canmeds)), Accreditation Council on Graduate Medical Education (ACGME), Institute of Medicine (IOM) “health profession education”, and the Joint Policy Document from the European Academy of Teachers in General Practice (EURACT)/European Association for Quality and Safety in General Practice/Family Medicine (EQuiP).

The European definition of Family Medicine, a document created by WONCA in 2005, describes the importance of quality assurance. Yet, the EURACT educational agenda from 2005 does not include QI as a separate topic.

The current situation in Europe on teaching quality remains variable. There are countries within

Europe that do not have this topic as a part of their curricula. Also, there is no systematic inclusion of QI in curricula of European countries and there is no consensus between experts in QI and experts in teaching about which QI topics should be included, their relative importance, and how they might be included in a curriculum.

In this chapter, QI topics and learning objectives are presented, based on literature review, EQuiP cross-sectional survey and professional opinions of QI and experts in medical education.

QI topics

In recent years, CPD is a term preferably used instead of CME. In 2002, EURACT and EQuiP published a Policy Document entitled “Continuing Professional Development Integration of Formal CME and Quality Improvement Initiatives”. Based on its content and a desire to (re)define a set of skills for European GPs/FPs which should be taught in medical training and in CPD, experts in EQuiP were brought together in a working group and over the course of several sessions a list of topics to be included in teaching and in the CPD curricula was produced. These topics are:

1. Dealing with critical incidents
2. Measuring practice performances (bench marking feedback and audit)
3. Assessing the quality of patients’ electronic medical records
4. Implementing (evidence-based – EBM) guidelines
5. Using the Plan-Do-Check-Act strategy for quality projects
6. Patient centred working (starting from patient experience, reflecting on practice performances)
7. Working with the practice population
8. Working in a team (in the practice, in a network and in the community)
9. Leadership of doctors as a motor for QI
10. Teaching the theoretical framework behind QI

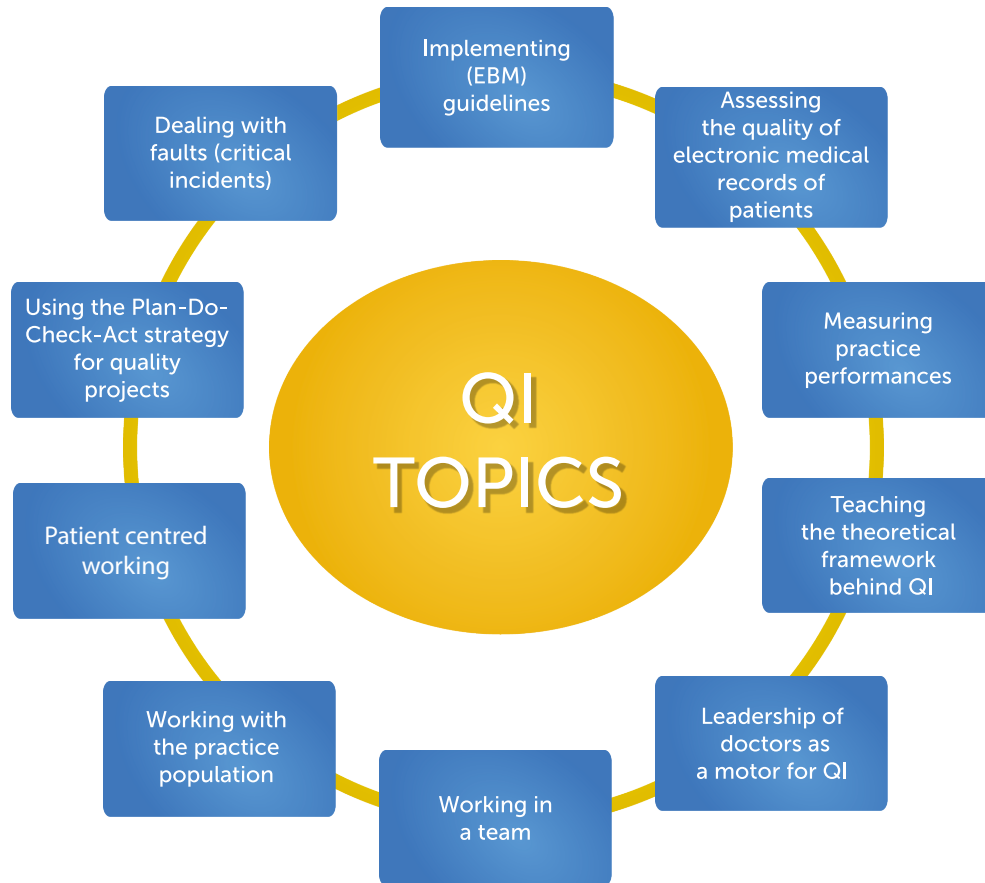


Fig. 4.1. QI topics in General Practice/Family Medicine

Learning outcomes

Based on the literature review, cross-sectional survey and professional opinions of QI and teaching experts, the teaching of quality improvement should be an obligatory part of medical education. It should be integrated at all levels and aspects of medical education, rather than as a separate part. The proposed content of QI education should be divided according to learning outcomes: knowledge, skills and attitudes, each consisting of several areas that shall be covered during medical education. Figure 4.2 presents a schematic framework of learning outcomes.

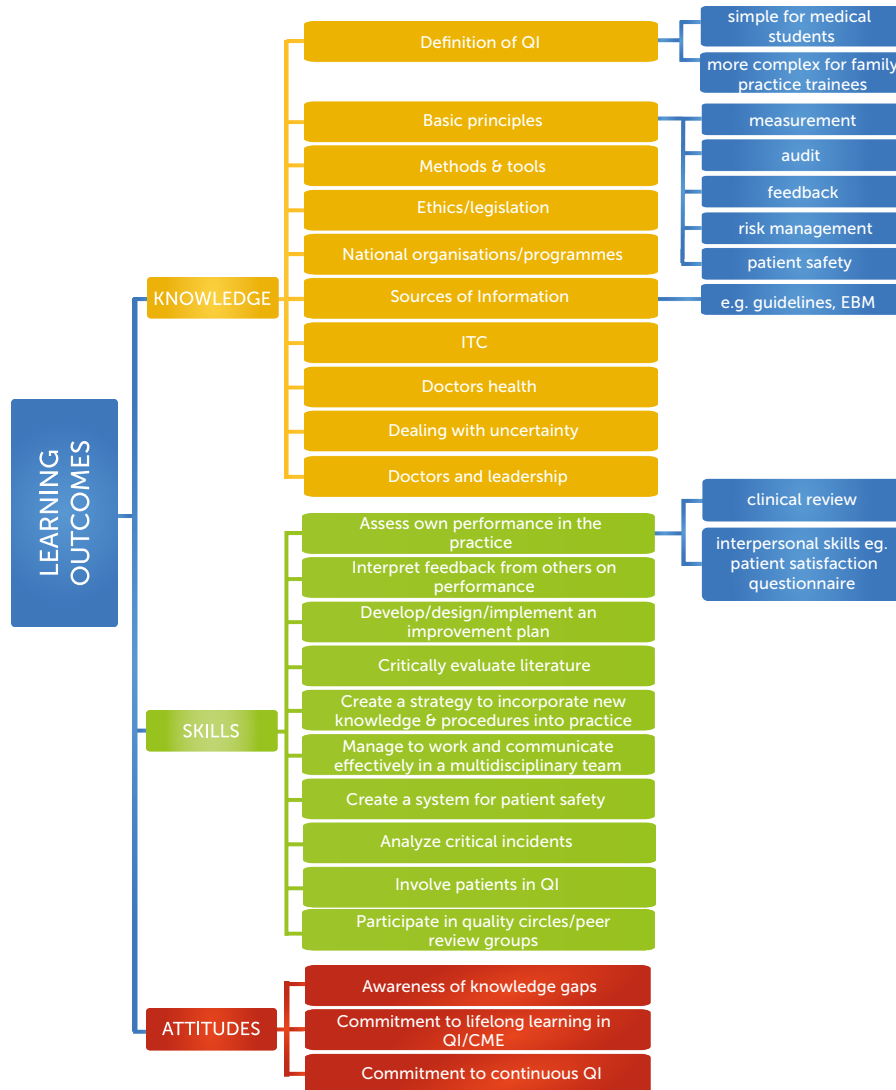


Fig. 4.2. Learning outcomes

Conclusion

The important feature of teaching quality is putting focus on an integrated proactive approach rather than a reactive approach. This means that it is equally important to teach students, residents and established doctors how to assure the quality of their work in a process of continuous quality improvement and not just teach them how to deal with aspects of their work which are of low quality. The ultimate goal of teaching quality should be to help doctors appreciate that the responsibility to deliver high quality of care is their own professional responsibility within the constraints of their health system.

Key messages for GP practice

- QI topics should be a part of the medical curriculum at all levels of education.
- Learning objectives should be divided into knowledge, skills and attitudes.
- Teaching QI should focus on a proactive rather than reactive approach.

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Chapter 5

Continuous Medical Education and Quality Improvement as Part of Continuing Professional Development

Zbigniew J. Król

Learning objectives:

- understanding the concept of CME
- understanding the importance of CME and QI in CPD

There are three aspects related to the changing role of the family physician/general practitioner within the health care system today: continuous developments in medical science; rising expectations of patients and the community and changing characteristics of the health system. All of these influence one common trend in primary care – the increasing need for GPs to be able to demonstrate professional responsibility for provision of high quality care. Figure 5.1 presents a schematic illustration of the changing role of GPs as outlined above.

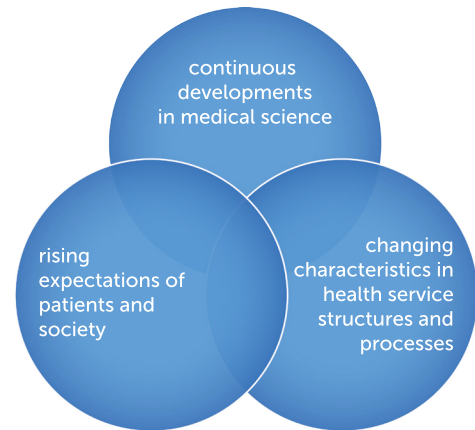


Fig. 5.1. Changing role of GPs within the health care system – current situation

Each of these three dimensions outlined above requires specific procedures, methods and activities for the GP to reach and maintain a level of competence and performance. From the perspective of the health system these dimensions could be described as processes of:

- continuing medical education (CME),
- quality improvement (QI),
- personal development plan (PDP) to assist general practices to respond to health system demands.

CME, QI and PDPs are continuous processes rather than discrete single actions. They are planned activities with clearly defined goals supported or required by health care systems. A real challenge is to combine CME, QI and PDP effectively so they can support and strengthen each other to improve care. That combined process is called Continuing Professional Development (CPD).

At the beginning of the century two groups of experts from WONCA Europe: the European Association for Quality and Safety in General Practice/Family Medicine – EQUIP, and the European Academy of Teachers in General Practice – EURACT, presented a policy document: “*Continuing Professional Development in Primary Health Care: Quality Improvement integrated with Continuing Medical Education*”. The purpose of this document was to give recommendations on the characteristics and conditions needed for effective integration of CME and QI. A description of the tools, methods and activities connected with these processes from the GP perspective will be outlined in this chapter.

Concept of Continuous Medical Education (CME)

In the Joint EQUIP & EURACT policy document we can find a brief definition of CME: “*any and all ways by which physicians learn and change in practice*”. This highlights the expectations and demands on GPs to keep up to date on all developments occurring in medicine that relate to care of patients, the practice population and the wide-ranging needs of the practice in general.

The knowledge and skills acquired during medical education (undergraduate and postgraduate) are insufficient to keep the optimum level of competence throughout an entire individual professional career. GPs, just like other physicians, are expected to effectively engage in lifelong learning strategies. The system of CME in a country needs to reflect the context of that particular health system including policy-makers, decision-makers and health fund-holders in close collaboration with GP national associations and support the development of lifelong-learning skills and competencies. CME programmes, methods and tools should be relevant to a practice profile, address the needs of GPs and include an evaluation of how new knowledge and skills impact on patient care and practice performance.

CME refers to a particular form of education that helps GPs maintain competence and learn newly acquired information and data from research and publications and shared experiences among peers. The methods are widely known and may take place as live events (presentations, lectures, workshops) or written publications as well as online programs and other electronic supported tools like DVDs. CME programmes and methods should be developed and reviewed by a faculty who are experts in the field of general practice/family medicine. CME should include arrangements to motivate individual GPs to be active participants rather than passive recipients of CME.

The GP, as a self-directed adult learner must keep themselves informed and must be able to use her/his own techniques to maintain competencies and continuously seek new possibilities to improve care. The first step in development of this Personal Plan usually begins with a self-assessment of learning needs which are related to the individual GPs practice, practice environment and patient population. The planning process for QI should reflect the everyday practice of individual GPs and take into consideration the needs of the practice team. Data collected in the practice and medical records are good sources for assessing clinical needs and for analyzing and planning processes to gain specific knowledge or skills. Examples of assessment of learning needs are:

- Needs assessment (identifying individual GP needs; patient – community; practice team),
- Publications (written and electronic),
- Courses and conferences (also on-line learning),
- Peers group meetings (case discussion; learning cycle; presentation).

Quality Improvement

There is no single definition of quality in health care that clarifies the discrepancies in terminologies used for quality assessment, quality assurance, quality improvement or quality development.

In the EQuIP & EURACT joint policy document we find a clear description of quality development: *“(…) a continuing process of planned activities based on performance review and setting of explicit targets for good clinical practice with the aim of improving the actual quality of patient care.”*

The “quality tools” most often described refer to methods used to improve work processes as utilised by individuals, teams, organizations or health care systems in continuous quality improvement. Many quality activities in health care were adapted from industry and were started in hospital based healthcare initially. Such tools used in hospitals like brainstorming, cause-and-effect diagrams, nominal group technique, Delphi methods, flow charts, histograms, control and run charts, Pareto diagrams, checklists, patient pathways, or benchmarking for example, are rarely used in GP practice and in some cases irrelevant there. Issues such as effectiveness, feasibility and costs of quality, tools and methods used in health care are sources of much debate. We may ask how much time GPs should spend learning and using these tools. Just because there is no clear answer for general practice yet should not prevent GP’s from making an effort to implement continuous quality improvement.

Quality improvement methods consist of three main elements:

1. performance (guidelines, protocols),
2. changes in clinical practice (audit and feedback, decision support programs),
3. measurement (whether or not improvement has occurred).

Using the well-known Donabedian framework is easier to find proper tools:

- STRUCTURE
- PROCESS
- OUTCOMES

Table 5.1 presents the above described framework of quality and relevant examples applied to general practice.

Tab. 5.1. Donabedian's model of quality

CONCEPT	DESCRIPTION	EXAMPLES
STRUCTURE	<ul style="list-style-type: none"> - PREMISES - EQUIPMENT - HUMAN COMPETENCES - PRACTICE ORGANIZATION 	<ul style="list-style-type: none"> - national safety regulations - re-certification and accreditation schemes - medical record system - teamwork - peer groups
PROCESS	<ul style="list-style-type: none"> - ACTUAL DELIVERY OF CARE 	<ul style="list-style-type: none"> - implementing clinical guidelines and protocols - promoting peer reviews of GP - promoting quality cycles - practice audits/visits
OUTCOME	<ul style="list-style-type: none"> - HEALTH STATUS OF PATIENT OR POPULATION, OR RESULTS OF EVALUATION DONE BY PATIENTS 	<ul style="list-style-type: none"> - patients' evaluation surveys - outcome of care analyses

Personal Development Plan (PDP)

Individual or personal development planning entails assessing ones' own strengths and weakness and development needs. The needs should be customized according to the GPs' practice, patients and community care issues as well as GPs own role as a practice team member. In preparing a personal development plan the GP can modify the plan in order to distinguish short-term goals for current performance from long-term goals of professional aspirations. At this stage of planning, the GPs' action plan to achieve these desired outcomes can and should combine planned activities using tools of CME and QI. Time frames of achievements have to be the same for whole CPD action plan.

Methods used should be actively self driven and are:

- Self-assessment
- Courses on personal development organized by professional GP associations

Continuing Professional Development (CPD)

From the EQuIP & EURACT joint policy document we find a description of continuing professional development: *“a process of lifelong learning in practice. CPDs' endpoint should be [related to] the quality of care. CPD must help to improve the quality of care, try to demonstrate its effectiveness and must become a properly managed activity by both the physician and profession.”*

The goal of CPD is to improve the delivery of good-quality patient care. This goal can be reached by improving the environment of GP practice and improve patient outcomes. The tools, methods, activities or programmes for increasing the impact and ensuring quality of CPD, should be aimed at developing and implementing changes that are practice specific and in keeping with a needs-based learning plan.

CPD consists of any activity which helps to maintain, develop or increase knowledge, problem-solving, technical skills, quality of care or professional performance standards all with the goal that physicians can provide better health care. CPD combines activities formally connected with CME e.g. courses, conferences and workshops, self-directed reading, as well as information derived from quality assessment using tools like small groups tutorials, practice audits, peer review groups, quality cycles or medical records.

Though CPD obligations are common to most professions, in primary care there is an urgent need for further development, standardisation and refinement under the umbrella of quality improvement. Colleges, universities, teaching centres involved in CME processes and those who organise quality projects must combine their efforts to effectively integrate QI activities in CPD.

It is challenging to consider the creation of a common European framework for CPD including CME and QI initiatives and recommendations for tools and methods that can be implemented in GP practices regardless of their location in Europe. Such a framework could minimise the barriers caused by differences in both primary care and in CPD systems between the countries. Integration of this CPD framework could also support the sharing of good clinical practice in primary care across Europe.

Key messages for GP practice

- There are three dimensions to the role of the family physician/general practitioner within the health care system: continuous developments in medical science; rising expectations of patients and society and changing characteristics of the health system.
- The processes of: continuing medical education (CME), quality improvement (QI) and creating a GP's personal development plan (PDP) constitute the response to the increasing demands and expectations of the roles and obligations of European family physicians/general practitioners.
- CME refers to a particular form of education that helps GP maintain competence and incorporate newly acquired information and data from research and publications.
- QI is a continuous process of planned activities based on performance review and setting of explicit targets for good clinical practice with the aim of improving the actual quality of patient care.
- Personal development planning (PDP) involves self-assessment to identify personal strengths, weakness and development needs. GPs creating her/his PDP should combine planned activities using tools of CME and QI.
- The goal of CPD is to improve the delivery of good-quality patient care. CPD combines activities formally connected with CME and information derived from the quality improvement process.

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Chapter 6

General Practitioner's Competencies in Quality Improvement

Katarzyna Czabanowska

Learning objectives:

- understanding the need for and use of competency models in health care
- getting acquainted with the QI Competency Framework
- ability to reflect on and use the QI Competency Framework or its parts for personal development or introducing QI project in practice setting

Introduction

Health professionals need to be competent in quality improvement in order to contribute to safe and effective patient care that is compassionate and appropriate for the treatment of health problems and the promotion of health.

The interpretation of the concept of competence may vary according to role, standards and environment so for this chapter we define it as a synthesis of knowledge, skills and attitudes that enables family physicians/general practitioners to deliver high quality care. Knowledge is defined for the purposes of this section as a condition of knowing something with familiarity, and skill is the ability to apply knowledge appropriately and to a level sufficient to meet, or surpass, a specified standard.

Various competency models have been developed for health professionals in the last twenty years and some of them serve as a basis for QI curricula at undergraduate or postgraduate education. For example, one model from the USA focuses on six major aspects of quality of care: patient safety, effectiveness, patient centeredness, timeliness,

efficiency and equity. In the field of continuous medical education (CME), a second model from Greiner and co-authors defined five core competencies for health professionals: being able to provide patient-centred care, working in inter-professional teams, employing evidence-based practice, applying quality improvement and utilising informatics. A third model, from an international group of experts, the Bellagio model, put forward nine essential features for qualitative (chronic) care: leadership, public trust (accountability and transparency), population-oriented management, vertical and horizontal integration, networking of professionals, infrastructure, payment mix, standardized measurement and an active program of change.

In this chapter we present a fourth model: the Quality Improvement Competency Framework for primary care (referred to as the QI Framework) which was created in Europe. We will explain its potential use in helping GPs/FPs to assess their personal learning needs, or to implement change and improve patient care at primary care level. Competency models can also serve as a useful self-evaluation tool for primary care physicians committed to practice-based learning who want to improve their care practices, analyse their clinical experience, plan a change for improvement, make a change effort, and finally determine if it was an improvement or not by incorporating improvement knowledge into the daily practice routine.

The Quality Improvement Competency Framework for primary care

The QI Competency Framework has been developed in the course of a systematic consensus study carried out among European primary care experts interested or specializing in quality improvement. It was developed in 2011 by the Leonardo da Vinci project No. 2010-1-PL1-LEO05-11473 (inGPInQI project) funded by the European Commission to promote life-long learning on QI in general practice.

The Framework is a tool to facilitate the systematic analysis and assessment of QI competencies. It is designed specifically for use in the general practice environment as a prompt for assessing the quality of care in terms of its current status, potential activities for improvement and for self evaluation of educational needs in the QI arena. In this way it may lead to a positive change in care of patients.

The QI Framework of competencies can be used as “a model”, “a reference”, “a plan”, “a source of ideas” or “a benchmark” to identify competency gaps, to design an individual educational development plan, a practice based team plan, and assist with planning CPD activities for GPs/FPs. The key to the usefulness of any quality framework is its adaptability to local structures, environments and needs. Therefore when starting using this framework one needs to consider the unique practice situation and personal educational development needs. The QI Framework is organised into six domains: Patient Care & Safety, Effectiveness & Efficiency, Equity & Ethical Practice, Methods & Tools, Leadership & Management, and Continuing Professional Education (Figure 6.1). Each of the domains reflects an important care area which constitutes everyday primary care practice. The domains include a number of specific competencies which constitute individual standards. In total there are 37 competencies arranged across the six domains (Figure 6.2) and each listed competence can be used to stimulate reflection and assessment.



Fig. 6.1. Competency Framework in Quality Improvement for Family Doctors in Europe

Source: Czabanowska K, Klemenc-Ketis Z, Potter A, Rochfort A, Tomasik T, Csiszar J, Vanden Bussche P. Development of a competency framework for quality improvement in Family Medicine: a qualitative study. *Journal of Continuing Education in the Health Professions*, 32(3):174–180, 2012.

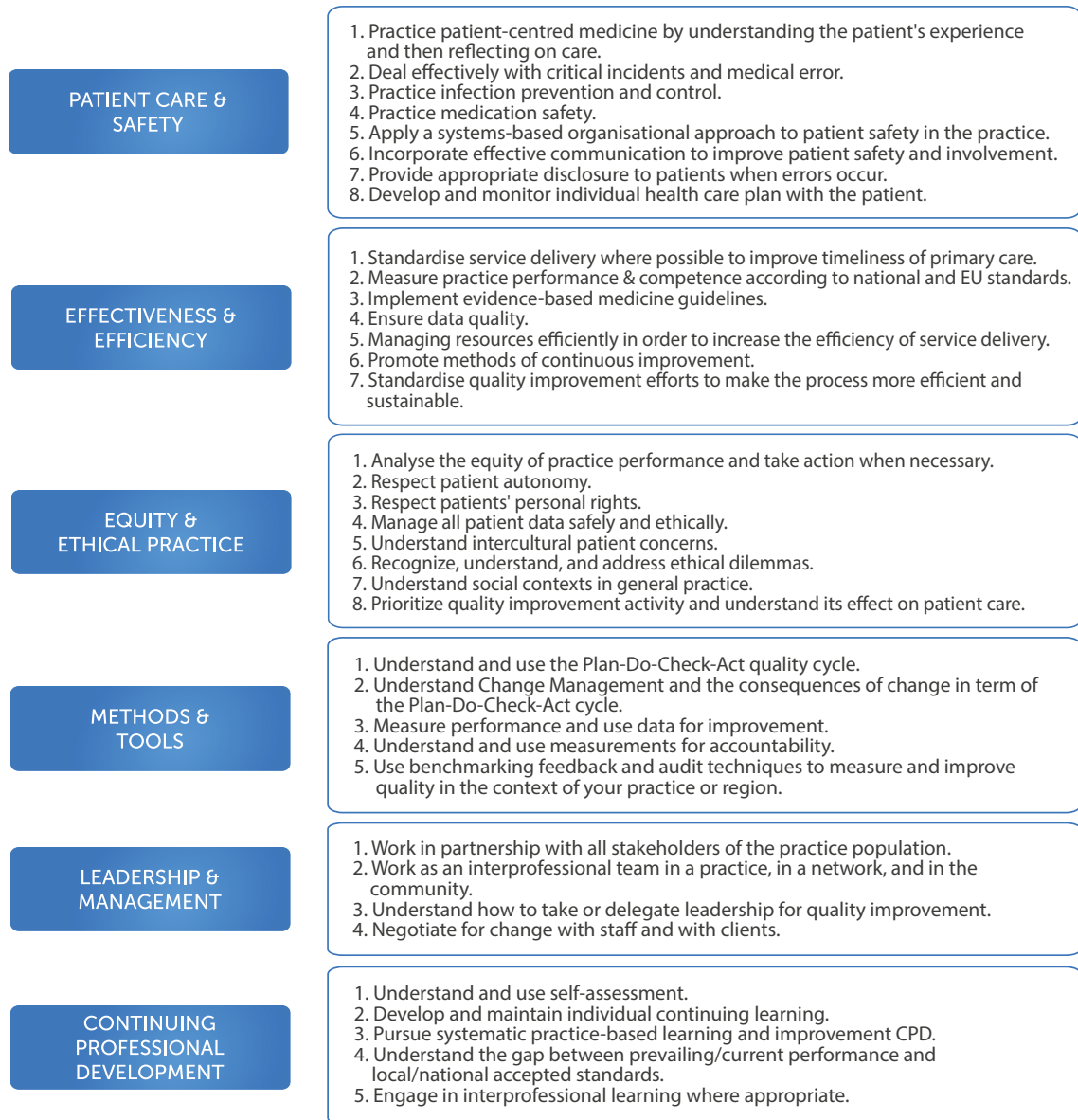


Fig. 6.2. Competency Framework in Quality Improvement for Family Doctors in Europe – a list of competencies

Source: Czabanowska K, Klemenc-Ketis Z, Potter A, Rochfort A, Tomasik T, Csiszar J, Vanden Bussche P. Development of a competency framework for quality improvement in Family Medicine: a qualitative study. *Journal of Continuing Education in the Health Professions*, 32(3):174–180, 2012.

Using the QI Framework for personal development

The QI Framework is designed as a tool to be used by GPs/FPs at any stage of their career. It will assist them in identifying their educational needs in the area of QI. From the personal improvement perspective the QI Framework can be used as an instrument in totality or if required specific domains or competencies for individual reflection and identification of areas that may indicate a need for development or improvement. For this purpose “A five-stage model” developed by Dreyfus which is very useful in medical education and thinking about skill acquisition can be useful. It distinguishes five categories: novice, advanced beginner, competent, proficient, and expert. This model can be applied to the QI competencies included in the model and aid self-assessment. The scale allows us to appreciate that competencies can be improved or acquired. If the change is to be introduced at the practice level by implementing a quality improvement project, the QI Framework can help in the identification of the gaps in performance.

Using the QI Framework for quality improvement in practice settings

The competencies can serve as standards which have to be met or as a benchmarking tool if the improvement project is aimed at comparison with other performers in a target QI area.

QI competencies cover a wide spectrum of practice areas and are intended to support practicing GPs/FPs in their various roles. It is useful for GPs/FPs to assess how well they are able to work in interprofessional teams, how they assume or delegate leadership roles, adhere to ethical principles, show sensitivity to a diverse patient population. It is a valuable exercise for GPs to assess their interpersonal and communication skills as they must be able to demonstrate skills that result in effective information exchange and partnership with patients and patients’ families, and negotiation with other professionals. Using the QI Framework should help GPs/FPs demonstrate their awareness of and responsiveness to the larger context and system of health care in which they operate and the ability to call on system resources to provide optimum care.

Using the QI Framework for CPD purposes and curriculum development

Finally, it can be stated that the QI Competency Framework has potential for helping medical teachers and trainers who develop and deliver CPD curricula for family physicians to identify important QI competencies. The framework of competencies provides an organised structure to guide the development and evaluation of educational programmes. Moreover, various organisations and institutions in Europe interested in QI curricula for physicians or other clinicians might find it useful to use the QI Competency Framework as part of the process for constructing their own curriculum for QI.

Conclusions

The QI Competency Framework covers the QI competencies needed by GPs/FPs to successfully address their CME or CPD in the most comprehensive way. It is a tool that facilitates general practitioners to address the complex medical care environment they work within when planning or introducing change.

Key messages for GP practice

- QI is a professional responsibility of doctors.
- Competency in QI has both generic and specific components.
- Using a QI Competency Framework can assist with continuing professional development.
- The QI Competency Framework can be used in identifying educational needs related to QI by GPs/FPs.
- The QI Competency Framework can be used in benchmarking analysis while comparing the performance of primary care practices.
- The QI model is an interdisciplinary and comprehensive tool which can support primary care practice.
- The QI Competency Framework can be used by the educational organizations in developing quality improvement education programs for primary care professionals.

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Chapter 7

Examples of Quality Improvement in General Practice/Family Medicine Projects in European Countries

Małgorzata Bała

Learning objectives:

- ability to list some examples of quality improvement in GP/FM projects in European countries
- ability to describe how patients can benefit from quality improvement projects
- ability to give examples of how the healthcare system can benefit from quality improvement projects

The aim of this chapter is to present some examples of successful quality improvement (QI) projects from a variety of European countries. The examples presented here illustrate how QI interventions can be applied in general practice (GP) at the practice level. Many other examples of QI projects exist for general practice and indeed for other areas of the healthcare system. The examples of quality improvement projects that follow were selected because they cover a range of areas like health promotion, prevention, treatment and combinations of different areas of GPs care (comprehensive care) and so they may motivate GPs to initiate or participate in similar QI projects in their countries.

Quality Improvement project in health promotion

Three level strategy was a community-based program led by GPs in Östringen, a community in Germany with about 12.900 inhabitants. The project was funded by the community and organizations involved included sports clubs, teachers, companies, schools, town administration, GPs and local health services. The project started in

1991 and is ongoing, without a specified end date. It was implemented in a CINDI (Countrywide Integrated Non-communicable Diseases Intervention) demonstration area. Since 1991 the program has performed regular health surveys in general practices and 22 patient education groups.

The aim of the program was to reduce cardiovascular (CV) risk, improve life style in the public generally and in the practice patients, improve the quality of care and the clinical performance and increase the accessibility and volume of health care intervention. In primary prevention the project aimed to reduce hypertension, hypercholesterolemia, smoking and obesity.

The program strategy comprised of three levels. First level activities included activities for diabetics, smokers, hypertensives, the overweight or others at risk identified and actioned by GPs during normal consultation hours. Patients who failed to meet agreed goals were referred to second level which included activities performed by GP with patient groups in the practice. Third level of the program included activities performed by GP at community level which aimed to maintain success and prevent relapse (for details see Table 7.1).

Tab. 7.1. Three level strategy

FIRST LEVEL	activities during normal consultation hours	lifestyle counseling and lifestyle changing measures, brief advice (a short intervention usually from 30 seconds to 3 minutes delivered opportunistically in relation to the persons' reason for seeking help; usually involves giving information about the importance of behaviour change and simple advice to support behaviour change), the Five A's (ask, assess, advise, assist, arrange)
SECOND LEVEL	activities with patient groups in the practice	structured educational group programs
THIRD LEVEL	activities at community level	22 courses providing physical activities or jogging for at least 1 h a week as well as holistic counseling on nutrition, stress control, and medical advice (paid)

Activities targeted at health professionals included education on intercommunication between the practice which coordinated the programme and other GPs. Also, a local working group was founded involving various citizens interested in health care: e.g. teachers, dieticians, and physicians and the town administration supported the activities by providing rooms for sports activities for groups from schools and local companies.

The effects of the program included decreased CV risk factors in the intervention area as compared with general population. Between 1992 and 1999 the prevalence of hypertension ($\geq 160/95$ mm Hg) and smoking decreased while the prevalence of obesity (body mass index [BMI] >30) and cholesterol >250 mg/dl did not change significantly. It was reported that health promoting activities were practiced by all of the surveyed course participants and two thirds of practice patients. One fifth of the patients reported barriers to health promoting activities, which included lack of time or fatigue, shift work, obligations of caring for others, work factors, concomitant diseases, distance, children, or occupational stress.

Quality Improvement project in cardiovascular disease prevention

Diabetes Support Service (DSS) is run by a diagnostic centre (Diagnostisch Centrum Eindhoven, Netherlands), a supportive organization for general practice and midwives in the region. The effects of the intervention were evaluated after two phases of implementation as compared with delayed intervention in the control group (waiting list). The program started in 1999 and is an ongoing regional activity. It includes patients with diabetes mellitus (DM) documented for more than 4 years at the start of the study.

The aim of the program was to achieve better metabolic control in the diabetic patients. Intermediate aims were: improving the quality of care and clinical performance; cost containment or efficiency improvement; and logistic support in organizing the care.

The usual DM care in the Netherlands includes implementing national guidelines with emphasis on non-medication-based management (lifestyle modifications) and prescribing of an oral antidiabetic agent only if lifestyle modifications were insufficient. Medication changes, if indicated, are made in stepwise fashion on the basis of patients' condition. Patients are treated in primary care unless complications occur. DSS intervention consisted of logistic support for the GP. Interventions targeted at patients included providing information about the importance of disease control and the routine monitoring tests, group education for patients and their family members, arranging referrals to a dietician and help for glucose self-control and starting insulin therapy, reminders for patients for laboratory testing and other investigations (foot examination, fundus photography, blood test), asking patients to make an appointment in general practice to discuss results. The results of the requested tests were sent directly to the GP. The actions taken by the GPs after receiving the results were not part of the intervention.

Interventions targeted at general practice included quality control for glucose testing devices and advice about these devices, help in detecting patients with DM and registration of these patients, visit of diabetes consultant for help in diabetes care and treatment advice, with feedback on the practice level and on the patient level.

In the second phase of the implementation the intervention involved adding practice nurse services at patient level (information and lifestyle advice during the quarterly checkups, tracing risk factors and setting short-term goals, motivating the patients to make lifestyle adjustments or adjustments to medication) and practice level (surveillance of the disease management system – inclusion and follow-up of patients and supervision of the test ordering for each patient) (Figure 7.1).

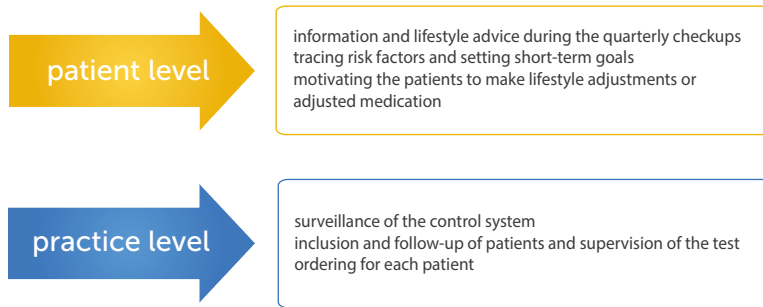


Fig. 7.1. Practice nurse services applied in the QI projects' implementation

The effects of the intervention as compared with the control group are listed in Table 7.2.

Tab. 7.2. The effects of the intervention vs. control

IMPROVED (significant difference)	NOT IMPROVED (no significant difference)
the percentage of patient who attended ≥ 4 quarterly controls (with at least testing of fasting blood glucose or HbA _{1c})	
percentage of patients tested at least once a year regarding HbA _{1c} , cholesterol, creatinine, blood pressure (BP), funduscopy, foot examination, BMI, smoking status	percentage of patients tested at least once a year regarding fasting blood glucose
better HbA _{1c} control in the intervention group (the same in the intervention vs. deterioration in the control group)	mean fasting blood glucose
larger improvement in systolic BP (mean and percentage of patients with systolic BP >150 mmHg) and percentage of patients with total cholesterol >5 mmol/l	mean diastolic BP and percentage of patients with diastolic BP >80 mmHg, cholesterol level and triglyceride level
increase in the average number of tests	

When practice nurse services were added to the logistic support and compared with logistic support alone there were additional changes in the DM control, such as improvements of the HbA_{1c} control, diastolic BP control, cholesterol/HDL ratio as well as more exercise. No significant differences between the groups were found with regard to systolic BP (increased in both groups), cholesterol level (improved in both groups), BMI (increased in both groups), percentage of non-smokers (increased in both groups), the prescribed daily dose for oral medication (increased in both groups) and the percentage of patients treated with statins (increased in both groups). The percentage of patients treated with insulin increased more in control (logistic support only) group.

Quality Improvement project in treatment

The Belgian Improvement Study on Oral Anticoagulation Therapy (BISOAT) aimed to improve the quality of oral anticoagulation management by GPs and to compare different models and interventions. In Belgium mainly GPs manage oral anticoagulation therapy. The BISOAT study included GPs for whom one laboratory determines the INRs on venous blood. Patients who were included in the study had to be treated with oral anticoagulation for at least 28 days. The quality of anticoagulation management was defined as the proportion of time that INR (international normalized ratio) values were within target range (within 0.5 and 0.75 INR-units from the chosen target INR of 2.5 or 3.5).

There were four groups compared within this study. All groups received education on oral anticoagulation, anticoagulation files (with summary of guidelines), and patient information booklets. Every 2 months, a newsletter informed the GPs on the study progress and requested them to send the anticoagulation files for control (control group).

Three intervention groups involved the following activities:

1. feedback on their anticoagulation performance every 2 months (compared to the entire group and to guidelines criteria);
2. determination of the INR with a CoaguChek device in the doctor's office or at the patient's home;
3. Dawn AC computer assisted advice for adapting oral anticoagulation.

INR was targeted at 2.5 for patients with AF, to prevent arterial thromboembolism, for deep venous thrombosis, or for pulmonary embolism and at 3.5 for patients with mechanical prosthetic heart valve and the antiphospholipid syndrome.

The risk factors for stroke and the occurrence of thromboembolic complications or bleedings were as follows: hypertension, DM, a prior stroke or transient ischaemic attack, peripheral vascular disease, congestive heart failure, previous myocardial infarction, a valve disease, history of malignancy and smoking. The patients were followed for a median of 4.8 months.

The GPs displayed very poor compliance with the computer generated advice. The effects of the interventions are listed in Table 7.3.

Tab. 7.3. The effects of the intervention compared to baseline and differences between the intervention groups

Compared to baseline	IMPROVED	NO CHANGE
	percent of patients with at least one INR >5	percent of patients with at least one INR <2
	percent of time within 0.5 INR-units from target and within 0.75 INR-units from target	
	median number of INR tests per patient per month	
Intervention groups	SIGNIFICANT DIFFERENCE BETWEEN GROUPS	NO DIFFERENCE
	percent of patients with at least one INR >5	percentages of time within 0.5 INR-units from target and within 0.75 INR-units from target
		percent of patients with at least one INR <2
		median number of INR tests per patient per month
		percent of patients with treatment changes
		incidence of minor bleeding, major bleeding and thromboembolic events

The cost-effectiveness of the program was also calculated. The one-time cost of multifaceted education was €49,997 for the whole study and €511 per GP practice and extra cost of €200 per GP per education session, €208 per GP-practice attendance fee and €45 for the patient education material. Monthly continuous costs per intervention ranged between €37 and €54 per patient. Using the CoaguChek in combination with the multifaceted education was associated with net savings and quality improvement. Sensitivity analyses also confirmed improved cost-effectiveness with extended duration and with increased program size.

The problems for implementation of the program in Belgium would be the lack of reimbursement for postgraduate education in Belgium.

Comprehensive Quality Improvement projects (combining different areas of GPs care)

In Germany the model for chronic care comprising of self-management, education, clinical information systems, decision support, optimal delivery design, supportive health care structures and access to community resources has been implemented by means of **disease management programmes (DMP)** in primary care, which are nationwide. The DMP in Diabetes Mellitus (DM) started in 2003 and the DMP Coronary Heart Disease (CHD) started in 2005. There is no specified end date.

DMPs are led by the Federal Ministry of Health and funded by the sickness funds. Proposals for new DMPs are generated by the Federal Joint Committee which includes representatives of the several organizations, such as The Federal Association of Statutory Health Insurance Physicians, the German Hospital Organization, The Federal Associations of Sickness Funds, and the Institute of Quality and Efficiency and Accredited Patient Organizations. These proposals have to be accredited by the Federal Insurance Office. The DMPs have a range of aims, including improving CV risk, improving life style in patients, improving the quality of care, improving patient experiences, and lowering costs. The evaluation of the effect of the DM program was assessed in the ELSID study (evaluation study of the DMP diabetes mellitus type 2).

The intervention includes arranging contracts between sickness funds and primary care physicians using compulsory detailed requirements for patient care which need to be fulfilled to get a financial reimbursement. Participation by doctors and patients in the DMP is voluntary. The content of the DMP is defined by a national expert group and its recommendations are compulsory for contracts. The DMPs include treatment standards, evidence-based guidelines, audit using quality indicators and quality assurance measures, quality cycles, documentation standards, regular examination appointments, reminders, referral regulations, and physician feedback reports, educational meetings, outreach visits, patient education, shared individual goal setting by the patient and physician on the basis of individual circumstances and risk factors.

For example DM patients consultations are scheduled at 3- or 6-months intervals (with detailed medical history and physical examination) with agreements concerning further treatment, e.g. target values for HbA_{1c} and BP and participation in patient education programs for DM or hypertension. Patients are offered lifestyle advice and are obliged to a follow up consultation at least twice a year and to attending an educational program. There are also financial incentives for patients. There is no specific continuing education for health care providers or practice support to enhance the uptake of DMP in primary care.

In patients participating in DMP as compared with those receiving routine care there was a decreased rate of deaths from all causes and a significant impact on the health related quality of life measured with EQ-5D score (using the value set for the European population; EQ-5D is a standardised instrument for measuring health related quality of life, score range 0–1; it includes 5 dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression and each dimension has 3 levels: no problems, some problems, extreme problem). The impact on EQ-5D score was also associated with the number of other conditions (the more other conditions the bigger difference between DMP and routine care group). Within EQ-5D questionnaire significant differences between the DMP and routine care groups were reported for the

dimensions of mobility, self-care and performing usual activities (more patients reported no problems or some problems and less patients reported extreme problem) and no significant differences were reported for the dimensions of pain or discomfort and anxiety or depression.

DMP patients as compared with those not in DMP received more frequent medical advice on diet and physical activity and medical examination of eyes and feet and cholesterol testing. They also received more anti-diabetic drugs (oral +/- insulin), attended diabetes education classes more often, kept diabetes diaries and measured their own blood pressure more often. DMP patients achieved BP treatment goals more than those outside DMPs, but they did not achieve HbA_{1c} and lipid treatment goals.

No significant differences were seen with regard to the frequency of HbA_{1c} and proteinuria tests, blood pressure examination, antihypertensive, lipid lowering and antiplatelet medications.

In the overall assessment of diabetes care according to Diabetes Recognition Program 2009 performance criteria DMP care fulfilled 8 out of 11 (75/100 points) criteria while routine care fulfilled 6 criteria (50/100 points).

Patient Assessment of Chronic Illness Care (PACIC) is a tool to measure the quality of care according to the chronic care model (CCM) and to measure patient motivation according to the “5A” principles (assess, advise, agree, assist, and arrange). When the care of DM patients was assessed by means of PACIC, significantly better patient-centred, structured, and collaborative care was observed for DMP as compared with non-DMP patients. The largest effects were seen for follow-up/coordination of care, goal setting/tailoring, and for the problem-solving/contextual scales and with the PACIC-5A scale – for assist, advise, and assess parameters.

In a study evaluating DMP implementation after 6 months using a quality management cycle (structured analysis of the current state followed by identification of the need for improvement, developing optimized workflow and targets) 90% of surveyed practices agreed on at least one target (for example to purchase new instrumentation, to regularly discuss feedback report or to set up a patient registry). On average practices formulated three targets and implemented two of them. In most practices lack of time was the reason for non-implementation.

According to the authors, sufficient resources (time, staff and money) are required to ensure efficient implementation of DMPs in primary care practices and their integration with routine processes.

Factors necessary for successful Quality Improvement project

In a recent systematic review the most effective interventions to improve DM care were complex and included 4 areas of care: changing of clinician behavior, changing the organization of practice, improving information systems and providing educational support for the patient (Figure 7.2).

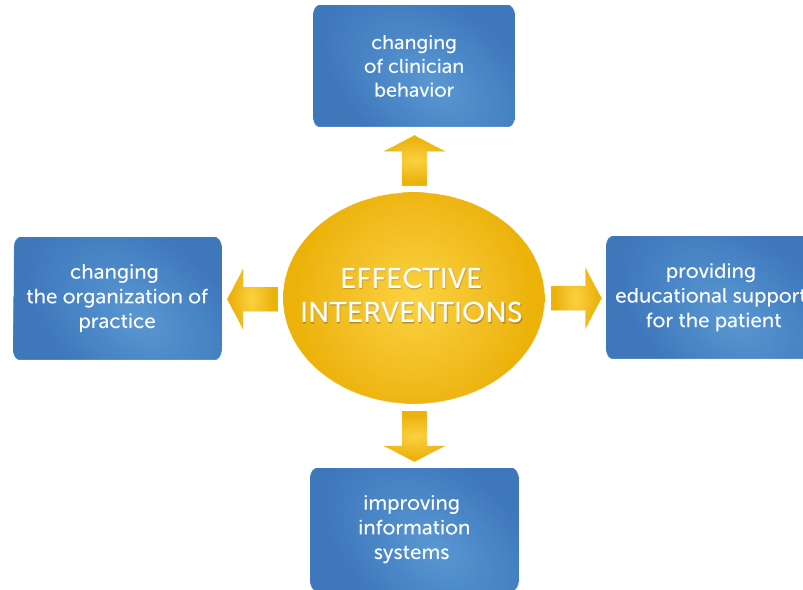


Fig. 7.2. Factors necessary for successful Quality Improvement project

In a review describing several quality improvement programs conducted in primary care in European countries several factors were identified as necessary for successful program. In most cases multifaceted interventions were found to be superior to single interventions. Additionally for health promotion programs the factors that seemed to be necessary for successful program included several factors which are presented in the Box 7.1.


**SUCCESS
FACTORS**

- quality
- quantity and intensity of the intervention
- brief structured advice
- continuously repeated advice
- easy access to stable local health courses
- GP familiarity with the individual problems and health resources
- the standardized way of measuring risk factors
- structured follow up sheets
- telephone follow-up
- enhancing the quality of the counseling component and simplifying it
- integrative approach to health promotion combining interventions directed at changing health behaviors of individuals and changing environment, organization and policy

Box 7.1. Factors for successful QI health promotion programmes

For quality improvement programs in prevention the factors for successful program identified in included studies were as follows: using structured follow up sheets in the patient records, applying the patient-oriented interventions and logistic support with the monitoring of patients (recall system), structuring care by practice nurse and patient's compliance with lifestyle changes as well as using a multiprofessional team from the planning and start of the program and teaming up the professionals to solve the practical problems experienced in the GPs' working environment. Specifically for GPs, peer interactions, learning from each other by discussing feedback reports and guidelines as well as training the trainer approach were found to be useful in improving quality of care.

Regarding quality improvement programs in treatment also small group interactive learning, evidence based guidelines with attention for the specific needs of GPs, team building, newsletters, and patient oriented interventions were found to be important factors in improving quality of care, while financial incentives together with quality reports were relevant in improving the quality of drug prescribing.

For quality improvement projects combining different areas of GPs care, such as DMP in Germany, the factors important for the success of the program included restructuring of chronic disease care according to models such as the chronic care model and the medical home concept (the responsibility for individual care and coordination rests with medical providers working together within a healthcare team; patients receive more social support from their physician and doctor's assistant) with the emphasis on the continuity and coordination of care. Other issues also important for the successful programs included financial incentives, clear goals and regularly audited guidelines, good teamwork and effective leadership, comparing the care with others (benchmarking), and using a combination of clinical and organizational approaches.

The factors that were described by the authors as being necessary for the program to be successful can be categorized into several groups, for example factors associated with health care personnel, healthcare organization and funding (payer), patients and local community and external environment.

Key messages for GP practice

- Successful QI programs involve a variety of interventions.
- In the category of health promotion QI, key activities included education courses and lifestyle counseling.
- Key activities in prevention category of QI included computerized registration of risk factors, adherence to evidence based national guidelines, logistics support for GP and practice nurse, using structured assessment form.
- In QI programmes involving therapy, key activities included education, feedback, device, computer assisted advice and extra payments linked to the level of adherence to the guidelines.
- In German Disease Management Program, key QI activities included treatment standards, evidence-based guidelines, quality cycles, documentation standards, regular examination appointments, reminders, referral regulations, and physician feedback reports, educational meetings, outreach visits, patient education and financial reimbursement.
- The factors described by the authors of the identified studies as necessary for the QI program to be successful included inter alia quality, quantity and intensity, multifaceted approach, multiprofessional team from the planning and start of the program, patient-oriented interventions and logistic support (duplicated below), audit and feedback, financial incentives, local ownership and learning, a combination of clinical and organisational approaches, clear goals, good teamwork and effective leadership, continuity and coordination of care, an integrative approach to health promotion.

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PART II

Tools & Methods

Chapter 1

Quality Cycle as a Basic Method

*Tomasz Tomasik, Adam Windak,
Mateusz J. Zagata*

Learning objectives:

- understanding the quality cycle (PDCA) concept
- getting familiar with the steps in quality cycle, their purpose and content
- ability to participate actively in quality improvement project that uses cycle method in practice
- ability to plan a simple quality improvement activities in a small GPs'/FPs' practice
- getting familiar with several tools, which may assist quality improvement in practice

Introduction

A quality cycle is the fundamental method which can be used for continuous improvement of care in family doctors' practices. It has a scientific basis providing a structured approach for quality improvement using a methodology to guide both simple and complex problem-solving activities. It can be effective in everyday care for patients and also in managing a specific, simple or complicated project. The cycle may be used in small solo practices or group practices as well as in bigger primary care centres.

The quality cycle was introduced into medicine from the manufacturing sector of industry where it had proven effectiveness. Dr W.A. Stewart proposed the cycle methodology instead of the straight line of the old specification, production and inspection activities of production processes. W.E. Demming modified the cycle and proposed a four step process in 1950s. With some influence from other authors, a so-called PDCA cycle was created. It became popular in Japanese industry and then subsequently spread to other continents.

A PDCA cycle consists of four steps (1) **Plan** (setting objectives, analyzing problems, preparing an improvement plan); (2) **Do** (implementing

changes); (3) **Check** (measuring the effect, comparing against the expected results); (4) **Act** (acting based on previous experiences, fixing changes). In 1980s Demming introduced new changes in this process and proposed a PDSA cycle, where “S” stands for “Study”. This was to emphasize that the purpose of the third phase in the cycle is to observe the effect, create new knowledge and summarise what was learned. After that the cycle was modified by several authors.

In medicine this concept was first implemented in the inpatients setting and secondary care clinics. Beginning in the Netherlands and spreading to other Western European countries it had become widely known in primary care in 1980s. Promoted by The European Association for Quality and Safety in General Practice (EQUIP) it has slowly expanded to Central and East European countries. Figure 1.1 illustrates the incorporation of the PDCA cycle concept into Family Medicine/General Practice.

Motivating FPs/GPs to QI activities

Some family physicians/general practitioners (FPs/GPs) possess an internal motivation for undertaking activities with the aim of developing improvements in the quality of care that they deliver to their patients. They understand that improvement is a core aspect of their professionalism and that their patients depend on them, trust them, and believe that they deliver high quality care. This motivation may be strengthened by attendance at national conferences or local quality meetings, which help to broaden perspectives about QI. Physicians’ willingness to change the way they practice can also be increased by showing that quality improvement activities improve patient outcomes and are not just administrative or regulatory requirements. Other FPs/GPs may believe that they already provide a good quality care. This may change when they are shown data demonstrating otherwise. Measuring performance and benchmarking data against other practices in a region is an important factor in motivating for change. Moreover, providing individual feedback to physicians about their performance relative to their peers stimulates improvement.

External incentives and, in a limited manner, sanctions could also be an important component of any effort to develop quality. Non-financial incentives are generally less influential than financial ones to improve quality of care. Incentives are more effective when based on each individual physician’s performance rather than at practice level. The simplicity and straightforwardness of the change are also important issues that influence success of the incentive program.

Developing internal and external motivation systems to attract FPs/GPs to improve quality of care is only a part of a complex process. Not only doctors, but also the medical associations, central and local governments as well as professional leaders are all key to achieving success. They are responsible for many tasks, such as creating a strong culture of quality, introducing specific regulations, or preparing infrastructure for improvement. All these factors may help physicians start quality projects in their practices.

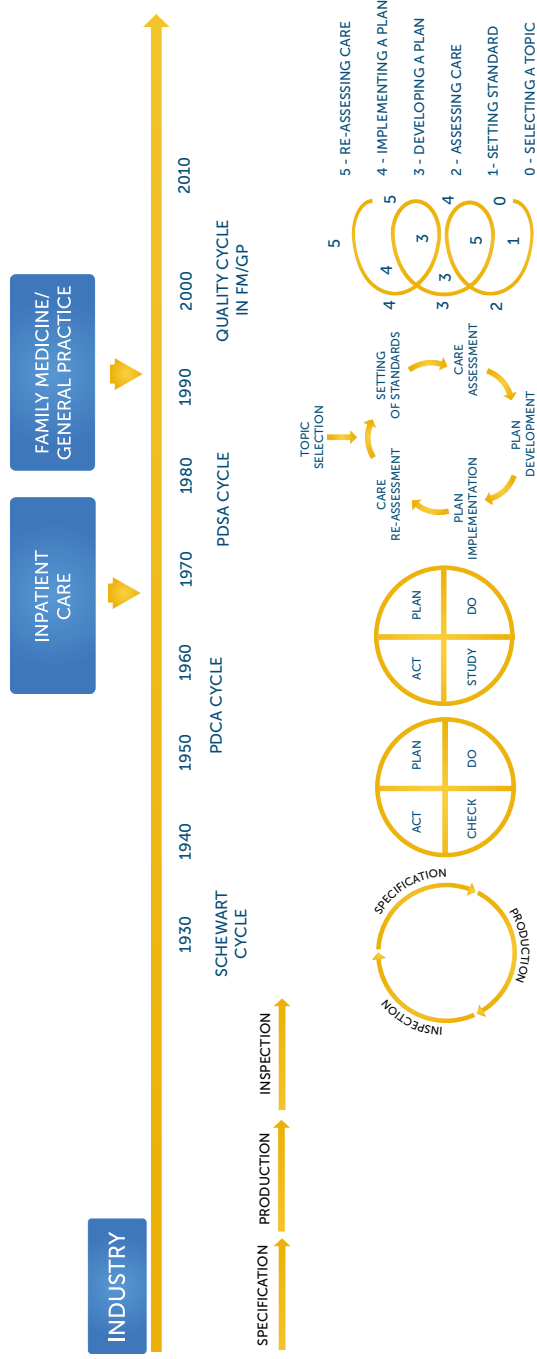


Fig. 1.1 Evolution of the quality cycle

Steps in the quality improvement cycle

As in other disciplines, in family medicine/general practice the original PDCA cycle and its phases/steps were adapted to specific conditions and demands of the primary health care setting. In this chapter a modified cycle consisting of six steps/phases will be presented. These steps are: (1) Selecting topic; (2) Setting standard, (3) Assessing care, (4) Developing an improvement plan, (5) Implementing the plan, (6) Re-assessing care. The steps and their aims are presented in Figure 1.2.

In general, the first step represents preparation for the PDCA cycle. Steps 2, 3 and 4 correspond to the phase “Plan” of the previous models of the cycle. Implementation of an improvement plan stands for the step “Do” and re-assessment for the step “Check/Study”. “Act” starts with implementation of improvement plan and continues until the end of the cyclic activity. The cycle may be repeated several times for an activity if that is deemed appropriate.

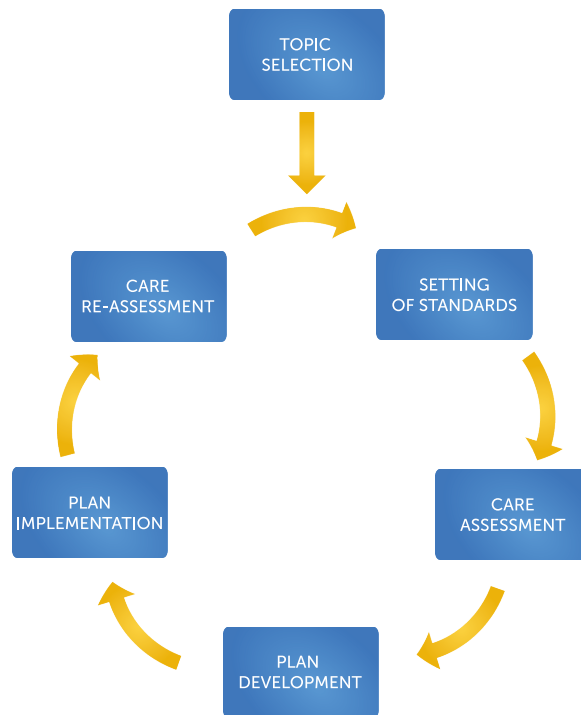
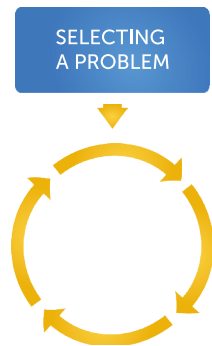


Fig. 1.2. Steps in the quality cycle

Step I: Selecting a problem/topic



The fundamental step in the quality improvement cycle is to select a topic, or a problem, that needs improvement. Proper problem identification, clarification and analysis prior to subsequent steps is essential for the success of the whole cycle. Inappropriately chosen topics or inadequately defined problems can be the reason for failure and disappointment.

Brainstorming

A group decision-making technique is used to generate a large number of ideas. It involves spontaneous contribution and allows each member of the group to present their ideas without being limited by particular rules. Participants should avoid criticism. A list of ideas is prepared.

This can be used in all phases of the quality cycle e.g. for topic or indicators selection, specifying a sample of patients, defining problems and barriers.



Fig. 1.3. Brainstorming

Identifying and prioritizing problems/topics

There are numerous topics and issues in daily family practice that could be a subject for the quality improvement cycle. Before any specific one is selected for further work, its characteristics should be considered under the following headings:

Relevance. The selected topic should be practical, pertaining to an important and a real area of daily practice. It should be related to the clinical or organizational challenges met by physicians or other members of primary care team.

Patient-oriented. The chosen topic should be important from the patients' perspective. It should have a real impact on provision of health care or its outcomes. Preferably it should increase accessibility of the services, or improve clinical outcomes or patient satisfaction.

Frequency. The chosen problem should be a regular phenomenon. This guarantees that relatively large number of patients will benefit from any introduced changes and improvements.

Prioritization matrix

A useful tool to achieve consensus and prioritize unclear issues. It helps to rank problems or issues by important criteria and helps to show which problem is the most critical.

PRIORITIZATION CRITERIA PROBLEM TO PRIORITIZE	CRITERION 1 WEIGHTS	CRITERION 2 WEIGHTS	CRITERION 3 WEIGHTS	TOTAL POINTS

Fig. 1.4. Prioritization matrix framework

During a group brainstorming session problems are identified and listed in the first column of a table. In the next columns criteria which fit to the situation are put. The importance of each criterion compared to other may be agreed and then numeric weightings are added (e.g. “2” means twice as important as “1”). The group evaluates how well a particular problem/issue meets each of the criteria. The item is scored against each of criteria, and then scores for each item are summed. If the numbers are allocated to particular criteria each score should be multiplied by the number. A final list of prioritized items is developed and may be used for decision making in different steps of the quality cycle.

Defining/clarifying a selected problem

A selected topic must be not only important, but also well-defined and suitable for a further work. From that perspective it should be measurable and modifiable.

Measurable. This means that a selected problem can be defined using well-defined methods or instruments. Moreover these methods should be easily available at the practice level. Clearly defined indicators related to the problem should be available.

Modifiable. This means that a selected problem can have practical options as solutions, that change is possible and that there are real possibilities of the implementation of changes. While there could be many interesting, patient-oriented, and important topics for the PDSA cycle, sometimes there is no practical possibility of improvement due to complexity or barriers or lack of resources, for example. It is therefore important to choose a topic which is appropriate for primary care and the practice.

Analyzing the problem

Initial analysis of the selected problem should include review of the existing evidence related to the subject as well as its influence on cost-effectiveness of care.

Evidence-based. Selected topics and proposed changes should preferably be supported by published data and based on scientific evidence e.g. prospective cohort studies that show the effect of proposed changes. Review of literature is always recommended as a first step. In the case of lack of such research, propositions could be based on expert opinion. It should be noted however, that the opinion of experts, especially in case of specialists from outside the primary care environment might impact on feasibility.

Cost-effectiveness. The selected problem should justify the extended time and resources that are going to be spent on its improvement. Although costs involved in patient care should not be the sole subject of quality cycle, they must be taken into consideration for practical purposes. In other words, we need to know whether a potential solution to the chosen problem would be affordable from patient, practice and health care system point of view.

Cause and effect diagram (Fishbone, Ishikawa diagram, root cause analysis)

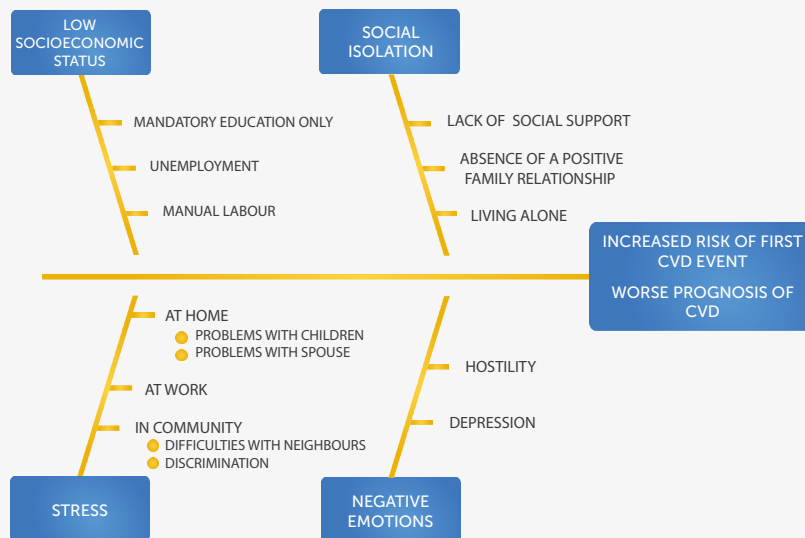
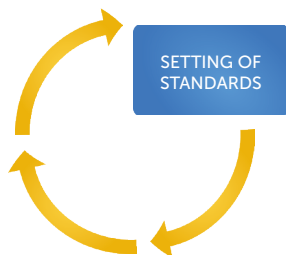


Fig. 1.5. Psychosocial factors that contribute to risk of cardiovascular diseases

A graphical tool used to illustrate the different causes and sub-causes that contribute significantly to the issue/problem being examined (effect). It also illustrates the relationships of various factors influencing an effect.

It is especially useful for problem analysis as well as for identification of barriers.

Step II: Setting standards



The next step in the cycle is selection of standards, against which the current and improved practice will be assessed. This should be done through careful selection of indicators, definition of criteria and achievable standards. This step enables assessment of medical services. Generally speaking these elements are the basis for defining appropriate patient care and are reference points by which physician's and entire medical personnel's actions are measured by.

Selecting indicators

To define quality of care it is necessary to use appropriate tools. Each selected topic is composed of large number of elements, but only a few of them are suitable for measurement and can be used in assessment. These particular elements of care used for this purpose are called indicators. An appropriate indicator should have several characteristics. (1) It should be definable and measurable. (2) It should refer to a specific dimension of care, and (3) it should pertain to quality of care. Some examples are presented in the Table 1.1.

Definable and measurable. This means that there are methods, procedures, or tools at the disposal of the practice team members by which they are able to quantify the indicator and assess its value. The measuring instruments utilized in quality assessment of medical services should have certain required features. These are: relevance (this means that tools used are in clear association with quality and results of care), reliability (this refers to probability of obtaining the same results by different operators using the same instrument being significantly higher than obtaining such results by chance alone), differentiation (this means that utilization of a given instrument or method allows to differentiate between good and bad care).

Dimension of care. There are neither indicators nor systems of quality assessment that are able to define the quality of care in a global or holistic manner. According to classic concepts formulated by the founding father of quality assessment in health care, Avedis Donabedian (1919-2000), health care can be assessed in reference to its three elements: structure, process and outcome. For each of the three dimensions of care specific indicators could be defined.

Quality of care. Indicators should be selected in such a manner as to encompass relevant mixture of elements of structure, process and outcomes of care. By careful selection of different indicators we have a chance to judge the overall quality of care. Such an approach is not always feasible and if necessary, a limited set of indicators, related to only one or two dimensions could be used.

Tab. 1.1. Examples of indicators from ACOVE project and QOF programme

Name, description and source of project/program	Examples of indicators (area)
<p>The Assessing Care of Vulnerable Elders (ACOVE) project endeavored to develop a set of evidence-based, quality-of-care indicators that are relevant to ill older persons. It consists of about 400 indicators in 26 areas of care.</p> <p>Shekelle PG, MacLean CH, Morton SC, Wenger NS. ACOVE quality indicators. <i>Ann Intern Med</i>. 2001;135:653-67.</p>	<p><i>"If a vulnerable elder has symptomatic heart failure and left ventricular ejection fraction of 40% or less, THEN he or she should be offered treatment with an ACE inhibitor."</i></p> <p>Heart failure; ACE inhibitor use</p> <p><i>"If a vulnerable elder is newly diagnosed with hypertension, THEN there should be documentation regarding the presence or absence of other cardiovascular risk factors."</i></p> <p>Hypertension; Cardiovascular risk documentation</p> <p><i>"If a vulnerable elder is diagnosed with hypertension, THEN nonpharmacologic therapy with lifestyle modification for treatment of hypertension should be recommended, including 1) dietary sodium restriction and 2) weight loss if the patient is more than 10% over ideal body weight."</i></p> <p>Hypertension; Nonpharmacologic management</p>
<p>The Quality and Outcomes Framework (QOF) is a reward and incentive programme for GP surgeries in England, which measures achievement against about 140 indicators in four domains.</p> <p>The NHS Information Centre. https://mqi.ic.nhs.uk/PDFReportView.aspx</p>	<p><i>"The percentage of patients with a current diagnosis of heart failure due to LVD who are currently treated with an ACE inhibitor or Angiotensin Receptor Blocker, who can tolerate therapy and for whom there is no contraindication."</i></p> <p>Effectiveness; Planned Care Cardiovascular; QOF HF 3</p> <p><i>"In those patients with a new diagnosis of hypertension (excluding those with pre-existing CHD, diabetes, stroke and/or TIA) recorded between the preceding April 1st and March 31st : the percentage of patients who have had a face to face cardiovascular risk assessment at the outset of diagnosis (within three months of the initial diagnosis) using an agreed risk assessment treatment tool."</i></p> <p>Effectiveness; Planned Care Cardiovascular; QOF PP 1</p> <p><i>"The percentage of people with hypertension diagnosed after April 1st, 2009 who are given lifestyle advice in the last 15 months for: increasing physical activity, smoking cessation, safe alcohol consumption and healthy diet."</i></p> <p>Effectiveness; Planned Care Cardiovascular; QOF PP 2</p>

Defining criteria

Indicators define those elements of care which are subject to evaluation. However, they should provide us with reference points that are satisfactory and sufficient for assessment. Donabedian suggests that an indicator should be defined with such precision as to allow for its assessment by simple “yes” and “no” answers. Indicators that have these properties are referred to as criteria. To better illustrate this concept it might be useful to follow an example of a patient with hypertension. In judging the quality of care diastolic blood pressure can be used as an indicator. If we precisely define the desired numeric value limit then we will be able to treat this indicator as our criterion of care. In other words, diastolic blood pressure below 90 mmHg could be used as one of our criteria. “Yes” or “no” answer is one of the characteristics of a criterion. Criteria should refer to the selected population; they should be simple, clear, and objective. There are many ways of obtaining information that could facilitate formulation of criteria. These can be defined by experts or specialist groups (external criteria), i.e. formal guidelines, or directly by members of the team involved in quality cycle (internal criteria). This can be especially useful when there is limited number of reliable external resources (evidence) in regards to a given subject.

Specifying standards

When criteria are defined and accepted, it should be decided how they should be met in real practice, for example what part of the patient population should fulfill them. In this way a standard is set. A standard is a precise, quantified specification of a criteria, and is relevant to a given criterion. Using a previous example, we can consider the following statement as a standard: 60% of all patients with hypertension should reach diastolic blood pressure equal to or lower than 90 mmHg.

Standards define a level of care which could be further described as ideal, optimal, average, minimal or unacceptable. Minimal norms, although perhaps easily reachable, provide for only minimal level of care. Accepting such standards does not motivate members of the team and in well-functioning clinics could even lead to decreasing quality of care. On the other hand, in some circumstances only a minimal level of improvement is realistic and higher standards, although theoretically more stimulating, may not be attainable. It is therefore very important to select goals that are not beyond reach or impossible to achieve, as this may discourage the medical team and lead to failure. Setting intermediate goals is another good method of stimulating improvement. For example improving standards by 10% at intervals of, for example, every 3 or 6 months can often be a realistic and motivating roadmap for achieving higher standards of care.

Step III: Assessing current care



After setting standards for chosen problems the next step is to assess existing care against these standards. In this process five stages can be differentiated: (1) definition of a subject, (2) specification of a sample, (3) data collection and (4) analysis, (5) drawing conclusions.

Defining a subject

First the practice team should define precisely what will be a subject of data collection and analysis. In other words they have to choose appropriate source of information. Valid and useful information can be derived from various sources e.g. practice team members, financial data or other managerial data. Most often, especially in case of a patient oriented quality cycle, patients themselves or sometimes their medical charts provide essential information about the quality of care. It is unlikely that all practice patients can benefit from quality improvement in one chosen topic. So, data for the assessment of current care should be derived from the specific patient group. In other words, the selected population must refer to all patients included in the assessment. Usually, populations can be characterized as based on age, gender, diagnosis, socio-economic status, using a particular medication or a combination of any of these features.

Specifying a sample

Ideally, 100% of records with certain characteristics, or all patients belonging to the selected population should be examined. This is often unfeasible or even unmanageable due to the population size. Moreover, such efforts are not needed to draw valid conclusions, which can be made reliably after assessment of a sample of this population. It is important to select a relatively small and feasible group which should be representative of the target population.

Random sampling. In scientific terms random sampling is the best method of sample selection where each element or member of the population has equal chances of being selected. This however might be technically difficult due to the necessity of preparation of a complete list of patients that is a sample frame, and application of specific randomization tools, etc., that can make this method quite time and resource consuming. Although preferred in clinical research (but even there is not always applied), random sampling is used less often in quality assessment cycles. However, it can be extremely practical when used for practice based research, for example a study sample of all smokers in a practice might be onerous but a study involving all smokers who use the contraceptive pill might be entirely feasible.

Systematic sampling. It is an easier and less time consuming method. Execution of this method is based on selection of elements from an ordered sampling frame. It relies on arranging the target elements according to a set ordering scheme and selecting them at regular intervals through that ordered list. For example let's assume we want to sample 10% of our target population, we could arrange patient's records in alphabetical fashion, and randomly select one chart from the first ten, and then select every tenth chart for our review. Analysis of data obtained this way can however potentially contain some important errors. Records are rarely kept in a randomized fashion. When they are arranged alphabetically, entire groups (e.g. family records) could be clumped together. When they are arranged in other manner (e.g. by place of residence, street name etc.), socio-economic and cultural factors could confound collected data and results.

Stratified sampling. This relies on division of the population into several distinct categories considered as separate „strata.” Each of these groups have individual elements that are randomly selected to be elements of the sample. This method allows for inclusion of specific subgroups that may be lost in a more generalized random sample. For example if a team wants to have a sample with good representation of all patients with chronic diseases, we can randomly sample a certain number of them from all the registers of patients with different chronic diseases (e.g. diabetes mellitus, hypertension, etc.). This method improves accuracy of the estimation and focuses on the importance of different subgroups of elements. It is not useful when homogenous subgroups cannot be identified. Sometimes it is difficult and expensive, but in other circumstances might be more convenient and less demanding of efforts and resources.

Probability proportional to size sampling. This is a variation of stratified sampling taking into consideration the size of different subgroups. The chance of being part of the study sample is proportional to the size of the subgroup. This method improves accuracy by focusing on more frequent elements having a greater impact on the whole population. For example if we want to measure patients' satisfaction, we might include proportionally more hypertensive than heart failure patients.

Cluster sampling. In this method elements of the sample are chosen within groups, which are often clustered by geography. This method might be more useful for a larger scale quality assurance projects. For example, if surveying patients' opinion within a country, we might choose to select 10 practices within each region and then interview patients only within the selected practices. Not all patients would be interviewed, but only a sample of them within each of 10 selected practices. This reflects multistage sampling, which is commonly applied in this method. Cluster sampling saves costs and effort, but still can produce representative results.

Accidental sampling. This method is often also called convenience or opportunity sampling. In this method only these elements are included which are easily available. Normally it is not a representative sample and the results of the tests performed on such a sample are not conducive to making scientifically sound generalizations. For example if we interview the patients waiting for the consultation or leaving the office after it, we will get opinion of those who actually use services. This opinion doesn't reflect opinion of all practice patients (as in patients assigned to or belonging to a certain practice), because the point of view of those who do not use the services provided is not taken into consideration. They might be more critical, healthier or have other characteristics, which make them different from those who do not attend the practice. This method, although not fully representative from the scientific point of view, is quite useful for quality improvement projects as QI projects may focus more on actual users of care than on whole populations.

Sample size. A second challenge in specifying the sample is to define its size. There are special formulas, tables, and power function charts to determine proper sample size for scientific purposes. Again, such a rigorous regime is usually not required for quality improvement projects. There are several methods that can help define appropriate sample size, from complicated statistical calculations to easy rules. Consider these basic rules:

- If the target population is small, let's say 20 to 40 cases, then for the assessment to be valid, all cases should be sampled.
- Independent from the size of the population, larger populations require larger sample size.
- 20% sample from a given population will be often sufficient, i.e. if there are 250 records, selection of 50 is enough.

In the process of quality improvement, it is better to review even small number of cases than dwell on the appropriate sample size. When interventions become more complicated, then sample size becomes truly significant and might be one of the main obstacles preventing successful completion of the project. For practical reasons it is also possible to start with incremental sampling, that is to begin with a small sample size and then move on to a larger one to confirm the findings.

Collecting data

Data collection methods for the quality cycle should be feasible and reliable. It is important to design a method, which does not interfere with routine practice, especially when no additional resources are available for the purposes of quality improvement. Certain tools such as electronic or paper data entry forms might be helpful. Within each turn of the cycle the data will be collected at least twice, before and after implementation of the improvement plan. It is extremely important to collect the data using exactly the same method in the same circumstances (e.g. period of a year, day of a week or time of a day). This is a precondition for reliable demonstration of quality improvement achieved within the cycle.

Check list

A checklist is a form of data collection, consisting of items/categories. When item is present then a check is put beside of each item. It is used to facilitate the collection and analysis of data.

ACHIEVEMENT OF TREATMENT GOALS IN PATIENTS WITH DM AND CHD

Date:

Place:

Patient:

Data collected by:

If goal was reached
mark the box

1. Systolic BP < 140 mmHg
2. Diastolic BP < 90 mmHg
3. HbA_{1c} < 7,0
4. Fasting plasma glucose < 6,0 mmol/l
5. TG < 1,7 mmol/l
6. HDL-C > 1,0 mmol/l (male)
> 1,2 mmol/l (female)
7. No-smoking
8. BMI < 25
9. Waist circumference < 94 cm (male)
< 80 cm (female)
10. Healthy food choices
11. Physical activity

Fig. 1.6. Achievements of treatment targets in patients with DM and CHD

Analyzing data

Data analysis can usually be done with the use of relatively simple statistical methods. Frequency distribution, median and mean value with standard deviation usually can be easily calculated without any help of professional statisticians. However for big scale projects, requiring assessment of large and complex data such professional assistance might be helpful.

Scatter plot

A type of diagram that displays the type of relationship (so called correlation) between two variables. The data is presented as points (dots), which have value on vertical and horizontal axis.

Identified correlation may be positive (the pattern of points rises from lower left to upper right), negative (the pattern falling in the same direction) or null (variables uncorrelated). The plot may also include a trend line.

Used in analysis and presentation of data.

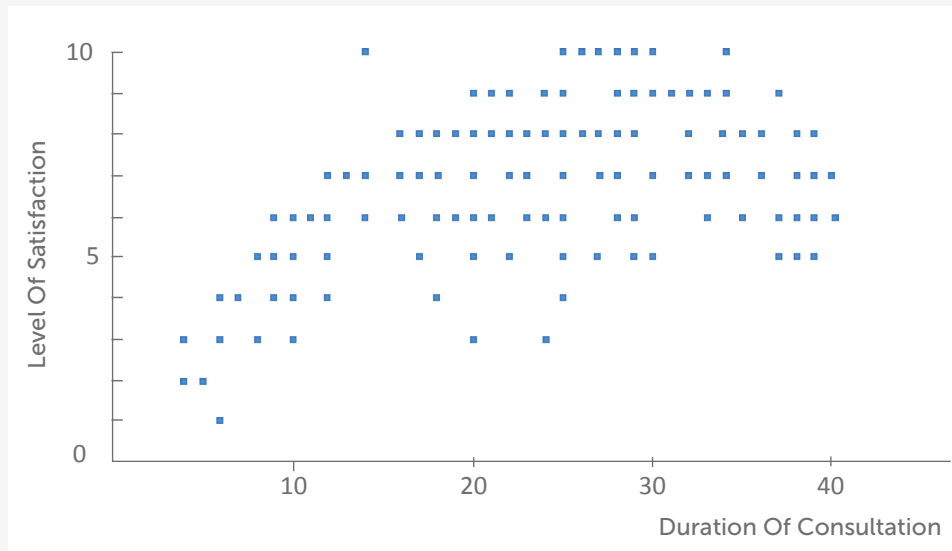


Fig. 1.7. Relation between duration of a consultation and patients' satisfaction

Drawing conclusions

Results of the data analysis should be presented in an understandable and effective manner to all members of the team. Inclusion of graphs, tables, and diagrams to illustrate the results is highly recommended. This can again be easily achieved using available simple computer software. The next step is to compare the results with standards of care. If set standards were reached, the cycle can be concluded. If not, a team should redesign the improvement plan. Results of each data analysis should be discussed with all staff members involved in the quality cycle, as exchange of opinions might help to reflect on different aspects of care.

Frequency diagram

Different visual graphs can be used to give an impression of the frequency of the observation.

Bar graphs and histograms employ rectangles, which represent some classes or categories. These categories are plotted on the horizontal axis, and the number of times they occur (or the percentages of their occurrences) are presented on the vertical axis. Bar graphs are used to show data that fit into categories and the bars are usually separated. Histograms are used to present continuous data and the bars are adjusted. The same data may be presented in a circle graph. Moreover, the number of times something occurs may be shown in a table. Used to present data in different steps of a quality cycle.

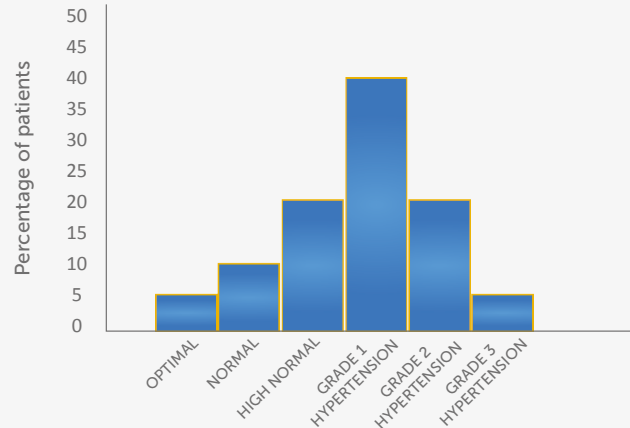


Fig. 1.8. Percentage of diabetic patients with particular blood pressure level

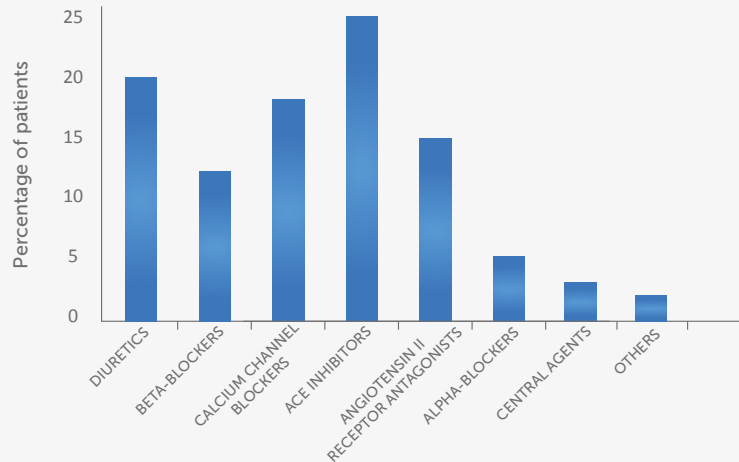
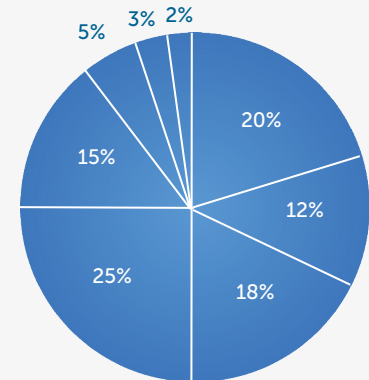
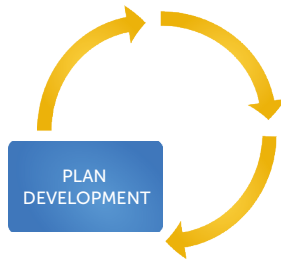


Fig. 1.9. Percentage of hypertensive patients receiving particular type of medication in monotherapy



Step IV: Developing an improvement plan



The quality cycle involves a planned-change approach to achieve success. In order to introduce changes there is a need to establish a plan or a roadmap that will guide the practice team through the process of improvement. Such a plan should be multistep, clear and easy to understand. It should have an attractive format and include a description of all proposed changes.

In small practices the best solution is to encourage each team member to be involved in the preparation of the plan. Assessing and commenting should be an integral part of the planning process. It could happen that a plan perfectly understood by a physician could be completely enigmatic for the rest of the team. When the plan is prepared in a written form, it is paramount to obtain opinion regarding the entire plan from each member of the team. Feedback related to their individual roles is especially important. Opinions expressed by the team members should be considered as relevant. A plan introducing a mistake is worse than having no plan at all.

Improvement plan

Generally an improvement plan should include the aim, which will be achieved, list the actions that will be undertaken with specification by whom, when and how. A similar structure is required both in clinical (i.e. management of hypertensive patients) as well as organizational projects (i.e. appointment waiting time). Below is presented a framework for a simple improvement plan, which can be used in a small FP's/GP's practice and might be prepared by the practice team without major external support (see Table 1.2).

For larger health care organizations a more complex plan which may include description of vision, mission and strategies may be required which would include a specification of short and long-term goals, particular phases and activities. Such plans might be prepared to be in place for many years. There may also be a need to establish specific QI teams with particular tasks. Sophisticated and comprehensive plans, using EBM methodology, are designed by experts over several months and may be quite expensive.

Tab. 1.2. Framework of an improvement plan

PART	ACTIVITIES	PURPOSE
1. AIM	<ul style="list-style-type: none"> – Go to step II of the cycle (standard setting) – Write a standard down – Clarify terms which may be unfamiliar 	Clearly state the aim of the plan, which is the very same as a standard of the cycle
2. BARRIERS / OBSTACLES	<ul style="list-style-type: none"> – List barriers/obstacles – Define them – Group them when possible – Consider which are the most important – Choose barriers for elimination 	Comprehensively identify barriers/obstacles/factors that may limit achievement of the aim (standard)
3. INTERVENTION	<ul style="list-style-type: none"> – Explore alternatives to break the barriers – Identify interventions for each barrier/obstacle – Define range and components of the intervention – Consider applicability in the practice – Decide which intervention is implemented 	Carefully select reliable intervention(s)/activities that will lead to improvement
4. PERSONAL RESPONSIBILITIES	<ul style="list-style-type: none"> – Nominate a member of staff who coordinates and monitors the activities – Identify one member of staff responsible for steering each intervention – Dedicate others to the interventions – Clarify tasks of each person involved 	Precisely define roles of team members in carrying out improvement activities
5. TIMELINE	<ul style="list-style-type: none"> – State the start date – Arrange intervention/activities/events chronologically – Define duration of each activity – State the end date and time of re-assessment (next phase of a cycle) 	Prepare a detailed program that shows order and duration of activities
6. RESOURCES	<ul style="list-style-type: none"> – Assess resources needed for each intervention/activity – Consider their availability – Design effective use of resources 	Realistically estimate resources needed (money, people, material, equipment, space, information etc.)
7. INTERMEDIATE ASSESSMENT	<ul style="list-style-type: none"> – Specify how the progress in particular activities is controlled – Decide who gets feedback and how often 	Design exactly how the realization of improvements will be monitored

Affinity diagram

A group decision-making method which helps in sorting a large number of ideas; data or concept generated during a group meeting. All ideas are recorded on separate, small cards or sheets of paper and then grouped into similar categories. Each category should consist of naturally related ideas. A logical heading of the category is created at the end of the discussion.

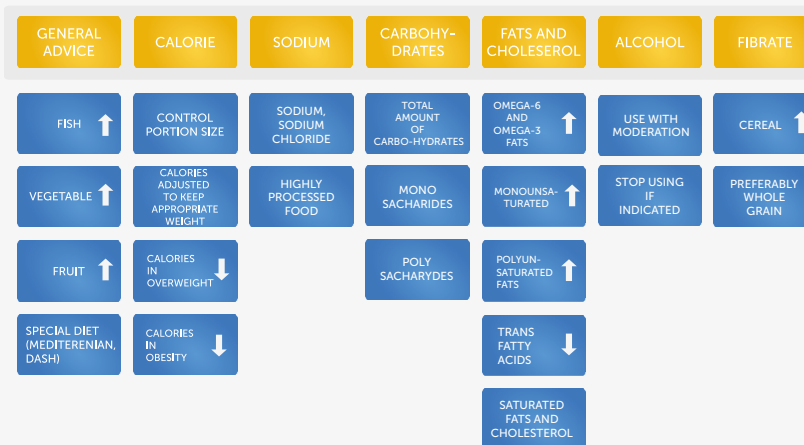


Fig. 1.10. Diet modification in cardiovascular diseases

It can be used for resources or intervention planning as well as for identification of barriers. Moreover it is valuable for problem analysis in different steps of a cycle.

Flow chart (run chart)

A pictorial representation of the process, which helps visualize and understand it. It can be used to show how the actual process operate and in such a way assist in identification of illogicality. The steps (small boxes) are presented in sequence and dependency relationship. Flow directions are represented by arrows and decision points by diamonds. The beginning and ending steps are presented in ovals.

It may be used for analysis of existing processes as well as planning new ones.

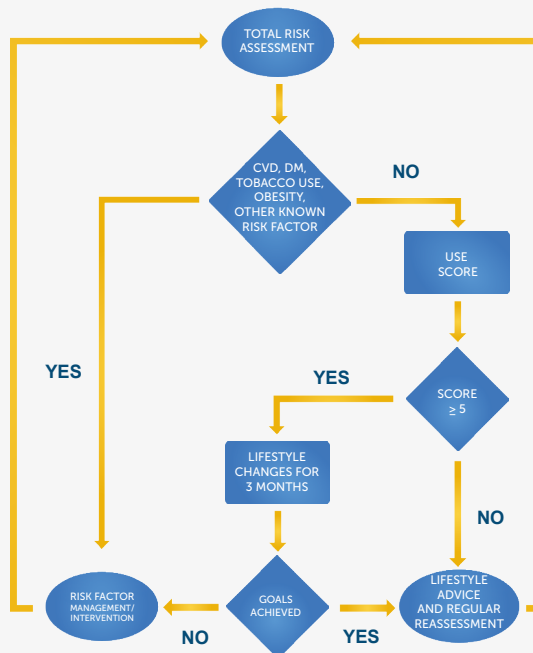


Fig. 1.11. Assessment and management of total cardiovascular risk

Pareto diagram

A bar chart used to arrange information in such a way that the causes of the problems/errors, showed as bars, are arranged in decreasing order, from left (largest) to right (smallest). It highlights the vital causes among existing others and helps focus efforts on the most important ones. Pareto principle states that roughly 80% of the effects come from 20% of the causes.

The left-hand vertical axis represents the unit of comparison and the right-hand axis cumulative percentage. The horizontal axis represents the categories (e.g. causes of a problem). It is possible to include also a line graph, which shows the cumulative percent of categories. It starts at the left-hand corner of a diagram and is calculated by adding percent of a category to the percentages that come from previous categories.

It is especially useful for identification of barriers in planning improvements.

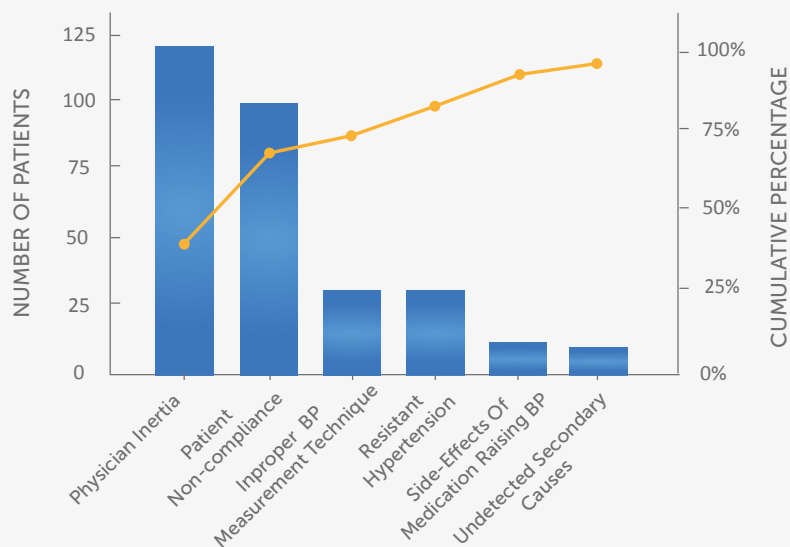
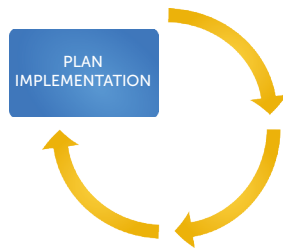


Fig. 1.12. Barriers for achievement of target blood pressure level in patients with hypertension

Step V: Implementing an improvement plan



Once the plan has been completed the most difficult part of the quality cycle is making the necessary changes. To achieve success, it is necessary to take into account several points from which only a few are really important. Generally, the bigger the changes the harder it is to implement them.

Implementing changes/improvements

Minor changes, with only small disruption on existing processes or routines can be made quickly and easily. Large scale changes, which are time consuming and affect everyone in a practice, will be complex and harder to deal with. To support their implementation in big organizations such as primary health care centres or group practices the principles from several theories of change may be used. In small practices some general advice ought to be followed.

It is necessary to take into account that practice team members are most likely to be crucial supporters or barriers for implementation of changes. So gaining commitment of people and engaging them is vital and increases the likelihood of success. A team needs to be motivated to want to make changes. Practice leaders should take into account that each staff member can react to changes in different ways. A leader ought to be aware that resistance is very often a natural human response to changes. Moreover, implementation of a plan can bring different emotions, not only acceptance or enthusiasm but also frustration, anxiety or even anger.

Carrying out the plan

After a plan is implemented, actually carrying it out will depend on the actions of involved staff. Maintenance of willingness to improve care and getting everyone involved will be just some of the pressing challenges for the practice leader. Effective communications, regularly updated information, willingness to listen and respond to team members are essential factors, which improve achievement of success. Moreover, attention should be given to reliable patterns and work habits that already exist in the practice in other areas. One example may be punctuality and teamwork. When regular meetings devoted to QI are organized they should start and end on time. Furthermore, each team member should attend these meetings.

Checking/supervising continuously

Without behavioral changes there will be no change. Often excellent ideas are presented that are initially accepted by everyone, they begin to be implemented, but ultimately people revert to their old ways. It is therefore important, especially in the transition period, that progress is continuously supervised and monitored.

Run chart (control charts)

A graphic tool used to show a change in a certain value over a period of time.

It helps analyze process performance and shows upward and downward trends. The horizontal axis is labeled with the unit of time and vertical axis with the data (past and current with a place for future data). Neighboring points of data are joined. It is also possible to indicate central tendency (mean, median) in the chart.

It may be used to track improvements in a practice.

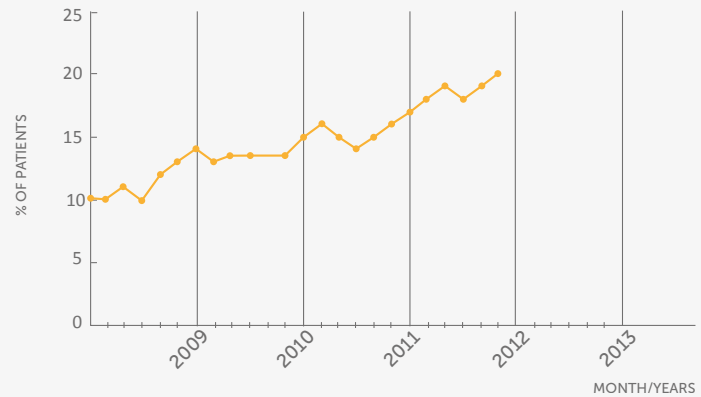


Fig. 1.13. Achievements of BP targets in patients with hypertension

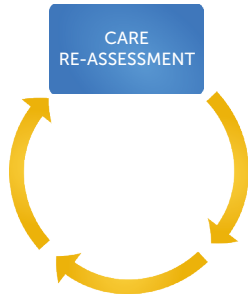
Keeping check during the process / ongoing adaptation

Carrying out the improvement plan is important, but the practice team should always be prepared to adapt the plan when analysis shows it to be necessary. Some problems can be anticipated and prevented while most of the others should be identified in the early phase and corrective action introduced quickly. Some factors may move the process forward and they should be empowered. On the other hand, restraining forces should be made visible and eliminated. A corrective action is essential when patients are unintentionally harmed.

Record keeping and documenting issues

Continuous record keeping is necessary for the next phase of a quality cycle – re-assessment of care. It is possible that while carrying out the improvement plan some unintended consequences of the changes will appear. Such problems should be documented and kept in mind when decisions about continuation of quality improvement activities are undertaken.

Step VI: Re-assessing care



Re-assessment is an important step in quality improvement cycle, as it is a confirmation of made improvements or failure in achievement of a set standard.

Collecting data after improvements

Data collection during the re-assessment phase ought to be performed sometime after changes were introduced. The exact period of time allowed for changes to mature is dependent on the selected topic. If introducing changes require a significant amount of time, reassessment would be proper after 6-12 months. There are cases however, where immediate re-assessment is preferred.

In this phase of a cycle the same methodology of data collection as in the third phase of a cycle (assessment of existing care) should be implemented. This means that methods of patient selection, sample size, indicators, measuring tools and techniques should be consistent and not be changed.

Analyzing data

In the process of re-assessment it is important to employ exactly the same criteria that were used at the beginning of the cycle (step III). It allows for clear comparisons of the level of care before and after an improvement phase.

Preparing information

Aggregated information about the results achieved after improvements should be prepared in a form that each member of the practice team will understand. The best way to visualize it is through utilization of different types of graphs, diagrams or tables. In this phase of the quality cycle the presentation of results should include not only the data from the re-assessment phase (step VI) but also comparison with the data from assessment phase (step III).

Identifying what was learned

This is an opportunity to look back at the entire process and identify important experiences. Discussion or debate devoted to this issue should be encouraged. All members of the team should look at the results of their activities with constructive criticism. Not only advantages but also limitations and drawbacks of the improvement process should be analyzed. While reflecting and evaluating the whole processes it is useful to link the specific actions of the improvement plan with the appropriate results.

Concluding

In this stage a conclusion is reached as to what were the overall results of the quality cycle. The most important and interesting is a conclusion as to whether the set standards were achieved, overcompensated (rarely), or only partially accomplished (more often). Based on this conclusion, future projects to be undertaken by the practice team can be discussed.

Continuing QI in practice

There is no single and correct approach which can be implemented at the end phase of the quality cycle. This method is most appropriate for continuous development in FPs'/GPs' practices. If improvement was achieved changes should be institutionalized and standardized. In other words, they ought to become a part of routine practice so that deviations, when they appear, are picked up. If there is no improvement of patients' care other solutions should be tried. The greatest danger of failure in a quality cycle is not getting started or stopping just after the re-assessment phase when none or only a little improvement was made.

Continuing

Even if set standards and goals were reached, important projects should remain in the process of continuation. The quality improvement cycle involves cyclic action and in such a way gives opportunity for being repeated again and again and raising the level of care each time, or try to attain a standard in a different way if it was unsuccessful or partially achieved on a previous occasion. In such a situation the practice team needs constant stimulation. New approaches and ideas should be developed in order to keep the cycle going. The cycle can be continued until room for further improvement is exhausted.

Adapting/Verifying

If the goals were not met but there is still possibility for further improvement, a project can still be continued. It can be used as a prompt for re-entry into the cycle where the team can adapt the improvement plan. Most probably it will require a different strategy, identification of real barriers which were not revealed previously

and designing more effective interventions. There is also a chance to analyze the standards which might have been set at a level too high to be achieved, especially in the short term and by an inexperienced team.

Abandoning (closing)

For the majority of projects, limitations such as time and resources, necessitate stopping them. Moreover, forces outside the practice (e.g. new legal regulation, changes in sources of funding, different expectations of patients) may also influence decisions about continuation or abandonment of particular activities. A demand for a cycle related to new topic might also surface. Nonetheless, in the situation when the quality cycle is abandoned it is well worth reflecting on what had been learned from the processes and results of the past activities.

Planning for the future

Procedures or processes that have significant impact on patient care should be reviewed regularly and systematically. If a team decides to abandon improvement related to one topic at least periodic monitoring (e.g. in every two or three years) should be considered to confirm or verify stability of improvement. It is especially important when the team expects that results obtained are not permanent or problems in practice are not fully resolved.

Disseminating results

A successful QI cycle may be a reason to celebrate achievements in the practice and should be the basis for disseminating the results. Good examples can popularize the value of the PDSA cycle and allow for replication in other practices. Interested physicians can learn valuable lessons whether or not the changes implemented in the particular practice resulted in the improvement of care, what was optimal sequence of actions, what were the difficulties.

Sharing experiences from performing quality cycles may be relatively easy during local doctors meetings or through Internet forums or websites. It requires more effort to make a presentation for FPs/GPs congresses or conferences. Publication in national and international journal may be a challenging option, and not easy for the practicing and busy physicians, but it may give additional satisfaction.

It should be highlighted that local or regional health authorities should support dissemination of information about QI activity in practices. Moreover, associations and colleges of FPs/GPs should be also involved. Good examples of innovation in one practice can be multiplied and lead to improvement of primary care on local level. The mass media can disseminate information about QI achievements in FPs/GPs practices and in such a way build a positive image of family medicine/general practice.

Key messages for GP practice

- Continuous quality improvement based on a quality cycle has already proved to improve patient care not only in hospitals and other large healthcare organization but also in small, single handed practices of FPs/GPs.
- FPs/GPs should understand the general concept and principals of a quality cycle and should be able to plan simple improvements and participate in more complex projects.
- Professional organizations of FPs/GPs and local or regional health care authorities should be involved in promotion and facilitation of the quality improvement activities undertaken by practice teams on primary health care level.

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Chapter 2

Other Methods and Tools for Quality Improvement in General Practice

Tomasz Tomasik, Adam Windak

Learning objectives:

- ability to list the different methods of QI in general practice/family medicine
- understanding of the differences between QI methods
- ability to describe the basic principles of QI methods which are commonly used in family medicine/general practice

There is no single best approach to quality improvement in general practice/family medicine. The quality improvement cycle, which was described in the previous chapter of this guidebook, can be considered a basic method for quality improvement. It is efficient and consists of several steps. In steps IV and V of the cycle (development and implementation of improvement plan) several improvement methods and tools can be used. These tools can be classified in different ways based on similarities and common features of the methods. These classifications can be helpful to understand the principals of the methods and facilitate the identification, selection and implementation of the appropriate methods to improve care in a practice. On the other hand having a range of methods and tools shows that quality improvement is a complex process, which requires specific knowledge and skills, as well as careful preparation. Some of the methods are very well known to health care providers and have been used in medicine for a long time (e.g. educational meetings). Some are relatively new (computer based decision supporting systems, online learning, blended learning) and require new technology and skill sets.

There are methods of quality improvement when used alone show only a limited effect. In light of this fact, the combination of different methods has

become more and more popular in primary care, and this approach may lead to more significant quality improvement overall.

Predisposing, enabling and reinforcing QI methods and tools

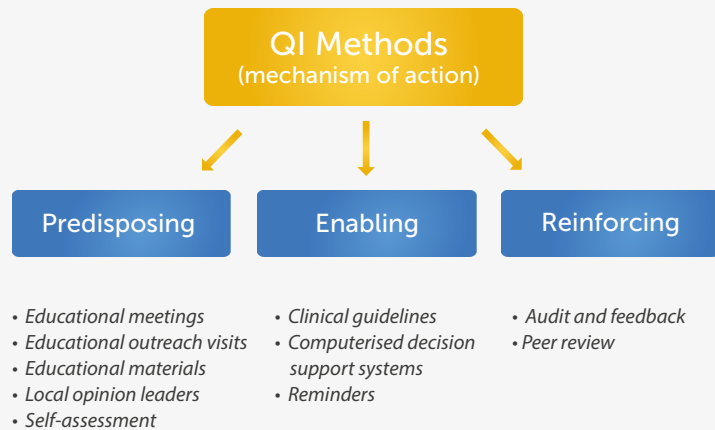
This chapter is not a complete review of QI methods but rather attempts to highlight the aspects that seem relevant and important to FPs/GPs. A classification of methods and tools which is presented in this chapter was proposed by C. Woodward (WHO, 2000). He distinguished the predisposing, enabling and reinforcing strategies for assisting health workers in developing the quality of care. A brief description of the particular methods is provided along with the conclusions drawn by the author upon reviewing the evidence of effectiveness of the method (Box 2.1).

Box 2.1. Predisposing, enabling and reinforcing QI methods and tools

Predisposing methods make doctors and other health personnel more likely to provide care in a particular way.

Enabling methods help physicians to introduce changes in their practice.

Reinforcing methods support and give motivation to continue provision of high quality care to the patients.



Predisposing methods

Educational meetings of various kinds are commonly used for continuing medical education of health professionals. They include conferences, symposia, courses, medical rounds, lectures, workshops, tutorials and seminars. The aim of educational meetings is to alert physicians of new developments in the clinical field as well as improve physicians' knowledge, skills or enable a change in attitude. In this way, education is expected to improve professional practice, quality of care and patient outcomes. However, this strategy alone, especially traditional group teaching, has limited effectiveness. Positive results are better achieved when this method is combined with other quality improvement interventions e.g. audit and feedback.

Educational outreach visits are a type of face-to-face visits. A trained person observes a practitioner and provides information and feedback focused on their specific, individual needs. The information is often, but not always, prepared in the form of a written assessment report. The information given may include feedback about performance (e.g. prescribing behaviour, preventive activities, practice management), or outcomes (e.g. achievement of treatment goals in particular group of patients). Another type of information might relate to overcoming obstacles and barriers for necessary changes in the practice. This method is also known as academic detailing or educational visiting. Although visits became quite popular in the Netherlands, they are rather limited in use because of the high costs and demands on resources such as manpower and time that are associated with this type of activity. The method has been also widely used by pharmaceutical companies in order to improve sales of their products. This is one reason why many doctors are familiar with it.

Educational materials are long-established and commonly used methods of disseminating information to FPs/GPs. Traditionally the materials are presented in printed format as books, brochures, leaflets, booklets and posters. Educational materials can also be disseminated electronically, in digital form, to large numbers of healthcare professionals (e.g. e-text, scanned text, web-based text, and audio files). This method belongs to the passive type of strategies but is relatively inexpensive. It may improve knowledge and awareness among practitioners, but less likely to influence professional skills, behaviour or patient outcomes. The improvement of quality of care is greater when the dissemination of educational materials is combined with other methods.

Local opinion leaders are influential members of a group of doctors in a community whom others recognise as knowledgeable and turn to them for opinion, advice or views. On the whole they are believed and trusted. They communicate well, organise and participate in group work, recognise the importance and contribution of others, and are able to take risks. This recognition is not a function of the individual's official position or formal status in the health care system but is earned and maintained by the individual's competence and characteristics. Opinion leaders can support dissemination of ideas and facilitate behaviour change. Their engagement in the identification of problems and the implementation of improvement activities significantly influences other FPs/GPs and increases the chances for success. On the other hand, the reluctance of opinion leaders to propose changes can be a critical barrier for QI.

Self-assessment methods assist individual FPs/GPs in reviewing their knowledge, skills or current practice. This term is used to describe different types of activities such as "self-administered examination of knowledge", "self-rating", or "self-audit of clinical performance". Although this method guarantees doctors independence and autonomous development, there is a risk that the available tools (self-assessment checklists, inventories,

questionnaires) are not valid enough. Moreover, there is a concern that many physicians may not have the necessary experience to make an independent evaluation. Therefore, the successful implementation of this method may be much more difficult than it is commonly accepted. While self-assessment reveals gaps in performance, the next step is to plan appropriate action, find resources and implement changes in care provided to the patients.

Tab. 2.1. Predisposing methods in QI

Method Author/source	Authors' conclusion
<p>Educational meetings</p> <p>Forsetlund L, et al. Continuing education meetings and workshops: effects on professional practice and health care outcomes. <i>Cochrane Database Syst Rev.</i> 2009;15;(2):CD003030.</p>	<p><i>"The effect on professional practice tended to be small but varied between studies, and the effect on patient outcomes was generally less. It is not possible to explain the observed differences in effect with confidence but it appeared that higher attendance at the meetings was associated with greater effects, that mixed interactive and didactic education was more effective than either alone, and that the effects were less for more complex behaviours and less serious outcomes."</i></p>
<p>Educational outreach visits</p> <p>O'Brien MA, et al. Educational outreach visits: effects on professional practice and health care outcomes. <i>Cochrane Database Syst Rev.</i> 2007;17;(4):CD000409.</p>	<p><i>"...outreach visits consistently provide small changes in prescribing, which might be potentially important when hundred of patients are affected. For other types of professional practice, such as providing screening tests, outreach visits provide small to moderate changes in practice. But the effects really varied and why it varied could not be explained."</i></p>
<p>Printed educational materials (PEMs)</p> <p>Farmer AP, et al. Printed educational materials: effects on professional practice and health care outcomes. <i>Cochrane Database Syst Rev.</i> 2008;16;(3):CD004398.</p>	<p><i>"PEMs when used alone may have a beneficial effect on process outcomes but not on patient outcomes. Despite this wide of range of effects reported for PEMs, clinical significance of the observed effect sizes is not known. There is insufficient information about how to optimise educational materials. The effectiveness of educational materials compared to other interventions is uncertain."</i></p>
<p>Local opinion leaders</p> <p>Flodgren G, et al. Local opinion leaders: effects on professional practice and health care outcomes. <i>Cochrane Database Syst Rev.</i> 2011;10;(8):CD000125.</p>	<p><i>"Opinion leaders alone or in combination with other interventions may successfully promote evidence-based practice, but effectiveness varies both within and between studies."</i></p>
<p>Self-assessment</p> <p>Davis DA, et al. Accuracy of physician self-assessment compared with observed measures of competence: a systematic review. <i>JAMA.</i> 2006;6;296(9):1094-102.</p>	<p><i>"Physicians have a limited ability to accurately self-assess. The processes currently used to undertake professional development and evaluate competence may need to focus more on external assessment."</i></p>

Enabling methods

Clinical guidelines are documents containing recommendations supporting medical decision making in specific clinical conditions, based on a systematic review of the existing scientific evidence and the best practice experience. They may also refer to areas of medical practice beyond the clinical aspect.

Guidelines may be used as: a summary of the contemporary knowledge and practices in a given area, tools for individual decision making, a point of reference in quality assessment, an aid to organize health services, a tool in internal or external quality assurance activities and a tool in self-education.

Medical guidelines can refer to various clinical actions, including prevention, diagnosis, treatment and palliation as well as non-clinical (e.g. organizational, educational) aspects of care provision. Top-quality guidelines are usually developed by national or international scientific associations and/or governmental organizations. However local guidelines are often set up by groups of providers or organizations in order to influence local practice on a limited basis. In many cases they may be an adaptation of major guidelines adjusted to local circumstances.

High quality guidelines should meet basic requirements, defined by the set of essential features (Box 2.2).

Box 2.2. Clinical guidelines – essential characteristics and their meanings

Validity

means that recommendations included in the guidelines should be based on available scientific evidence and in cases where it is missing on the best clinical experiences

Feasibility

means that recommendations should take into consideration the available resources and real world circumstances in which real care is provided

Specificity

means that recommendations should acknowledge case variability and different conditions (e.g. additional risk factors, co-morbidity, age groups etc.) met in clinical practice

Flexibility

means that recommendations should provide as detailed information as possible; however they should leave the space for individual judgment, which might be affected by patients' expectations, physicians' experiences or other circumstances

Explicitness

means that recommendations should be given in an unambiguous manner, avoiding unclear terms and conditions

Attractiveness

means that recommendations should be provided in an attractive and clear form, enhancing the chance for their effective implementation by the recipients

The development of high quality guidelines is often very time and resource consuming. It should also follow a rigorous methodology which includes a systematic review of the existing evidence and a consensus procedure by experts. The experts involved in the process of guidelines setting should have not only an outstanding level of knowledge, but also experiences in the given area. The involvement of representatives of the target population in the consensus procedure is very important in securing the relevant feasibility of the product. A multidisciplinary group of experts is usually needed in order to properly balance scientific evidence and

practical experiences. Academics, clinicians of different specialities, family doctors, nurses, other allied personnel and methodologists are often involved. This last group may consist of experts in quality assurance, medical literature reviews, statistics etc. In many countries it is also common to invite patients, managers, administrators, representatives of insurance companies, decision makers and even politicians. Obviously, a broad professional representation enhances the chances for higher acceptability as well as making the implementation of the product easier.

The guidelines' setting procedure is usually conducted in three phases: preparation, development and implementation. The preparation phase requires a clear working plan and agenda of work. The responsible body or organization should establish a proper working group capable to conduct the process and secure the relevant resources for it. A group of experts should also be appointed.

The development phase usually starts with the literature review and the drafting of the content of the future guidelines. The next step is to discuss proposed recommendations within the agreed consensus procedure. Local guidelines might be produced using a relatively simple procedure such as a consensus conference. There is a serious risk, however, that in this direct and rather unstructured discussion, the group of experts can be dominated by influential individuals who might bias the end product. That is why national or international guidelines are usually produced with the use of more reliable methodology based on formal and structured consensus, which might be direct (e.g. formal consensus conference with a structured procedure) or indirect (e.g. Delphi method). In this last case, experts do not exchange their opinions in an open discussion, but rather via electronic or post questionnaires in which they present their opinions and arguments. This allows all of the experts to be equally involved and contribute to the product on the same basis.

The implementation phase starts with the publication and the launching of the guidelines, quite often during special scientific conferences. The successful implementation of the guidelines requires extensive promotion and other awareness building related activities. They might include educational and scientific conferences, educational courses, informative leaflets, electronic reminders and other events or tools aimed at spreading information about the guidelines and its contents.

There are many examples of successful guidelines for family physicians published nationally or internationally (e.g. guidelines of the Dutch College of GPs, British NICE guidelines). They usually require significant financial resources. However local guidelines, often based on those which are widely available, if properly adapted and implemented, can be of enormous support in daily practice. Family doctors should be encouraged to use both relevant guidelines and to be involved in their production.

Guidelines are only recommendations and their use is purely voluntary. The term is often wrongly interchangeably used with others such as **care maps**, **clinical pathways**, **protocols** or **algorithms**. These describe the subsequent steps and decision points in the management of specific diseases or a particular type of patients. These methods standardise medical decisions and health care personnel are expected (or obliged) to follow them and little deviation is anticipated.

Computerized decision support systems are information technology based systems which help practitioners deliver care especially for chronically ill patients. These systems analyse a patient's characteristics and provide

an assessment, recommendation or other kind of suggestion for adequate care. They can assist in different clinical areas such as prevention (e.g. immunisation, screening), diagnosis (e.g. suggestion for diagnosis), treatment (e.g. alerts for drug interactions, recommendation of drug dosage) and follow-up (alerts for duplicate testing, reminders for monitoring drug adverse events). The active systems analyse medical data of individual patients and provide information automatically, while the passive systems give information when physicians specifically request it.

Reminders are a type of previously described decision support system and consist of manual or computerised prompts. They assure that physicians or other health care providers do not forget important information before or during a patient consultation. They provide a reminder about patient allergy to particular drugs, the necessity for laboratory tests or specialist consultation or an indication for preventive services (a pap smear, mammography). Manual reminders include notes in a patient's chart, checklists and flowcharts. Computer reminders appear as messages on a computer screen.

Tab. 2.2. Enabling methods in QI

Method Author/source	Authors' conclusion
<p>Clinical practice guidelines</p> <p>Grimshaw J, Russell I. Achieving health gain through clinical guidelines. In: Developing scientifically valid guidelines. Qual Health Care. 1993;2(4):243-8.</p>	<p><i>"Clinical guidelines cannot achieve health gains unless they are scientifically valid...They can achieve health gains if appropriate development, dissemination, and implementation strategies are adopted during their introduction."</i></p>
<p>Computerized clinical decision support systems (CCDSSs)</p> <p>Roshanov PS, et al. Computerized clinical decision support systems for chronic disease management: a decision-maker-researcher partnership systematic review. Implement Sci. 201;6:92.</p>	<p><i>"CCDSSs can improve chronic disease management processes and, in some cases, patient outcomes. Recent trials in diabetes care show the most promising results. The mechanisms behind systems' success or failure remain understudied."</i></p>
<p>Computer reminders</p> <p>Shojania KG, et al. The effects of on-screen, point of care computer reminders on processes and outcomes of care. Cochrane Database Syst Rev. 2009 8;(3):CD001096.</p>	<p><i>"Point of care computer reminders generally achieve small to modest improvements in provider behaviour. A minority of interventions showed larger effects, but no specific reminder or contextual features were significantly associated with effect magnitude. Further research must identify design features and contextual factors consistently associated with larger improvements."</i></p>

Reinforcing methods

Audit and feedback is a method which involves collecting data on the clinical performance of health care professionals, analysing and assessing it and then providing information back to the practitioners. There are different ways of auditing a practice: medical records review, performance reviews, assessment of data from a pharmacy or from prescription records, or from an insurance agency or trained practice surveyors.

Most often the feedback is provided in a written format and includes a summary of data on the process of care or health outcomes over a specific period of time. It compares the performance patterns with accepted guidelines or the performance of direct peers and sometimes larger group of providers. Most typically it contains information about achieved therapy goals, adherence to clinical guidelines, patient satisfaction, cost and number of prescribed medications.

Audit and feedback may be directed to an individual physician, or a group of them, or even to a multi-professional team. It directs the recipient's attention to critically reflect on achieved results and facilitates change in the physician's beliefs about his or her own competences and motivates change. Audit and feedback can differ in terms of duration and frequency. It can be used as an independent method, but quite often it is combined with educational activities, economic incentives and/or specific suggestions for improvement. Health authorities or professional organisations are the parties which most often initiate and lead this process.

Peer review groups, also called quality circles, are formed by family doctors in order to work together on the quality of their medical practice. The groups are usually self-managed, however in some countries they receive structured administrative support. In most cases participation is voluntary, although certain incentives may exist. The size of the group is usually limited to allow the active participation of all members, usually around 10 – 12 people regularly attending meetings organized once or twice a month. Members of the groups belong to the same profession, have similar education and professional experience and conduct similar work on a daily basis (that is why they are referred to as “peers”).

Not only family doctors, but also nurses, practice assistants or other health care professionals can form their own peer review groups. Depending on the tradition, the peer review groups may work according to a fully structured or a loose agenda and methodology. Topics are generally related to the routine daily practice and are chosen by the group members themselves. The theme of the meetings is agreed upon in advance for a certain period of time (e.g. several months). Newly emerging issues often are accepted for additional discussion however special attention must be paid to avoid interrupting the previously agreed working plan.

Tools used during the meetings may vary from unstructured discussion through case presentations, a chart audit or even a full version of the quality cycle and extensive quality improvement projects. Agendas of the meetings are usually prepared by the members of the group; however external experts (e.g. specialists, pharmacists, psychologists, administrators etc.) may be invited to contribute. Meetings are chaired by one of the group's members. This function may rotate every meeting or after certain period of time. In some countries selected family doctors are specially trained to act as tutors and to facilitate the work of these peer review groups.

Participation in quality circles is often perceived as mutual support in daily practice, a break from professional isolation, a practical tool in internal quality assurance, a motivator and a tool in the continuous educational and professional development of the practitioners.

It is necessary to emphasize that the various methods briefly described in this chapter can be used as components of a multifaceted strategy. For example, the combination of predisposing methods (e.g. education in small groups) with enabling methods (e.g. clinical decision support system) and reinforcing methods (e.g. audit and feedback) may lead to even greater improvement of patient care.

Tab. 2.3. Reinforcing methods in QI

Method Author/source	Authors' conclusion
<p>Audit and feedback</p> <p>Ivers N, et al. Audit and feedback: effects on professional practice and healthcare outcomes. Cochrane Database Syst Rev. 2012;6:CD000259.</p>	<p><i>"The effect of audit and feedback on professional behaviour and on patient outcomes ranges from little or no effect to a substantial effect. The quality of the evidence is moderate. Audit and feedback may be most effective when:</i></p> <ol style="list-style-type: none"> <i>1. the health professionals are not performing well to start out with;</i> <i>2. the person responsible for the audit and feedback is a supervisor or colleague;</i> <i>3. it is provided more than once;</i> <i>4. it is given both verbally and in writing;</i> <i>5. it includes clear targets and an action plan."</i>
<p>Peer review</p> <p>Roberts CM, et al. A randomized trial of peer review: the UK National Chronic Obstructive Pulmonary Disease Resources and Outcomes Project: three-year evaluation. J Eval Clin Pract. 2012;18(3):599-605.</p>	<p><i>"The combined quantitative and qualitative findings indicate that targeted mutual peer review is associated with improved quality of care, improvements in service delivery and with changes within departments that promote and are precursors to quality improvement."</i></p>

Other classification of QI methods and tools

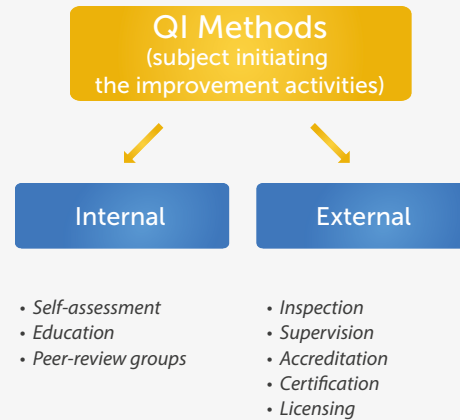
Four other basic classifications of QI methods are presented in this chapter. They highlight the most important characteristics of the methods and enumerate examples.

One of the most classical and oldest classifications of QI methods distinguishes between external and internal intervention, depending on which subject initiates and performs the activities.

Box 2.3. QI methods and tools divided by subject initiating the improvement activities

Internal QI methods are undertaken and conducted by the same medical professional or local group of practitioners that provide care to patients.

External QI methods are implemented by an outside organization that does not participate in the provision of care but may be responsible for the organisation or control of the system (governmental structures, professional bodies).



Most of the **internal QI methods** have been described in the previous part of this chapter. Their implementation is based on internal motivation for QI and requires some specific skills and knowledge, sometimes additional resources, a climate of trust and the need for changes in the practice. These methods secure professional autonomy and are considered less formal and bureaucratic. If appropriately implemented, they give more satisfaction to physicians and the whole practice team.

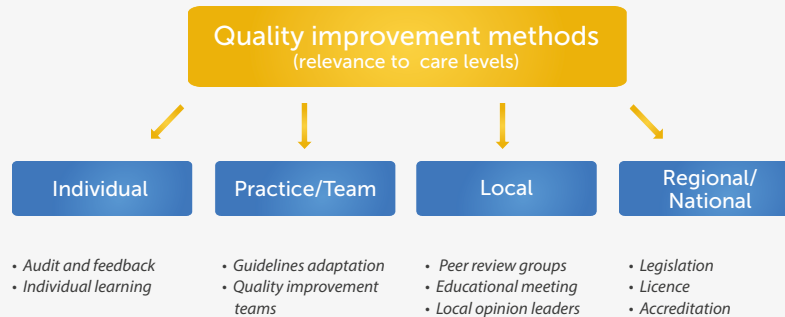
External methods provide a stimulus to maintain the quality of care on a certain level. Furthermore, they guarantee transparency and accountability and incorporate the perspective of the administration (and often the patients' perspective as well) into provided care. In some countries these methods are undertaken ad hoc and may involve bureaucratic rules and processes. Moreover, some of these methods put an emphasis on sanctions against health care providers. Most of FPs/GPs may view external QI methods as administrative activity in excess of the usual demands of teamwork of everyday practice.

The most typical example of an external QI method is an inspection. It usually involves official checking of a practice for adequacy of resources or the accomplishment of established requirements. Supervision is an activity provided by a senior member of the profession to a junior member. A supervisor observes practice and gives feedback or guidance. Other external methods are certification and accreditation, although these terms are often used interchangeably. They are formal processes by which an authorised body assesses and recognises whether a particular subject meets pre-determined and published requirements or criteria. While accreditation applies only to practices, certification might be implemented to individuals, as well as to health care organisations. Both of these methods are voluntary, unlike licensure. The latter one is an external and obligatory process by which a governmental authority gives permission to the health care organization or practitioner to operate and care for patients. On the whole, external QI methods ensure that a doctor or organisation meet a minimal standard of care, however they do not guarantee continuous improvement of care.

Different quality improvement methods can be introduced on different levels of the health care system. It is obvious that on the practice or local level, internal quality methods are more appropriate and easier to implement. On the other hand, on the regional or national level, external methods are undertaken.

Box 2.4. QI methods and tools divided by relevance to health care levels

There are specific QI methods suitable for individual physicians, who can implement them, without external assistance. Other methods presume participation of the whole practice team. Some methods can be used on the local level and involve larger numbers of FPs/GPs. They assume participation of doctors from different practices. There are also methods which may be undertaken by regional or national authorities.



Most of the methods enumerated as examples relevant on the individual or practice level have been already described in this guidebook. The quality improvement team which operates in a practice is a typical internal QI activity. Health care workers meet systematically, analyse the care they provide to the patients and implement changes when necessary.

Here we will highlight examples of those not yet mentioned. Legislation may be categorised as an external method that is implemented on the regional or national level. It includes state or local regulation which covers a wide range of legal concerns. It governs the way primary care and practices inside the system work. Legislation can positively affect areas, which are important for QI. The areas include vocational training of physicians and nurses, mandatory continuing education, training institutions for health care workers and the restriction or removal of licence. Legislation can introduce incentives or sanctions to reinforce improvement.

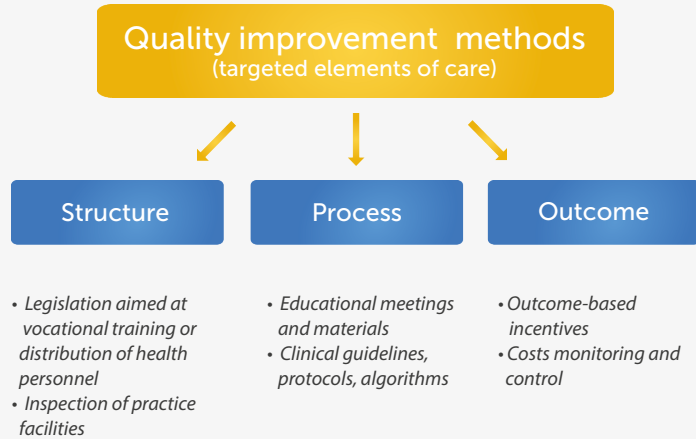
The improvement of care can be conceptualised into three components: structure, process and outcome, which were described in Chapter 5 “CME and QI as part of CPD” of Part I of this guidebook. Different methods improve particular components of care. Moreover, the improvement of the structure and processes results in better patients’ outcomes. There are also methods that focus specifically on the outcomes of health care.

Box 2.5. QI methods and tools divided by targeted elements of care

Methods improving **structure** of a practice aimed at development facilities, equipment or qualification of care provider. Other interventions can improve structure of primary health care system.

Process changes focus on improvement of what is done in a practice (e.g. prevention, diagnosis and therapy).

Some methods are used to identify, measure and improve the final **results** of care (e.g. mortality, morbidity, functional status, patient satisfaction, quality of life) or administrative outcomes.



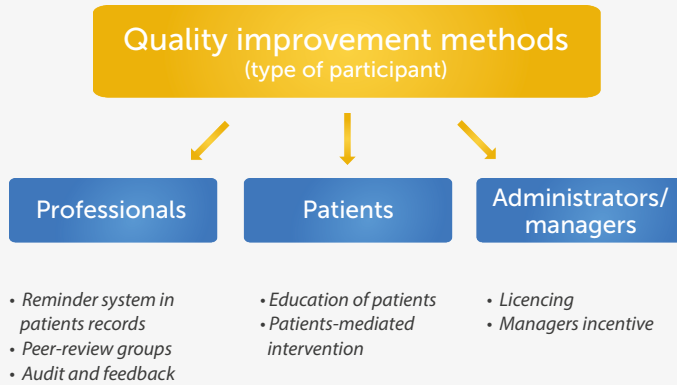
Outcome measurement systems are used to identify and analyse the effects or results of provided care. The project called, 'Quality and Outcome Framework - QOF' may be indicated as an example. It is currently undertaken in the United Kingdom by the National Institute for Health and Clinical Excellence (NICE). The project makes a partial payment for medical services in primary health care dependent on achieving a certain level of care measured by clinical indicators.

Keeping costs within a desired level is an important part of management of FPs/GPs practices. Sometimes this responsibility belongs to a physician who runs the practice, sometimes to a practice manager. The collection and analysis of financial information as well as corrective actions may influence the quality of care.

The role of the health care provider is to deliver safe and efficient care with respect to the patients' perspective on quality. This approach is especially important in family medicine/general practice where patient-centred care is one of the priorities. Some quality improvement methods and tools focus on patients. Others pertain to practitioners or administrators.

Box 2.6. QI methods and tools divided by type of participant

While most QI methods relate to behaviour of FPs/GPs and other health workers in a practice, some of them can focus on patients and anticipate their active engagement. Other methods are more suitable for health care managers and administrators.



In the so-called patients-mediated intervention, information is gathered directly by the patient and then provided to health care worker. This information is expected to modify their performance in the practices. Another typical intervention that focuses on patients is education. Patients may be given instructional materials or may be asked to participate in educational meetings (group, individual) organised especially for them, or to participate in activities of recognised Patient Agencies and disease specific patient support groups.

Managers and administrators do not deal directly with patients but should create and support initiatives that promote quality improvement.

Key messages for GP practice

- There is a large number of QI methods that can be used by FPs/GPs in their practice.
- No single method of QI is suitable for all problems and insufficiencies in primary care practices.
- To improve quality of care the methods should be carefully selected and address directly the problems identified in a practice.
- Most of these methods, although not well evaluated, appear to have moderate effectiveness and differ in the amount of resources needed for their implementation.
- Multifaceted interventions which combine two or more QI methods are likely to be more effective than any single intervention.

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Chapter 3

Patient Participation in Implementing Quality Improvement in General Practice/Family Medicine

Andrée Rochfort

Learning objectives:

- ability to outline the role of patient participation in the implementation of quality improvement initiatives in general practice/family medicine
- ability to stimulate the development of valid systems of patient participation at practice level and in healthcare organisations

Health professionals can learn from patients and their families who have been affected by an adverse health care related incident or a perceived deficiency in their experience of the quality of care provision. The validity of patients' views is paramount and should be assessed by methods such as by high quality qualitative studies to focus on aspects of care such as structure, process and outcomes. By listening to the patient and carers' experience and reflecting on that care, it enhances the possibility of organising improvements in healthcare delivery in the future, both by healthcare organisations and the individuals who work for them.

The WHO World Alliance for Patient Safety held its inaugural meeting of its Patients for Patient Safety Unit (PFPS) in 2005. It has created a framework to bring patients and health providers together to enhance open communication and a team approach towards improving quality and safety in health care. At their workshops, patients and health care professionals come together to share experiences, analyse, discuss and develop strategies to cultivate and promote patient safety initiatives and action plans. These activities help to support national and regional leadership to advance constructive communication between patients and healthcare organisations.

Medical error and poor quality care are inherent aspects of health care provision. “To Err is Human”, the ground breaking publication from 1999 brought these stark facts to the attention of the public and the professions alike. The subsequent publication “The Quality Chasm” also highlights the opportunities that are presented to us for sharing lessons these learned between patients and professionals for the betterment of healthcare delivery.

The challenge of managing the increasing burden of chronic illness in primary care, for example diabetes and cardiovascular disease, in the current environment of spiralling healthcare costs, cannot be successful unless patients with chronic conditions are fully engaged with managing their modifiable lifestyle factors. Research supports the significance of patient participation as a key factor to address for improving treatment adherence and clinical outcome, for example in the treatment of depression.

Patient empowerment in self management is a key aspect of quality of care that is in its initial stages of being embraced by health care systems globally. A European project funded by Wonca Europe is currently underway to address patient participation as key part of implementing quality improvement in general practice/family medicine. QI activities, including safety initiatives are not just good for patients but can also make the work environment a safer place for doctors and other health professionals to care for patients through better systems of work and communication (for example techniques of disclosure of medical error), and better use of healthcare resources (safe prescribing and justification of invasive procedures). QI at practice level has been shown to improve job satisfaction of health professionals.

As health professionals, if we are not currently a patient, then we are all potential patients of the future. It is in everyone’s interest to address quality and safety of healthcare through building partnerships with patients and engaging them in implementation of quality initiatives.

Key messages for GP practice

- Research supports the significance of patient participation as a key factor to address for improving treatment adherence and clinical outcome, for example in the treatment of depression.
- Patient empowerment in self management is a key aspect of quality of care that is in its initial stages of being embraced by health care systems globally.

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Chapter 4

Quality of Care and the Health of Doctors

Andrée Rochfort

Learning objectives:

- understanding that the health of professionals influences the quality of their work in delivering healthcare to patients
- realizing that initiatives related to the doctors' health improvement belong to quality improvement activities

When a patient experiences an illness it can impact on their family, their relationships, their mood, their performance at work, their ability to work efficiently and to earn a living. Doctors who treat patients are aware of these interrelationships between work and health so when the patient is a doctor, it should come as no surprise that illness might impact in a similar way on the doctors' working lives and families.

Clinicians who experience illness may also find that their ability to carry out their work tasks is impaired. They are aware of the accepted norm in society that gives permission to people who are sick to sometimes be absent from their work duties as a result of incapacity due to illness. However, there is a cultural pressure for doctors to be present in work even when sick, and there is a high risk of 'presenteeism' in the medical profession, giving rise to the term "Hazardous Heroes" in a Norwegian study which shows lower rates of absence among doctors than would be expected. This showed that the majority of doctors had gone to work with an illness they would have considered sufficient to incapacitate and justify a sickness certificate in a patient!

Work issues and exposure to hazards at work can impact on the health of any worker. Work-life stress,

fatigue, burnout and practice dissatisfaction can all impact negatively on personal life and work satisfaction. In recent years we have seen that these occupational hazards can adversely affect staff inter-relationships and reduce the efficiency of performance of affected staff. This deleterious effect on performance efficiency can significantly compromise quality of patient care and increase the occurrence of adverse medical events while also increasing the chances of litigation for doctors.

A significant proportion of doctors experience practice dissatisfaction, professional isolation, and work-life stress and these factors have been found to be inversely correlated with QI activities. Physicians who perceive quality problems in their practices are more likely to experience dissatisfaction, isolation, and stress. In contrast, physicians from practices that were involved in the evaluation of QI activities had significantly less isolation, stress, and dissatisfaction.

Medical errors and patient safety are an important concern for both patients and physicians. Medical errors have received increased attention since 1999, when the Institute of Medicine reported that up to 100 000 US patients die each year because of preventable adverse events.

In a UK based study of over two hundred doctors including general practitioners / family physicians, one third of doctors reported recent incidents where they considered that their symptoms of stress had negatively affected their patient care. They reported the following negative issues as the symptoms of their personal stress: 40% expressions of irritability or anger, 57% tiredness, 28% pressure of overwork, 8% depression or anxiety, 5% effects of alcohol, 7% were serious mistakes and two incidents resulted in patient death.

Self-perception of medical errors and lapses in quality of care are experienced by doctors and can be associated with substantial subsequent personal distress. However, there are no 'reliable' predictors of mental health problems in doctors, so we must aim for early identification and early treatment. If doctors become ill they should seek advice and help from another doctor, just as patients do, rather than treat themselves. "Even as a doctor, you should have your own general practitioner".

For objective care, it is important for a doctor to attend another doctor for personal healthcare. The culture within the medical profession has accepted lapses in care of doctors that they would not regard as high quality care for patients in general – activities such as informal consultations on hospital corridors or during medical education meetings or social events, self diagnosis for serious conditions, or self investigation and self prescribing for serious or chronic conditions.

These self directed healthcare activities by doctors have been described as an occupational hazard for the medical profession.

Improving the quality of healthcare for doctors involves changing healthcare provider factors and also 'doctor as patient' factors, as well as addressing cultural and system factors. In Europe, over the past decade we have seen the development of a number of examples of structured systems of healthcare for doctors, from primary care systems of care, to specialist psychiatric services in secondary care, to tertiary care for psychological issues. Prevention of illness in doctors, and early identification involves provision of support and systems of early identification, and there are examples of these types of services within Europe also.

The challenge for the future is to support doctors in their delivery of safe efficient patient care through wider availability of formal high quality doctors' healthcare services, better use of existing health services by doctors as patients, and to include doctors' health as a topic in undergraduate and postgraduate medical curricula.

Key messages for GP practice

- The health of health professionals is a factor that can influence the quality of their work in delivering healthcare to patients.
- Illness in physicians may reduce their participation in QI initiatives.
- Earlier identification and intervention in doctors ill health is itself a QI activity.
- Quality improvement in healthcare for doctors can be justified.

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Chapter 5

Barriers to Implement Quality Improvement

Katarzyna Dubas, Violetta Kijowska

Learning objectives:

- ability to list the main barriers to QI in GP practice
- ability to describe some examples of overcoming specific barriers

The chapter provides an overview on the most commonly reported barriers to quality improvement (QI) implementation in general practice as well as the description of exemplary methods used to overcome some specific obstacles.

Quality is currently high on the agenda in European general practice and quality improvement initiatives are performed at different levels: individual general practitioner (GP) level, within the practice, as well as local, regional and national levels. A multiplicity of methods, tools and approaches to the QI processes in general practice results in diverse sets of barriers and obstacles which can be met.

The speed of introduction of quality improvement systems in specific countries depends on the state of development of profession of general practice within their health care systems. In that respect we can distinguish in Europe three groups of countries. First, with well developed general practice constituting integral part of the health systems (i.e. United Kingdom, Denmark, Ireland, the Netherlands, Sweden). A second group consists of countries where substantial progress has been made since 1990s (i.e. Austria, Belgium, France, Germany) whilst the third one is mainly composed of Central and Eastern Europe countries. Here limited quality improvement initiatives can be

hindered by the lower status of general practice within the health care system. Moreover, the health systems' structures within respective countries, their organizational and financial aspects as well as policy priorities can differ significantly. As a consequence, barriers to QI processes should be analyzed only in relation to specific conditions of a given national system of general practice.

Much research has been conducted with the intention of identifying and assessing barriers to QI initiatives in general practice. The authors applied different methodologies, included diverse number of GP and/or practices and focused on different aspects of QI. The outcomes of these studies provide numerous classifications and attempts to prioritize the obstacles to QI implementation in general practice. Whilst the perspective of assessment can differ significantly in specific cases, in majority of research we can clearly distinguish three levels at which barriers to QI may appear: individual GP level, the practice and system levels.

At the **individual GP level** – his/her attitude, beliefs, values, knowledge and skills determine the processes of implementation of quality programmes. Many studies have shown that one of the most important barriers to QI is GP's lack of motivation. In some cases GPs believe that the level of workload required is not worth doing and have strong reservations about the positive effects of the QI programmes. Little perceived benefit for care providers or patients seems a common obstacle. What is important – that even in countries with a long tradition and numerous successes in improving quality (e.g. United Kingdom), GPs can lack motivation to introduce continuous quality improvement initiatives or to proactively seek new opportunities in that field. The misunderstanding of the value of quality improvement and lack of knowledge of its practical benefits by individual GPs can contribute to all of these obstacles.

GPs negative attitude can also stem from the belief that quality measurement is a threat to professional autonomy or a tool to penalize bad performance. Researches show that GPs can be concerned about confidentiality of data and fear of abuse of the audit results by insurers or managers or regulators. Important barriers to QI initiatives at the individual GP level are lack of adequate knowledge and skills for QI. Knowledge of diverse quality improvement methods and practical instructions on how to use them is a prerequisite for successful implementation. It can be difficult for GPs to understand the terminology and concepts of quality measurement and quality indicators. Lack of GPs' skills required of some specific QI programmes is a common obstacle (it may concern technical skills, e.g. using IT reporting system, organizational ones or some behavioural features – like leadership skills or ability to work in a group).

Barriers to implementation of quality improvement activities that might be identified at the GP **practice level** stem from several areas with a diverse range and nature. Practice structure, organizational culture and available resources (including funding, staff time and skill, availability of information, educational materials, etc.) are crucial for supporting the adoption of new activities. As a result, reported barriers to implementation include: a perceived lack of time as well as financial and technical resources, limited staff, lack of team approach and quality culture within the practice organisation.

Concerns about a lack of time to undertake any new activity are often highlighted as the main obstacles in attempts to introduce a systematic approach to quality improvement in primary healthcare. In this context time constraints could have different dimensions, such as: lack of time for nonclinical tasks, perceived lack

of time to plan and conduct QI activity, or assumption that time spent on QI is not time spent with patients, and therefore results in initial declines in productivity. Researches show that improving quality may not necessarily require a large investment of time at any given point, but rather a willingness and ability to persevere over a long period of time, since the evidence of improved outcomes might not be observed until even 2 to 3 years after the end of QI programme. Thus, GPs may feel unmotivated to push quality-oriented approach into practice.

Quality efforts require people to do work, and requires funding to provide the resources. Practical application and maintenance of activities devoted to quality improvement is therefore a great challenge. Increased burden, lack of infrastructure and equipment, incompatibility of information technology (IT) systems as well as limited number of available staff have all been reported in several researches as significant challenges at the practice level. Insufficient financial resources are seen as the main obstacle in attempts to introduce a systematic approach to quality improvement. The budgets of some practices are so tight that the perceived time lag between implementing a quality programme and realising the benefits may stop them on the way to quality.

When cultural changes are needed important barriers are the results of lack of cohesion and sense of teamwork within the practice staff. QI is a team process that requires a collective approach, involvement of the whole practice team and close collaboration in building the quality culture. The existing hierarchies within primary care may interfere with the democratic teamwork necessary to bring about change and thus be an inhibitory factor for implementation of quality improvement initiatives. Obstacles that may impede QI process are: reluctance and resistance to change, lack of leadership from GPs, lack of management support and ability to cooperate with other professionals.

Barriers to quality improvement in general practice at the **system level** concern lack or inadequacy of support from the government and/or health authorities. Lack of an officially and nationally accepted quality framework or a government's task force for quality indicators can lead to diffusion of responsibility and actually lower the levels of interest in quality standards. One of the common barriers is lack of financial incentives in the system – they are mechanisms combining quality improvement systems' outcomes with a financial gratification.

On the other hand, inadequacy of the national standards for the specific practices can also be a serious obstacle (e.g. when the indicators are more appropriate for group than solo practices or when procedures are incompatible with the practices' systems). In addition, GPs' total reliance on externally imposed quality objectives and a focus on achievement of the highest outcome against official benchmarks can limit proactive approaches to internal, meaningful practice specific quality-related activities. Other studies show that one of the perceived obstacles at the system level is lack of a reliable information system, a database that would allow for benchmarking comparisons.

The overview of barriers to the QI implementation in general practice, categorised on 3 levels presents Table 5.1.

Tab. 5.1. Overview of the barriers to QI implementation in general practice

LEVEL	EXAMPLES OF BARRIERS
INDIVIDUAL GP LEVEL	<ul style="list-style-type: none"> - Lack of adequate knowledge and skills - Lack of motivation - Negative attitude - Apathy - Resistance to change - Sense of competence - Little perceived benefit - Perceived threats - Increased workload - Concerns about confidentiality of data - Fear of abuse of the audit results by insurers or manager - Short-term expectation of improved quality of care
PRACTICE LEVEL	<ul style="list-style-type: none"> - Lack of technical and financial resources - Lack of time - Extra burden on practice - Lack of team approach to change - Limited staff - Limited interprofessional collaboration and poor communication - Poor team communication with staff member - Resistance to change - Lack of information on QI - Inadequate budget sources - Lack of reward - Standards of practice - Hierarchical and doctor-dependent culture - Administrative constraints - Problems in practice management - Lack of quality policies in the work setting
SYSTEM LEVEL	<ul style="list-style-type: none"> - Lack of external QI frameworks / strategies - Inadequacy of the officially accepted and promoted QI frameworks - Lack of benchmarks database - Lack of quality policies in the region/country level - Lack of financial incentive

Successful implementation of quality improvement projects in general practice depends on the interaction of multiple factors. One of the first steps should be focused on identification of potential barriers and planning adequate precautionary actions. It is not possible to determine whether strategies tailored to overcome practice barriers are more effective than those focused on individual or system level related obstacles. There is no single solution, as the obstacles and methods to overcome them, strictly relate to the specific conditions of the individual GP, the practice and the system. Improvement of care is likely to be obtained if interventions are tailored to the potential barriers that might occur, rather than are oriented on overcoming all foreseen barriers. Of course, solving some random but obvious problems such as the need for extra time, money and staff plays an important role, but in the most effective – tailoring strategies, not all barriers, but only those perceived as most important and possible to overcome should be addressed.

At the individual GP level – education plays a pivotal role. GPs need training opportunities to acquire a deeper understanding of continuous quality improvement benefits, state of the art knowledge of its methods and to develop their organisational and leadership skills. To achieve QI goals, GPs should be also actively supported through a range of interventions on the practice level including staff education, development of quality standards, financial support or compensation for time spent on quality improvement programmes. The quality projects should reflect current knowledge, be evidence-based, cover important areas, and use reliable and complete data. Quality improvement in primary care settings should be a part of normal daily activity and be treated as an overall strategy focusing on the needs of patients involving all staff members through multidisciplinary teamwork and education.

It is important to emphasise that GPs' practices have the ability to succeed at quality measurement and improvement, if they are supported by technological, cultural and leadership changes that are dependent on efficient leadership, cohesiveness of the group, and a strong sense of teamwork among the staff. When significant obstacles arise while introducing QI programmes they are usually the result of specific professional and organizational cultural issues within a general practice. To overcome this, the adjustment of this culture from direct clinical care towards a systematic quality improvement culture should be a priority. The design of a quality framework (specifying the stakeholders, quality instruments, potential incentives and confidentiality) supported and implemented by professional organizations and health authorities is crucial.

Perhaps the greatest challenge facing general practice QI processes is to find the point of equilibrium between trust and control. In a system based on a trust, it is a GP's will and responsibility to measure performance and improve quality (e.g. popular in Europe is the European Practice Assessment tool – EPA). Currently however, many health care systems appear to have a greater focus on control, accountability and public reporting (e.g. within the UK's Quality and Outcomes Framework). Barriers to QI in both systems relate to the same problems, but are perceived from different perspectives. The challenge therefore is to combine the best of both approaches in a balanced model to produce the greatest benefit for patients.

Key messages for GP practice

- Multiplicity of methods, tools and approaches to the QI processes in general practice result in diverse sets of barriers and obstacles which can be managed.
- Three levels at which barriers to QI appear can be distinguished: individual GP level, the practice level and the system level.
- At the individual GP level – his/her attitude, beliefs, values, knowledge and skills determine the quality programmes implementation processes.
- Barriers at the practice level relate to the practice structure, organizational culture, and available resources (human, financial, infrastructure).
- Barriers to quality improvement in general practice at the system level concern lack or inadequacy of support from the government and/or health authorities.
- Improvements in care are likely to be achieved if interventions are tailored to the potential barriers that are likely to occur, rather than being oriented on overcoming all foreseen barriers.

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PART III

Appendixes

Complementary literature

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Glossary of terms

This glossary is based on definitions from peer reviewed journal, publications, organisations statements, and adapted for the context of QI in GP/FM.

Accreditation – can be defined as promoting change and professional development. Accreditation in primary care settings is generally seen as a way of assessing and benchmarking the performance of general practice care across a broad range of clinical and organisational domains. It describes a formal process of self-assessment and external and independent peer review to encourage best practice.

Adult learning – also described as self-directed learning. Adults learn more effectively when theoretical topics have immediate relevance to their job or personal life. Adult learning is problem-centered rather than content-oriented.

Adverse event – an adverse outcome that occurs during or after the use of a drug or other intervention but is not necessarily caused by it (in pharmacology any unexpected or dangerous reaction to a drug or vaccine).

Barrier/obstacle – refers to something that interferes with or prevents action or progress. It might be something, material or nonmaterial, that stands in the way of literal or figurative progress.

Benchmarking – method of measuring performance against established standards of best practice. Involves learning about key methods/processes that enable other agencies to consistently achieve good outcomes.

Circumstance – all the factors connected with or influencing an event, agent or person/s.

Clinical guidelines – a systematically developed statement for practitioners and participants about appropriate health care for specific clinical circumstances.

Competency – combination of the knowledge, attitudes and skills necessary for carrying out professional task.

Complaint – statement saying that somebody is not satisfied e.g. with the quality of a service.

Continuing medical education (CME) – any and all ways by which a graduated physician continues to learn and change in practice in a lifelong learning scheme.

Continuing professional development (CPD) – a process of planned and individually tailored learning in practice with a focus on the quality of care.

Delphi method – is a structured communication technique, originally developed as a systematic, interactive forecasting method which relies on a panel of experts. With Delphi, experts are asked to provide reasons for their forecasts, and to respond to the forecasts and justifications given by the other experts.

Disease – a physiological or psychological dysfunction, pathologic process with a characteristic set of signs and symptoms.

Electronic Health Record (EHR) – is a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting. Included in this information are patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports.

Error – unintentionally being wrong in conduct or judgment. Errors may occur by doing the wrong thing (commission) or by failing to do the right thing (omission).

EuroQoL – 5Dimensions (EQ-5D) is a standardized instrument for use as a measure of health outcome. The EQ-5D index measures 5 quality-of-life domains.

Event – something that happens to or with a person.

Experiential learning – is the process of making meaning from direct experience. Experiential learning is learning through reflection on doing, which is often contrasted with rote or didactic learning.

Facility – something that facilitates an action or process which promotes the ease of an initiative or course of conduct.

General Practice/Family Medicine (GP/FM) – a medical specialty concerned with the provision of continuing, comprehensive primary health care for the entire family.

Good Clinical Practice – an international set of guidelines that helps make sure that the results of a clinical trial are reliable and that the patients are protected. Good Clinical Practice covers the way a clinical trial is designed, conducted, performed, monitored, audited, recorded, analyzed, and reported. Also called GCP.

Harm – includes disease, injury, suffering, disability and death.

Hazard – a circumstance or agent that can lead to harm, damage or loss.

Health – a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.

Health care – services provided to individuals or communities to promote, maintain, monitor, or restore health. Health care is not limited to medical care and includes self-care.

Health care incident – an event or circumstance during health care which could have, or did, result in unintended or unnecessary harm to a person and/or a complaint, loss or damage.

Health care system – the complete network of agencies, facilities, and all providers of health care in a specified geographic area.

Health outcomes – a change in the health status of an individual, group or population which is attributable to a planned intervention or series of interventions, regardless of whether such an intervention was intended to change health status.

Improvement plan – a document specifying aims, activities, resources and other details necessary to improve quality of care in a practice.

Information and Communication Technologies (ICT) – is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data. The five broad categories of ICT can be distinguished: Electronic Medical Records; telemedicine services; health information networks; decision support tools for healthcare professionals; internet-based technologies and services.

Injury – damage to tissues caused by an agent or circumstance.

Leadership – the function of directing or controlling the actions or attitudes of an individual or group; the process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task.

Learning objectives – statements on what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning.

Near miss – an incident that did not cause harm.

Negligence (civil or criminal) – an incident causing harm, damage or loss as the result of doing something wrong or failing to provide a reasonable level of care in a circumstance in which one has a duty of care.

Outreach visit – contact in the providers' practice with the care provider trained individual who provides information, instruction and support and many times also feedback on current practice.

PACIC – a tool to measure the quality of care according to the chronic care model and patient motivation according to the “5A” principles (assess, advise, agree, assist, and arrange).

Patient care – the services rendered by members of the health profession and non-professionals under their supervision for the benefit of the patient.

Patient satisfaction – the degree to which the patients regards the health care service or product or the manner in which it is delivered by the health care provider as useful, effective, or beneficial.

Peer review – the concurrent or retrospective review by practicing physicians or other health professionals of the quality and efficiency of patient care practices or services ordered or performed by other physicians or other health professionals. It is used in the evaluation of grant applications and applied in evaluating the quality of health care provided to patients.

Plan-Do-Check-Act strategy – an iterative four-step management method used for the control and continuous improvement of processes.

Policy makers – individuals responsible for the development of policy and supervision of the execution of plans and functional operations.

Preventable – accepted by the community as potentially avoidable in the particular set of circumstances.

Problem-based learning (PBL) – instructional use of examples or cases to teach using problem-solving skills and critical thinking. It is an approach that challenges students to learn through engagement in a real problem. It is a format that simultaneously develops both problem solving strategies and disciplinary knowledge bases and skills by placing students in the active role of problem-solvers confronted with an ill-structured situation.

Professional competence – the capability to perform the duties of one's profession generally, or to perform a particular professional task, with skill of an acceptable quality.

Quality – the extent to which a service or product produces a desired outcome or outcomes.

Quality assurance – activities and programs intended to assure or improve the quality of care in either a defined medical setting or a program. The concept includes the assessment or evaluation of the quality of care; identification of problems or shortcomings in the delivery of care; designing activities to overcome these deficiencies; and follow-up monitoring to ensure effectiveness of corrective steps.

Quality cycle – a method used for continuous improvement of patients care; consist of setting goals, assessment and improvement of care.

Quality improvement (QI) – the attainment or process of attaining a new level of performance or quality. The combined and unceasing efforts of healthcare professionals, patients and their families, researchers, payers, planners and educators to make changes that will lead to better patient outcomes, better system performance and better professional development.

Quality indicator – measurable element of care that can be used for assessment.

Quality of health care – the degree to which health care services for individuals and populations increase the likelihood of desired outcomes and are consistent with current professional knowledge.

Quality indicators – norms, criteria, standards, and other direct qualitative and quantitative measures used in determining the quality of care.

Quality of life – a generic concept reflecting concern with the modification and enhancement of life attributes, e.g., physical, political, moral and social environment; the overall condition of a human life.

Risk – the chance of something happening that will have a negative impact. It is measured in terms of consequences and likelihood.

Risk behaviour – specific forms of behaviour which are proven to be associated with increased susceptibility to a specific disease or ill-health.

Root cause analysis – a systematic process whereby the factors which contributed to an incident are identified.

Safety – freedom from hazard.

Side effect – an effect, other than that intended, produced by an agent (see also ‘adverse reaction’).

Standards of care – quantified specification of criterion used in determining the quality.

System failure – a fault, breakdown or dysfunction within an organisation’s operational methods, processes or infrastructure.

System improvement – the result or outcome of the culture, processes and structures that are directed towards the prevention of system failure and the improvement in safety and quality. Being granted recognition for meeting designated standards for structure, process and outcome.

Systematic review – a review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review.

Tailoring – refers to a process of creating individualized intervention materials or strategies, or to the adaptation of interventions to best fit the relevant needs and characteristics of a specified target population.

Teamwork – work performed by a team towards a common goal; advocated by agreed activities and behaviour as a means of assuring quality and safety in the delivery of services.

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