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Simultaneous development of guidelines and quality indicators – how do guideline groups act?

A worldwide survey

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Abstract

Purpose – The purpose of this paper is to examine the question of how official bodies, health care organisations, and professional associations deal with the absence of a methodological gold standard for the simultaneous development of clinical practice guidelines and quality indicators, what procedures they use and what they feel are major strengths and limitations of their methods.

Design/methodology/approach – The authors conducted a web-based survey among 90 organisational members of the Guidelines International Network (G-I-N) representing 34 countries from Africa, America, Asia, Europe and Oceania. All organisational G-I-N members were invited to participate in the survey by following a link provided in the invitation e-mail.

Findings – The responses of 24 organisations were included in the final analysis. The results indicate a broad variability in the approaches and methods used to develop quality indicators and guidelines simultaneously. The answers of the participants indicated a lack of formal procedures for the simultaneous development. Formal procedures exist in only about half of the participating organisations. In addition, piloting or evaluation of the procedures is almost completely missing. Significantly, respondents mainly reported that the procedure used in their organisation "could certainly be more rigorous". Besides various strengths, participants reported a considerable number of limitations of the development processes they use.

Originality/value – This survey among G-I-N members – despite limitations – gives helpful insights in the state of the simultaneous development of quality indicators and clinical practice guidelines and underlines the need for future activities in methodological standard development and quality improvement of these processes.

Keywords Clinical guidelines, Clinical indicators, Quality measures, Quality programmes, Clinical governance

Paper type Research paper

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1. Background

Quality indicators are increasingly used in many health care settings to measure, compare, and increase quality of care (Donabedian, 1966; Brook *et al.*, 1996; Baker and Fraser, 1995; Mainz, 2004). Health care quality indicators are progressively more in the focus of researchers, politicians and other stakeholders. For example, the Organisation for Economic Co-operation and Development (OECD) initiated the OECD Health Care Quality Indicators Project for comparison of health at the national level[1]. Health care quality indicators are also used for the measurement of quality at the level of individual units of care (Campbell *et al.*, 2003). Quality indicators are explicitly defined and measurable items referring to the structures, processes, or outcomes of care or other aspects such as safety and access (McGlynn *et al.*, 1998; Campbell *et al.*, 2003). Quality indicators are no final judgements on the quality of care provided, but can make it transparent, comparable and improvable. They must comply with high quality standards and should be constructed in a careful and transparent manner by means of a systematic method (Campbell *et al.*, 2003). Several work groups have published studies on the state of the art of development methods for quality indicators (Brook *et al.*, 2000; Campbell *et al.*, 2002; Mainz, 2003a; Mainz, b; Hearnshaw *et al.*, 2001; Fitch *et al.*, 2001; Geraedts *et al.*, 2003), and substantial work has been done to investigate strengths and limitations of these methods (Campbell *et al.*, 2004; Marshall *et al.*, 2003; Reeves *et al.*, 2007; Hutchings and Raine, 2006).

Quality indicators can also be derived from clinical guidelines (Frijling *et al.*, 2001; Hutchinson *et al.*, 2000; National Institute for Clinical Excellence, 2002). Clinical guidelines are statements for practitioners and patients that are systematically developed to help them making decisions in specific clinical cases (Grimshaw and Russell, 1993). There is an enormous amount of clinical guidelines available from all over the world for many types of medical problems. In many countries, medical colleges and associations or other stakeholders develop guidelines tailored to their specific health care system with its contextual particularities even when guidelines for the same medical problem exist in some other health care setting in the world[2, 3]. Developing quality indicators is an expensive and time-consuming process. Therefore, it seems to be efficient with respect to time and financial resources to extract quality indicators from already established guidelines or to develop quality indicators during the authoring process of a guideline. As the interpretation of performance measured by quality indicators can have far-reaching consequences (e.g. public reporting or pay-for-performance models) they have to be as valid and reliable as possible and they should be widely accepted for the purpose they are intended to be used.

There are different methodological approaches and concepts for extraction and *de novo* synthesis of quality indicators from clinical guidelines (Hermens *et al.*, 2006; Eccles *et al.*, 1009; Ouwens *et al.*, 2007; Mourad *et al.*, 2007; Wollersheim *et al.*, 2007; German Agency for Quality in Medicine, 2009). In brief, these development strategies build on systematic methods combining evidence and expert opinion (e.g. consensus development conferences, Delphi technique, nominal group technique, RAND appropriateness method, iterated consensus rating procedure). This development process may be followed by a pilot or evaluation phase using healthcare data (Campbell *et al.*, 2003). Although evidence for healthcare measures is shared across the world there remains to be large variability in the definition of standards of care, of indicators for quality of care and of the content and implementation of clinical practice

guidelines developed for specific regions (Campbell *et al.*, 2008; McKee, 2005; Sturm *et al.*, 2007). Furthermore, indicators developed in one setting are not easily transferable to another setting due to differences in health systems and cultures (Marshall *et al.*, 2003). Despite these differences, it has been shown to be possible to define quality indicators that may be used across countries (Engels *et al.*, 2005; Engels *et al.*, 2006).

However, there is no existing international gold standard that is widely accepted by opinion leaders, quality of healthcare institutions and medical societies. Furthermore, it is unclear, how institutions and societies deal with the absence of methodological standards for the guideline based *de novo* synthesis of quality indicators, what procedures they use and how they evaluate major strengths and limitations of their methods. To examine these questions, we performed a web-based survey among institutional members of the Guidelines International Network (G-I-N).

2. Methods

2.1 Design of the study

We undertook a survey among members of the Guideline International Network (G-I-N). The Guidelines International Network (www.g-i-n.net) is a not-for-profit association of organisations involved in the systematic development of clinical practice guidelines or their application into practice and in quality improvement in health care from around the world (Ollenschläger *et al.*, 2004). G-I-N has 90 organisational members representing 34 countries from Africa, America, Asia, Europe and Oceania. All organisational G-I-N members were invited to participate in the survey by following a link provided in the invitation e-mail. Three reminder e-mails were sent to increase the participation rate. The survey was conducted from September 8 to November 27, 2009.

2.2 Survey questionnaire

The survey questionnaire included 21 items about institutional characteristics, purpose and target population of the guidelines/QIs developed, and processes used for the simultaneous development of guidelines and QIs (please see the Appendix). Survey questions were selected based on literature, examples and informal discussions with experts in the field. A preliminary version of the final questionnaire was circulated among authors taking up expertise of three institutions involved in quality indicator research in Germany and internationally. Question types were multiple choice, multiple response or open questions.

To ensure that all G-I-N members could reply to the questionnaire promptly, comfortably as well as independently of time, the survey was provided online via the internet. The Open Source tool "LimeSurvey" (www.limesurvey.org) was used. "LimeSurvey" is based on PHP and uses a MySQL database, is installed easily and runs on a regular web server. Survey responses were exported to MS Excel.

2.3 Participants

A total of 55 entries were exported from the internet survey platform. A total of four institutions notified us by e-mail that they were not developing quality indicators simultaneously and did not fill in the survey. Of those, four institutions entered twice or three times, leaving 49 entries of participating institutions (54 per cent of G-I-N institutional members, 59 per cent including e-mail notifications). According to the

survey responses, ten organisations were not involved in clinical practice guideline development. Of the remaining 39 organisations 15 reported that they were currently not simultaneously developing quality indicators when developing guidelines. Therefore the survey answers of 24 organisations were included in the final analysis.

2.4 Analysis

Answers of survey participants were included in the analysis if their organisation was involved in clinical practice guideline development and if their organisation simultaneously developed quality indicators and clinical practice guidelines. If there were multiple entries of the same organisation, the most complete entry or, if the multiple entries were complete, the first entry was included. Analyses of multiple choice and multiple response questions were done using simple counting and frequency analysis. Data management was done using Microsoft Office Excel 2003 and Stata version 9.2 (Stata Corp., College Station, Texas, USA).

3. Results

3.1 Characteristics of participating institutions

Of the 24 organisations included in the analysis, most were either public institutions ($n = 8$, 33 per cent) or scientific medical societies ($n = 7$, 29 per cent). However, private organisations ($n = 4$, 17 per cent), professional associations ($n == 3$, 13 per cent) or foundations ($n = 2$, 8 per cent) were also represented. The participating organisations were rather experienced in developing clinical practice guidelines as most reported to be concerned with guideline development for six to ten years ($n = 9$, 38 per cent) or even more than ten years ($n = 10$, 42 per cent). However, the number of guidelines published per year differs considerably between less than three and more than ten per year.

3.2 Target groups and indented application of guidelines

The majority of guidelines published by the participating G-I-N members target medical doctors ($n = 20$, 83 per cent) and nurses ($n = 14$, 58 per cent), and quite a few ($n = 10$) are created for patient groups ($n = 10$, 42 per cent) and policy makers ($n = 7$, 29 per cent). Health insurance or reimbursement bodies, other health professionals, laymen or federal bodies are of minor importance. The main settings of application for those guidelines are the conventional stages of medical care such as the hospital setting ($n = 18$, 75 per cent), the ambulatory setting ($n = 15$, 63 per cent) or the long-term care setting ($n = 10$, 42 per cent) (Table I).

3.3 Process and purpose of the simultaneous QI development

Table II depicts the characteristics of the simultaneous development process of quality indicators and clinical practice guidelines reported by the participating G-I-N member organisations. As compared with the total number of guidelines issued per year the number of published guidelines including simultaneously developed quality indicators is comparably low. The majority of organisations publish less than three to five ($n = 6$, 25 per cent) or less than three ($n = 11$, 46 per cent) guidelines per year. The main purpose of the simultaneously developed quality indicators in almost all organisations is to give a quality feedback to health care professionals ($n = 23$, 96 per cent). Several organisations intend a quality feedback for policy makers ($n = 8$, 33 per cent), or acute ($n = 8$, 33 per cent) or long-term care institutions ($n = 7$, 29 per cent).

Characteristic	*n*	%
Kind of organisation		
Public institution	8	33
Scientific society	7	29
Private organisation	4	17
Professional body	3	13
Foundation	2	8
Years developing guidelines		
Less than 3 years	1	4
3-5 years	4	17
6-10 years	9	38
More than 10 years	10	42
Guidelines published per year		
Less than 3 per year	7	29
3-5 per year	7	29
6-10 per year	3	13
More than 10 per year	7	29
Main target audience of guidelines [a]		
Medical doctors	20	83
Nurses	14	58
Patient groups	10	42
Policy makers	7	29
Health insurance bodies/reimbursement bodies	2	8
Allied health professionals	1	4
Laymen	1	4
Federal bodies	0	0
Main setting of application of guidelines [a]		
Hospital setting	18	75
Ambulatory setting	15	63
Long-term care	10	42
Public health setting	7	29
Policy level	2	8

Note: [a]Multiple responses possible

Table I.
Characteristics of participating institutions involved in the simultaneous development of quality indicators and clinical practice guidelines

Federal bodies ($n = 1$, 4 per cent), pay for performance ($n = 1$, 4 per cent), or guideline developers and implementation teams ($n = 1$, 4 per cent) are not in the broad focus.

In most cases, it is either the guideline coordinator ($n = 7$, 29 per cent) or the guideline group ($n = 6$, 25 per cent) who decide that quality indicators should be simultaneously developed. For one organisation there is a policy that all guidelines issued include quality indicators.

Interestingly, only about half of the responding organisations have a formal procedure for the simultaneous development of quality indicators in place ($n = 11$, 46 per cent). Additionally, 14 organisations (58 per cent) did not pilot their development process of simultaneously developed quality indicators. Only six institutions (25 per cent) said that they piloted their processes or are about to pilot it. In particular, piloting was done by data analysis in no more than two institutions (8 per cent).

Characteristic	*n*	%
Guidelines including simultaneously developed QI published per year		
Less than 3 per year	11	46
3-5 per year	6	25
6-10 per year	1	4
More than 10 per year	6	25
Main purpose of simultaneously developed QIs [a]		
Quality feedback for health care professionals	23	96
Quality feedback for policy makers	8	33
Quality feedback for acute health care institutions	8	33
Quality feedback for long -term care institution	7	29
Quality feedback for federal bodies	1	4
Pay-for-performance	1	4
Quality feedback for developers and implementation teams	1	4
Not specified	0	0
Decision about need of simultaneous development of QIs done by		
Guideline coordinator	7	29
Guideline group	6	25
Expert committee	1	4
Standing editorial staff	1	4
Policy that all guidelines have indicators	1	4
No answer	8	33
Formal procedure for simultaneous development of QIs existing		
Yes	11	46
No	10	42
No answer	3	13
Piloting of simultaneous QI development process done		
Yes, by interviews	3	13
Yes, by data analysis	2	8
Pilot phase planned	1	4
No	14	58
No answer	4	17
Simultaneous development of QIs done for		
All recommendations	3	13
Key recommendations	13	54
Selected recommendations (e.g. cost of care, treatment outcome, length of stay, readmission rates)	4	17
No answer	4	17
Participants in simultaneous QI development process [a]		
Original guideline authors	18	75
Staff of organisation	8	33
Original information managers/specialist	6	25
New group of experts	5	21
Patients	5	21
Original external reviewers	4	17
Others	2	8

(*continued*)

Table II.
Characteristics of simultaneous development of quality indicators and clinical practice guidelines

Characteristic	*n*	%
Check for other guidelines/QIs about same topic of interest		
Yes, nationally	4	17
Yes, internationally	13	54
No	2	8
No answer	5	21
If yes: assessment of methodology used for retrieved guidelines/ QIs		
Yes, for both	4	24
Yes, for evidence synthesis	5	29
Yes, for QI development method	3	18
No, only used to check if relevant references are missed	2	12
No, never	3	18
Rating of rigour of the simultaneous QI development process		
Very rigorous	3	13
Moderately rigorous	4	17
Could certainly be more rigorous	12	50
Not very reliable	0	0
Unreliable	0	0
No answer	5	21

Table II.

Note: [a]Multiple responses possible

Most guidelines of participating G-I-N member institutions create quality indicators for the key recommendations ($n = 13$, 54 per cent) or for selected recommendations such as cost of care, treatment outcome, length of stay, or readmission rates ($n = 4$, 17 per cent). The participants in the simultaneous quality indicator development process seem to differ considerably between organisations. The original guideline authors ($n = 18$, 75 per cent) participate in most organisations. However, all organisations include diverse other groups such as the staff of the organisation ($n = 8$, 33 per cent), the original information managers ($n = 6$, 25 per cent), new group of experts ($n = 5$, 21 per cent), patients ($n = 5$, 21 per cent) or the original external reviewers ($n = 4$, 17 per cent). When developing guidelines and quality indicators simultaneously, organisations predominantly cheque for other guidelines or quality indicators previously developed by other organisations or in other healthcare settings about the same topic of interest ($n = 17$, 71 per cent). Those who do, however, do very different types of methodological assessments of the guidelines or quality indicators retrieved, as some assess the evidence synthesis ($n = 5$, 29 per cent), some review the quality indicator development method ($n = 3$, 18 per cent), some evaluate both ($n = 4$, 24 per cent), some use other previously published guidelines/ quality indicators only to cheque if relevant references are missed ($n = 2$, 12 per cent) and others never cheque the methodology of retrieved other previously published guidelines/ quality indicators ($n = 3$, 18 per cent).

3.4 Reported strengths and limitations of the development process

We asked participants to make an overall rating of the rigour of the simultaneous quality indicator development process applied in their organisation. None of the participants thought that their processes were not very reliable or unreliable. However,

most respondents felt that they "could certainly be more rigourous" ($n = 12$, 50 per cent). Still, a few institutions seem to have very rigourous ($n = 3$, 13 per cent) or moderately rigourous ($n = 4$, 17 per cent) procedures. Two of the three institutions rated to have a very rigourous development process provided a link for further information on their procedures (French National Authority for Health (HAS)[4], Dutch Institute for Healthcare Improvement CBO[5]), one of these entries was done anonymously.

When asking for major strengths of the procedures their institutions use for the simultaneous development, participants numerated different issues:

(1) Methodological strengths:
- use of the AIRE instrument;
- the decision support rules by EBMeDS both remind professionals of evidence-based actions and record statistics of quality indicators;
- development process driven by the authors of the guidelines;
- indicators come from the guideline development group;
- the quality indicators are developed by people who are directly involved in the management of the disease and know the clinical problem in practice; and
- guidelines include a preliminary list of quality indicators.

(2) Content issues:
- focused on key recommendations; and
- concentration on practical priorities and patient preferences.

(3) Assessment and feedback:
- assessment of impact on the results;
- front-line clinicians need to measure what makes sense rather than measuring what is easy to measure; and
- links the guideline to an audit process to promote implementation through an audit and re-audit after feedback/improvement.

(4) Awareness of target audience:
- end-users are made aware of quality indicators published by organisation; and
- people realise that guideline recommendations without monitoring system using indicators are hard to implement and evaluate.

(5) Implementation:
- time gain – published guideline is ready for implementation and monitoring;
- potential for better adherence to implementation and monitoring; and
- good preparation for further implementation of the guideline.

Several participants mentioned methodological strengths such as the use of specific instruments, the preliminary character of the developed indicators or the fact that quality indicators were developed by the guideline authors or by clinical experts. Content issues, e.g. focus on key recommendations or on practical priorities and patient

preferences were also raised. Another argument was the existence of explicit quality measurement and its potential for further improvement of both guidelines and indicators. Additionally, by publishing quality indicators simultaneously to guidelines, awareness of the target audience for quality assessment and implementation of guidelines as a measure of quality improvement may be increased. Finally, participants noted that simultaneously developed quality indicators facilitate implementation and monitoring of the guideline.

There were also a number of major limitations specified by the respondents of the survey:

(1) Methodological limitations:
   - consensus of development members group;
   - only guidelines development group members involved; other stakeholders' opinions should be taken into consideration;
   - may not be evidence-based; and
   - the procedure is not very rigorous, and somewhat arbitrary.

(2) Lack of experience and expertise:
   - the expert panel might not have expertise on the methodology needed; they rather act as clinical decision makers;
   - development very rarely done in the organisation, so a real evaluation is missing;
   - less experience with simultaneous development as compared to indicator development after finalisation of the guidelines; and
   - lack of formal development methods.

(3) Lack of evaluation:
   - no practice test; and
   - no validation system.

(4) General limitation of simultaneous development:
   - it should not be simultaneous; first you have to know the evidence and then the effectiveness.

(5) Divergent interests:
   - difficult to serve our global constituency.

(6) Lack of time and personnel resources:
   - lack of dedicated staff;
   - increased workload;
   - insufficient opportunity to give time to some of the more complex issues that would benefit from quality indicator measurement development;
   - it demands time;
   - long duration of the process;
   - process is time-consuming; and
   - time constraints.

At first, methodological weaknesses were mentioned. One issue was that the processes seem to base more on consensus as opposed to evidence. Also, there was an argument that additional stakeholders should be involved in the development. Second, several respondents detected a lack of expertise due to deficient experience with the simultaneous development process or due to insufficiently qualified developers. Then, participants criticised the absence of practice tests or validation systems. One respondent felt that the simultaneous development should be generally avoided, as the collection of efficacy and effectiveness should be kept apart. Another issue raised was that the quality indicators might not satisfy all interest groups adjunctive to the developing organisation. Finally, various responses referred to the lack of time and personnel resources for the time-consuming development process.

4. Discussion

To our knowledge, this is the first study investigating the state of the simultaneous development of guidelines and quality indicators that are aimed to measure, compare and increase quality of health care at the level of individual units of care. Our results indicate a broad variability in the approaches and methods used to simultaneously develop quality indicators and guidelines among G-I-N members. Additionally, there seems to be a lack of formal procedures for the simultaneous development. Only about half of the respondents stated to use formal procedures. In addition, only about half of respondents in this survey report to have a pilot system in place or are about to implement one. Significantly, respondents mainly reported that the procedure used in their organisation "could certainly be more rigourous". Besides various strengths, participants also reported a considerable number of limitations of the development process they use.

There are various national or regional initiatives to standardise the simultaneous development process. In particular, specific instruments such as the Dutch AIRE tool (Appraisal of Indicators through Research and Evaluation) (De Koning, 2007) or the German instrument QUALIFY[6] have been developed for the structured assessment of quality indicators. Furthermore, the RAND/UCLA Appropriateness Method has been used for the simultaneous development of guidelines and quality indicators. The German Agency for Quality in Medicine issued a manual for authors of National Disease Management Guidelines containing a structured approach for the development of quality indicators for key guideline recommendations selected using QUALIFY criteria (German Agency for Quality in Medicine, 2009). However, these initiatives have until now been limited to specific regions or healthcare settings, and up to now, international standards that are widely accepted and supported by the world-leading institutions are lacking.

Such standards are needed for several reasons. First, the development of quality indicators that were built based on explicit, standardised and publicly available criteria would be transparent and comprehensible. This may increase both acceptance and reproducibility of quality indicators developed simultaneously with guidelines. Additionally, transferring quality indicators between different countries or expert groups would be much easier because development criteria would be clear, and healthcare settings factors may be easier to identify. For example, when focusing on a specific risk factor, a quality indicator might be of high importance in a healthcare setting, but can be neglected in another due to its low prevalence. This reason for

selection would be transparent and transferable when relevance for the health care system would be defined as a standard selection criterion. Standards, the criteria for selection or non-selection of quality indicators, may enhance the quality of the indicators and stimulate international exchange.

There are several limitations that need to be considered when interpreting this research. First, our survey was done only among G-I-N organisational members. However, G-I-N involves a huge number of the leading institutions in the field. Even if we did not include all institutions that may be active in the simultaneous development of quality indicators and guidelines, we estimate that the results are fairly representative for what is going on in the field. Second, 41 per cent of G-I-N organisational members neither responded by e-mail nor answered in the survey questions. Nevertheless, an overall response rate of 59 per cent in this context is comparably high[7]. Finally, the study design and the available resources did not allow us to ask for a detailed description of the methods used for the simultaneous development of QIs and guidelines in each organisation. This inhibits an in-depth comparison of the methods applied, which should be done in future methodological studies.

Nevertheless, several conclusions can be drawn from this survey. Given the fact that the target audience – the setting of application and the main purpose of guidelines, including indicators – is very similar across the developing organisations, there is considerable variability in the methodology and in the participants for the development process. In the absence of formal procedures – and foremost of a gold standard – for the simultaneous development of quality indicators and guidelines it seems obvious that the methodology used should be made transparent. Previous reviews also concluded that investment must be made in studies to further improve the development of clinical indicators and to maximise their applicability (Brook *et al.*, 2000; Wollersheim *et al.*, 2007; Engels *et al.*, 2005). For the sake of the quality of quality measurement common standards and quality criteria for the simultaneous development process are needed.

Starting from the strengths and limitations participants in this survey mentioned with respect to their processes, conclusions may be taken up for building standards for the simultaneous development of guidelines and quality indicators. For example, strengths mentioned were that specific development instruments such as the AIRE instrument are used and that processes should be based on evidence as opposed to consensus. A broad variety of stakeholders should be involved in the process to increase acceptance and applicability of the resulting quality indicators; and experts familiar with quality indicator development should participate to assure the methodological rigour of the development process. Additionally, it may be beneficial to focus on quality indicators for key recommendations or addressing practical priorities and patient preferences. Finally, practice tests or validation systems were felt to be indispensable to evaluate the effects of a (preferably preliminary) set of quality indicators developed simultaneously to a clinical practice guideline.

For further steps to elaborate standards for the simultaneous development of quality indicators and clinical practice guidelines we propose to build an international working group of experts in the field familiar with different healthcare settings. This working group, which may be hosted by G-I-N, would be aimed at synthesising, assessing and appraising the methods currently used for the simultaneous

development of indicators and guideline, and would come up with methodological standards that would be transferred to the various healthcare settings in which quality indicators and guidelines are simultaneously developed.

In conclusion, this survey among G-I-N members – despite limitations – gives helpful insights in the state of the simultaneous development of quality indicators and clinical practice guidelines, and underlines the need for future activities in methodological standard development and quality improvement of these processes.

Notes

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Appendix. Survey among G-I-N member institutions

Organisation characteristics

1. What is the name of your organisation?[1]

_____

2. Which kind of organisation is your institution?
O Public institution
O Private organism
O Scientific society
O Other(Please specify) _____

3. How many years have you been developing guidelines?
O Less than 3 years
O 3-5 years
O 6-10 years
O More than 10 years

4. How many guidelines do you publish per year?
O Less than 3 per year
O 3-5 per year
O 6-10 per year
O More than 10 per year

5. What is your main target audience of the guidelines produced in your organisation?
O Medical doctors
O Nurses
O Patient groups
O Health insurance bodies/Reimbursement bodies
O Policy makers
O Federal bodies
O Other (Please specify) _____

6. What is the main setting of application of the guidelines produced in your organisation?
O Ambulatory setting
O Hospital setting
O Public Health setting
O Long term care
O Policy level
O Other (Please specify) _____

Quality indicator development in guidelines

7. Does your organisation incorporate quality indicator development in the development phase of the guideline?[2]
O Yes
O No

8. For how many guidelines per year do you incorporate quality indicator development?
O Less than 3 per year
O 3-5 per year
O 6-10 per year
O More than 10 per year

If you know the actual percentage of all guidelines produced in your organisation, please specify

_____

Figure A1.

(*continued*)

9. What is the main purpose of the quality indicators simultaneously developed and incorporated in guidelines?

O Quality feedback for health care professionals
O Quality feedback for federal bodies
O Quality feedback for acute health care institutions
O Quality feedback for long term care institution
O Quality feedback for policy makers
O Pay-for-performance
O Other (Please specify) _____
O Main purpose not specified

10. Does your organisation have a formal procedure for the simultaneous development of quality indicators during guideline development?

O Yes
O No

If yes please specify if it is published somewhere and if available on-line provide the link.

_____

11. Who decides that quality indicators should be incorporated in the guideline?

O Guideline coordinator
O Guideline group
O Expert committee
O Standing Editorial staff
O Other (Please specify)

If guideline group please specify if the original group or just a few. If other please specify.

_____

12. Do you develop quality indicators for selected recommendations of the guideline?

O All recommendations
O Key recommendations
O Selected recommendations (please specify criteria)

_____

13. Who participates in the quality indicator development process?

O Original guideline authors
O Original information managers/specialist
O Original external reviewers
O New group of experts
O Patients
O Staff of organisation
O Others (Please specify) _____

14. Has the quality indicator development process (simultaneously to guideline development) used in your organisation been piloted?

O Yes, by interviews
O Yes, by data analysis
O No

15. How rigorous do you think is the quality indicator development process that you use?

O Very rigorous
O Moderately rigorous
O Could certainly be more rigorous
O Not very reliable
O Unreliable

16. Do you check for other guidelines/quality indicators about the same topic of interest when developing your quality indicators?

O Yes, nationally
O Yes, internationally
O No
O If yes, please specify how you use them _____

(*continued*)

Figure A1.

17. In case you do, do you use specified methods to assess the methodology used for evidence synthesis and quality indicator development of these guidelines/quality indicators?

O Yes
O No, we only use them to check if we miss relevant references
O No, never
O Others (Please specify) _____

18. What do you think are the major strengths of the procedure you use for the simultaneous development of quality indicators?
Please specify

19. What do you think are the major limitations of the procedure you use for the simultaneous development of quality indicators?
Please specify

20. Please comment on any aspects you find relevant and you want to mention regarding the simultaneous development of quality indicators in the development phase of guidelines that might be of use for our survey. Thank you for your help![1]
Please specify

21. Please indicate key institutions in your country involved in quality indicator development.[1]
Please specify

1 responses not shown due to very low response rate for these questions
2 inclusion criterion for data analysis

Figure A1.

About the authors

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Günter Ollenschläger is a trained pharmacist and general internist. His professional interests are in the fields of evidence based healthcare and adult education. He has been Head of the German Agency for Quality in Medicine, Berlin since its foundation in 1995. In this capacity he has been leading the development and establishment of several nationwide healthcare quality programmes in Germany: National Clearinghouses for Guidelines and Patient Information, Programme for Disease Management Guidelines (2002), and German Medical eLibrary (2009). He serves as Founding and Board Member of the German Network for Evidence-based Medicine (DNEbM), and – in the capacity of Founding Chairman – for the Guidelines International Network (G-I-N) since the foundation of the organisations.

Martin Scherer qualified as a general practitioner. He has worked part-time in general practice and was a Researcher in the Department of General Practice at the University of Göttingen. He is primarily involved in health services research with a focus on the interaction of social factors, organisational structures and processes, and personal behaviours. He studied how these interactions affected both the quality of health care and the mental well-being of consecutive medical inpatients (postdoctoral lecture qualification ("Habilitation")). M. Scherer is Head of the Guideline Development Committee of the German College of General Practitioners and Family Physicians (DEGAM). In February 2009 he accepted a professorship for health services research and its methods at the Institute for Social Medicine in Lübeck.