On the trail of quality and safety in health care

Initiatives to improve patient care have had only limited success. **Richard Grol**, **Donald Berwick**, and **Michel Wensing** call for steps to encourage a new generation of researchers to investigate how to speed up progress

Despite many years of effort and numerous programmes to improve the quality and safety of health care, major problems persist.¹⁻⁷ Various reasons for the slow pace of improvement have been identified, such as resistance to change among health professionals, organisational structures that block improvement of care, and dysfunctional financial incentives.⁷⁻¹¹ Many different approaches have been tried to speed up improvement, such as medical audit, evidence based guidelines, accreditation, disease management, public reporting of performance indicators, financial incentives, revalidation of professionals, and breakthrough collaboratives. Research on the effect of these approaches is scarce, but the evidence shows that even well developed improvement programmes are often only partially effective.⁸⁻¹⁰ Despite substantial scientific development of this field, research on quality and safety in health care is not yet fully developed.¹¹ We examine the reasons for the poverty of research in this field, and present the key challenges.

Research agenda

To help choose the best approach for improving care we need well designed studies on quality and safety

Research agenda for science of quality and safety in health care^{6,7}: examples of topics

Questions related to validation of indicators and using routine data to monitor performance
 Questions related to factors influencing differences in performance
 How to address needs of (specific groups of) patients and their role in improving quality
 How to achieve sustained change in normal care
 How to guide clinicians towards scientifically correct and safe practice
 How to provide new evidence to professionals at the point of care
 How to overcome resistance in professionals and increase their pride, motivation, and satisfaction in their work
 How to support (effectively collaborating) professionals and teams
 How to create a culture of change and continuous improvement in the ward or practice
 How to bring engineering science into health care to improve care processes
 How to use the increasing data on performance of health providers
 How to use financial incentives and economic principles to improve quality
 How to prepare and motivate young health professionals for their new roles and responsibilities in a changing healthcare system

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of care using a variety of research methods. Decision makers at all levels of health care need information from such research. Programmes aimed at monitoring and improving health care are often expensive, and it is important to know if they will yield value for money.^{12,13} Several authors have outlined the research agenda for such research and have described the methods to be used.^{6,7,14-18} The research should focus on understanding why the provision and outcomes of care vary as well as on interventions to change provision.

Although the research has to be applied to the most relevant health problems and societal needs—such as the management of chronic diseases in our ageing populations—the challenge remains to develop a more fundamental science of quality and safety. Crucial for this science is to develop and test hypotheses about why health professionals, patients, and health organisations do what they do and how to improve their performance. The box gives examples of questions that should be included in the research agenda.

Building capacity

The research agenda requires a variety of quantitative and qualitative research methods and designs,^{14,19} appropriate funding, and well trained researchers. It will need to draw on the expertise of different disciplines, including medicine, nursing, epidemiology, sociology, psychology, education, management, economics, ethics, and engineering sciences.

We need talented researchers from various disciplines who know how to work at the interface of research, practice, and policy making.²⁰ However, many young researchers prefer a career in other sciences because getting started is an uphill battle. In most countries, when funding proposals for health services research have to compete with those in biomedical science, the former often lose out, largely because the review panels are usually composed of a majority of biomedical scientists who give health services research lower priority. For example, success rates for health sciences and health services researchers in getting funding for open, personal research programmes from the Dutch research council have fallen in recent years from 16% to 8%. When separate funding opportunities exist, such as the service delivery and organisation programme in the United Kingdom, the available budgets may be comparable to funds for basic and clinical research.

Scientific recognition is strongly related to publications with high citation scores. Although an increasing number of good clinical journals publish research on quality of care, *Nature* and *Science* are yet to publish a

quality improvement study.

Another problem is that many scientists and policy makers think that improving health care or implementing new evidence in practice just “needs to be done.”¹³ Health professionals recognise the important questions related to quality in health care, but not all see the need for scientific research on these issues, since this usually cannot help with the immediate decision at hand. Many policy makers and managers also have difficulty in seeing the relevance of research on quality improvement or are concerned about the timeliness of the research, the results of which may not be available at the time of decision making.¹³

Increasing status

To improve the quality and safety of patient care we need a better understanding of the crucial determinants and effective and efficient methods for implementing change in practice. This demands that quality and safety are placed high on the health research agenda and that talented researchers are attracted to this field. To achieve such a situation some conditions need to be met—for instance:

Raising the visibility and status of research—A higher profile for research into the quality and safety of health care within the research community and society can be encouraged both by good scientific output, such as through publications in top journals and doctoral theses, and by presenting well executed research to the lay press. One positive trend is that the number of quality and safety related papers in prestigious journals such as *New England Journal of Medicine*, *JAMA*, *Lancet*, or *BMJ* has increased substantially in recent years, providing the research with credibility in the eyes of professionals and policy makers.

Getting major grant organisations to fund research—Quality and safety in health care and implementation of change are often not included in the research agenda. However, in the past decade specific programmes on knowledge transfer and quality improvement have been established in the United States (the Agency for Health Care Research and Quality and Veterans Health Administration’s quality enhancement and research initiative), the United Kingdom (service delivery and organisation programme and Translational Medicine Board), Canada (Canadian Health Services Research Foundation, Canadian Institute for Health Research), and the Netherlands (ZONMW, the Netherlands organisation for health research and development).

Make quality research a routine part of new clinical research—Policy makers in research should reliably set

aside a budget for research on quality and safety of care and implementation of change whenever they examine a new, relevant, clinical care topic. Payers and insurers may be convinced to develop specific funds to support such research. A study of 33 health research funders in nine countries showed that only one third funded research on knowledge translation.²¹

Healthcare research advisory boards define research agenda on quality of health care—The agenda should include proposals for building research capacity and give new health services research groups some protection from the open competition.

Setting up research groups and departments in universities or medical schools—Groups that focus on research on the quality of health care are needed, as well as specific academic chairs and positions within quality in health care.

Establishing specific graduate and postgraduate training programmes—These should include fellowships and career tracks for talented researchers. Such programmes should emphasise and facilitate learning from other disciplines. Role models of successful researchers are needed to attract and guide young researchers, particularly at the intermediate level (senior researchers and assistant and associate professors). In one of the largest research centres in Europe that specifically focuses on quality improvement research, the Centre for Quality of Care Research (WOK) in the Netherlands, about 50 PhD theses have been completed in the last decade and another 40 will be completed in the next five years.

Creating partnerships among policy makers, managers, clinicians, and researchers—Such “real world” networks focused on research into the quality and safety of health care are among the most effective ways to speed research into practice.¹² Numerous organisations around the world are involved in improving quality and

SUMMARY POINTS

Our understanding of crucial determinants of suboptimal patient care and approaches to improve care is limited. Talented researchers are needed to develop this field, which is still in its infancy.

The status and attractiveness of research on quality and safety of care is low.

Focused measures are needed to build multidisciplinary research programmes to guide change.

safety; they may profit from more intensive collaboration with research groups focusing on this topic.

Creating partnerships with patient groups and organisations—These groups usually support research and development on quality improvement.

International collaboration—Exchange of PhD students, creating research networks (for example, with European Union funding), and other forms of international exchange can help to build critical mass as these new branches of health services research take root.

Conclusions

The prestige of research on quality and safety of health care among scientists is still relatively low. The field is not yet fully developed and needs active policy making if we are to build the strong, multidisciplinary research programmes that will effectively help to guide change in health care in the 21st century.

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Knowing too much

"There's something wrong with her eye, it doesn't seem to abduct past the midline. I think she has a sixth nerve palsy."

Twenty four hours after undergoing an emergency caesarean section, I was not in the mood for my husband (a neurology registrar) to be overdiagnosing my newborn baby. "There's nothing wrong with her eye," I replied, "she passed her baby check with flying colours."

Of course, what followed was a plethora of specialists, none of whom wished to contradict my husband's diagnosis. My non-medical family

were bemused. They could see nothing wrong, and, irrationally, I was angry with my husband for spotting it. I could sense his anxiety, but he would not share his differential diagnoses. A normal transcranial ultrasound scan did little to alleviate his worries. Eventually, when a diagnosis of Duane's syndrome was reached and we were told it was more of a nuisance than a problem, the cloud lifted.

When I discussed the trauma of the episode with a friend, she commented that it was extremely stressful being married to a doctor because they knew too much. I remembered my initial annoyance at what I considered to be my husband's overdiagnosing of my perfect baby. I reflected on the fact that the paediatrician had also admitted to performing sneaky checks on her own newborn children, and that my brother in law had been convinced that his second child was deaf for at least the first 24 hours of his life. I realised that my experience was far from unique.

I replied that the important thing to remember is that it's not their fault; knowledge, once learnt, cannot be ignored or wilfully forgotten. As the scorpion said to the frog, "I cannot help myself for it is my nature."

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