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# Standardizing Quality of Care

How and why standardization can help healthcare providers build structure, improve quality, and gain efficiency

## Introduction

Standards are vital in many industries – from power and manufacturing to banking and mobile communications. They improve efficiency, particularly in complex industries with complex processes.

This is also true for healthcare. Under »evidence-based medicine,« standardized clinical pathways are increasingly influencing the debate about sustainably affordable and efficient healthcare. Proven, standardized procedures can make the quality of care more measurable and reproducible for providers, patients, and payers.

Standardization is typically driven by payers or the hospital management. Increasing clinical quality by improving the standard of care is, in fact, one of the main concerns of (U.S.) hospital managers<sup>1</sup>. Meanwhile, for doctors and patients, standards in combination with increasing economic pressure, also give rise to misgivings. Many doctors fear that standardization will restrict them in their individual treatment decisions. And patients are worried that they will only get the cheapest possible standard treatment instead of possibly more expensive but more individualized and better therapy.

These concerns are understandable and should be actively addressed by providers. Standardization is a multi-layered issue, aimed at achieving a reliable, consistent level of quality and reducing costs. And that is in everyone's interests.



Appropriate, proven standards can help manage the increasing complexity of diagnostic and treatment options and increase their efficiency and effectiveness. Poor treatment outcomes, costly mistakes, or even lawsuits can be avoided. Furthermore, standards facilitate and accelerate communication and the transfer of knowledge among all stakeholders within and outside a healthcare organization. More than half of all U.S. healthcare providers are already running innovation initiatives to try and achieve improvements in this area.<sup>1</sup>

Consistently applied, standardization in healthcare can and must make an important contribution to a better patient outcome, a good reputation, and an organization’s economic performance.

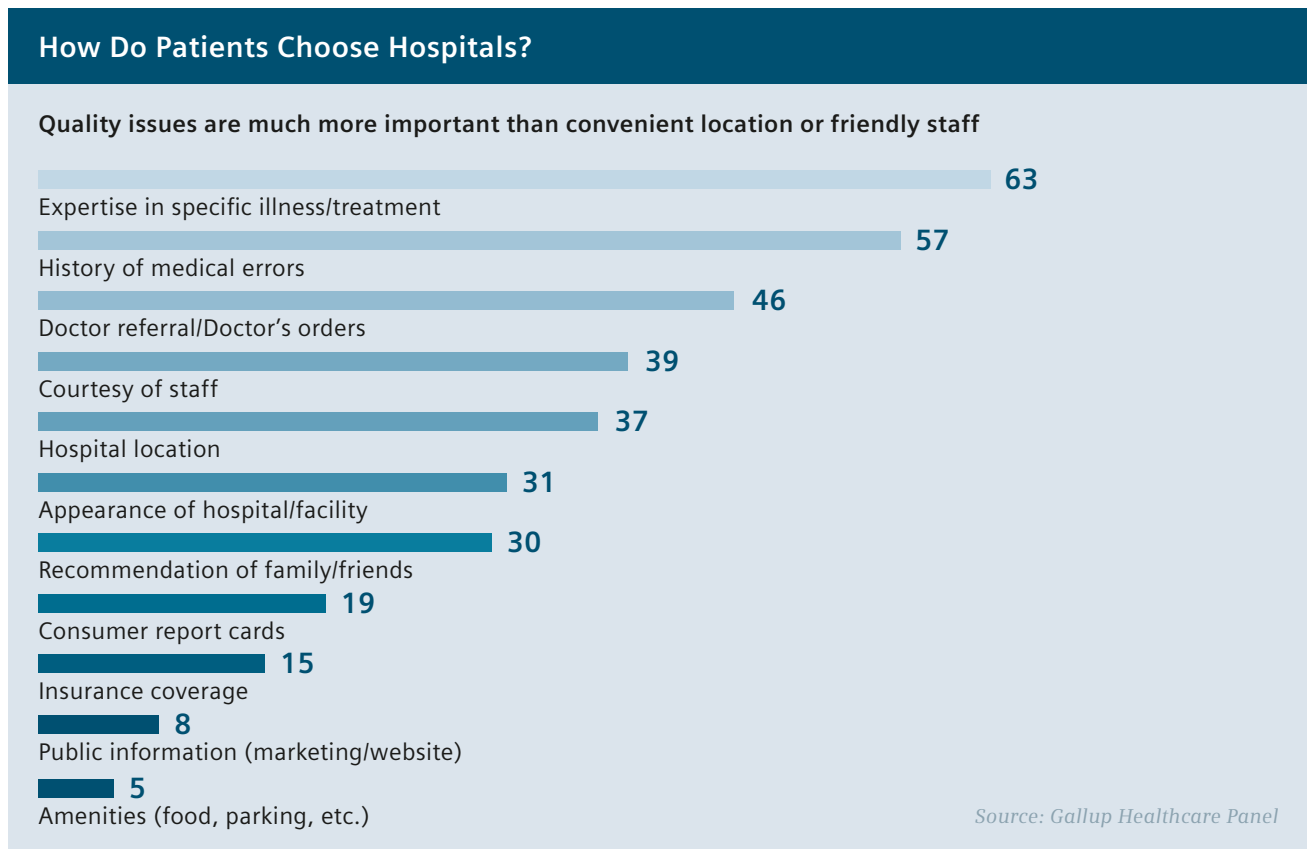
### Clinical Pathways: A Promising Instrument for Managing Quality

Patient surveys indicate that quality of care is a decisive criterion in the choice of a hospital.<sup>2</sup> For many years now, quality-related selection factors such as expertise in a specific illness or treatment, and the history of medical errors top the list from the patient’s perspective.<sup>3</sup>

So the quality of healthcare influences occupancy and, therefore, the commercial success of a hospital. Accordingly, systematic quality management is an important job. Improvements along clinical pathways (also known as care pathways, critical pathways, integrated care pathway or care maps) can positively influence the quality of care. This makes enhancing the pathway a promising focus for creating reliable, reproducible care improvements in daily routine.

Evidence of this can be found all over the world. For example, a 2014 study of cancer patients at Xi’an general hospital in China provides impressive results. A specific clinical pathway was designed to standardize the treatment processes of hepatectomy (removal of the liver) for patients with HCC (Hepatocellular Carcinoma, liver cell carcinoma). In all fields of postoperative outcomes – total complications, mortality, and readmissions – the results were clearly in favor of those patients who were treated according to the clinical pathway, as opposed to those patients who were not.<sup>4</sup>

In the U.K., the National Health Service (NHS) has been working towards more transparency and evidence in medical care for many years. Tools such as the standardized



Patient-Reported Outcome Measures (PROMS)<sup>5</sup> patient survey contribute to improving the measurability of quality of care. Among other things, the Enhanced Recovery Program (ERP), initiated by the Department of Health in 2009, documents the success of standard care pathways. It aims at faster, complication-free recovery and discharge of patients following elective surgery, including hip and knee replacement, major colorectal surgery, and cancer surgery.

The basis of the ERP is an integrated care pathway composed of standardized elements before, during, and after surgery, such as preoperative therapy classes, standardized surgical and anesthetic protocols, and postoperative pain treatment.

In a study of the program's success, the NHS Improving Quality organization writes: »Enhanced recovery has shown its ability to improve patient experience, patient safety, and outcomes by ensuring that patients get the same standards of clinical care seven days a week. Its ability to reduce length of stay without an increase in readmissions provides real efficiency benefits for the NHS. Despite rises in activity for almost all procedures, there were nearly 170,000 fewer bed days for these procedures in 2012/13 than in 2008/09. It has been estimated that further implementation of ERP could save up to 20,000 additional bed days per year. ERP is now the standard care pathway for many patients having major surgery.«

### Quality of Care: Large Differences, Poor Transparency

The concept of defining clinical pathways has been known since the 1980s in healthcare systems worldwide. Despite promising results from various projects, the concept has only recently received widespread attention in conjunction with the buzzword »evidence-based practice (EBP).«

The reason for this is growing economic pressure: In the interests of a sustainable, cost-effective healthcare, its resources must be used as effectively and efficiently as possible. Therefore, hospital financing is strongly linked to objective, verifiable quality criteria like successfully completed surgeries or treatment and readmission rates. Current examples of specific initiatives include Germany's Hospital Structure Act (KHSG) and the Affordable Care Act in the U.S. For instance, the preface of a guide to EBP for U.S. healthcare organizations reads: »The term evidence-based practice (EBP) is hard to avoid in contemporary healthcare. Even if an organization were not motivated to rely on interventions shown to be effective, a host of external forces would push them toward EBP with relentless force.«<sup>6</sup>

Indeed, there is a need for action on »quality of care.« There are significant differences in the quality of treatment between developed countries on the one hand, and emerging or developing countries on the other. This is shown, for example, by the survival rates of cancer patients.



An international comparison of cancer survival trends reveals very wide differences that are likely to be attributable to differences in access to early diagnosis and optimum treatment. For breast and prostate cancer patients, for example, their home country is apparently a factor in their survival, since sophisticated diagnostic and therapeutic options exist but not necessarily in all countries. Diagnostic technology with integrated usability, structure, and automation concepts can provide ways to help reduce result variations and increase information access.<sup>7</sup>

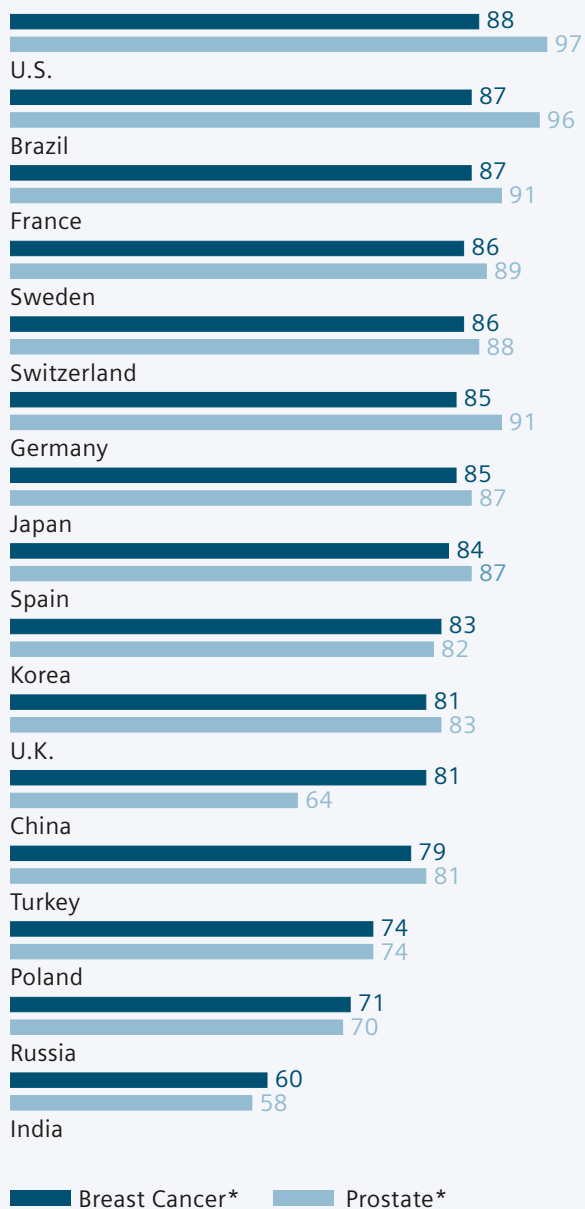
But even within highly developed healthcare systems, quality is by no means consistent. Take, for example, the U.S.: If the care in every state were the same as the highest performing state, there would have been an estimated 75,000 fewer deaths in 2005, according to a report by the Institute of Medicine at the National Academy of the Sciences.<sup>8</sup> The researchers conclude that American healthcare is falling short on basic dimensions of quality, outcomes, costs, and equity. A lack of standards is at least partly to blame: »If airline travel were like healthcare, each

» If airline travel were like healthcare, each pilot would be free to design his or her own preflight safety check or not to perform one at all. «

National Academy of Sciences

## Differences Worldwide in Access to and Quality of Health Services

### Survival rates of cancer patients 5 years after diagnosis



\* 5-year-standardized net survival for adults, Kohorte 2005 – 2009

Source: *The Lancet* Volume 385, No. 9972, March 2015

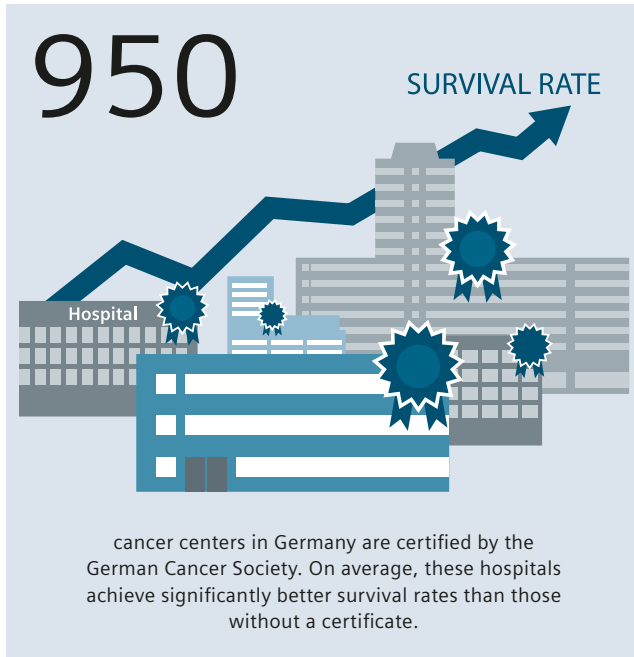
pilot would be free to design his or her own preflight safety check or not to perform one at all,» write the authors of the study.

In this sense, technology may help implement beneficial standards. The more automated and pre-configured the technology, the higher the potential of standardizing a reproducible quality of care. Standardized scanner protocol management, as an example, in combination with pre-configuration and automated diagnostic scan settings, could lead to reduced variations in patient outcomes, potentially lower readmission rates, and faster patient recovery times. Last, but not least, structured reporting of advanced diagnostic findings helps ensure that all relevant stakeholders in the treatment and therapy planning processes are involved and well supported in their decision-making.

In Germany too, health insurance companies and patients' organizations complain of sometimes alarming quality differences between individual hospitals. »No one starting from scratch would design the hospital landscape as it is now,« says Prof. Dr. Jürgen Wasem, co-editor of the annual AOK Hospital Report.<sup>9</sup> Approximately one-third of the German population is insured with one of Germany's eleven regional local health insurance companies (AOK).

For this reason, the AOK has partnered with other German health insurance companies to call for binding quality standards for hospitals, as prescribed by the Hospital Structure Act (KHSVG). In the future, hospitals must expect deductions or could even be completely excluded from providing some health services if they fail to reach a certain number of cases or permanently fall below a defined minimum standard, indicating that they do not provide adequate treatment quality. So for hospital managers, it is increasingly becoming an existential question to prove their hospital's quality of care by means of evaluation criteria.

Figures from the German Cancer Society (Deutsche Krebsgesellschaft, DKG) confirm the contribution that quality standards can make to better patient care. They indicate that the approximately 950 certified cancer centers achieve significantly higher survival rates than many of the non-certified hospitals.<sup>9,10</sup> For example, the survival rate for breast cancer patients who were treated at a DKG Breast Cancer Center, was at 90 percent after four years. Meanwhile, of the patients treated outside certified centers, 83 percent were still alive after the same period. »The certificate helps provide orientation in a complex healthcare landscape and ensures high quality,« says Simone Wesselmann, Head of Certification at the DKG.<sup>9</sup>



## Managing Complexity through Evidence-Based Standards

Binding quality standards not only improve cost efficiency but they can also support high-quality care. Which is why companies like Helios, a German hospital chain with 111 acute-care and rehabilitation clinics and approximately 68,000 employees, have relied on structured quality management and continuous improvement processes for many years.

As part of the Initiative for Quality Medicine (IQM), the quality indicators developed by Helios for its companies at the beginning of the millennium are now used in Germany, Austria, and Switzerland by numerous hospitals outside the group as well.<sup>11</sup> Ideally, participating providers can use the figures to compare efficiency across institutions, and they can also use the IQM process to manage quality and derive optimum treatment paths.

However, wherever standards and guidelines serve as a basis for treatment, it is important to develop them based on the best possible evidence and regularly review them using reliable measurement and comparative data. The collection and evaluation of appropriate datasets often represents considerable additional work for employees who are already working under a very heavy workload. Currently, it is estimated that, nurses in the U.S. spend only 30 percent of their time directly on patient care.<sup>8</sup>

So in the interests of having the broadest and most up-to-date database possible, IQM relies on routine data, i.e., data that hospitals have to collect anyway, for billing purposes or official health statistics. This significantly reduces the burden on the staff compared to using separately developed process indicators, and increases willingness to cooperate. In addition, this data is checked by third parties (e.g. health insurance companies) and is therefore less prone to error or manipulation.

For evidence-based approaches, the rapid advances in information technology have proven to be like the proverbial two sides of a coin. On the one hand, the Internet now makes research and other types of evidence widely available to healthcare practitioners. On the other, the swelling flood of information can be difficult to manage.

While a clinician practicing in the 1980s may have read one or two professional journals a month and attended perhaps one clinical conference a year, contemporary healthcare professionals have access to a virtually unlimited bank of professional journal articles and other sources of research evidence via the Internet.

For example, MEDLINE, the U.S. National Library of Medicine's premier bibliographic database, currently contains more than 22 million references to journal articles. In the 1980s, around 250,000 to 300,000 entries were added each year. This figure has now risen to more than one million per year.<sup>12</sup>

Another example is the Online Mendelian Inheritance in Man (OMIM) international database of genetic diseases. Between 1970 and 2005, the number of entries increased tenfold from 1,600 to 16,000.<sup>13</sup> Rapid advances in diagnostics make it possible to correlate genetic disorders with an ever-increasing number of rare diseases. Well-known and widespread conditions such as breast cancer can also be further differentiated based on genetic causes. The consequence: The exponential increase in medical knowledge and rapid technological progress in diagnostic and surgical technologies has led to a dramatic rise in the complexity of medical decisions – and this rise will continue.

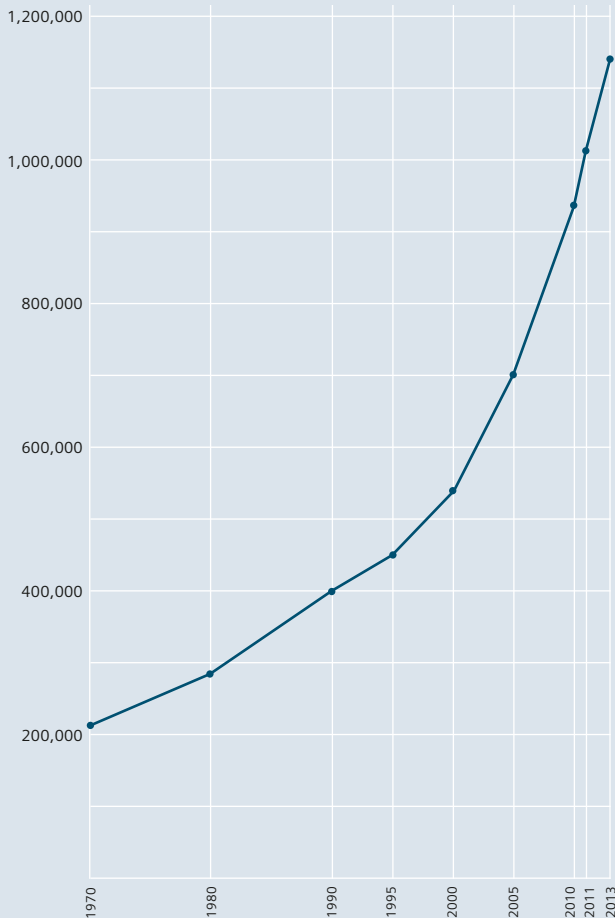
Evidence-based standards and guidelines can help doctors make decisions, avoid medical errors and omissions, explain therapeutic decisions to patients, and guarantee all patients a consistently high quality of treatment. To promote new findings and innovative treatments, existing rules need to be subjected to regular empirical reviews and constantly adapted to the latest findings and individual circumstances.

## Limitations and Challenges

Guidelines based on the best available evidence do not mean that the practitioner has an edict to practice in a single way. In fact, evidence alone is never sufficient to make a specific clinical decision about a specific patient.

## A Breathtaking Flood of Information

More than one million new entries added to the MEDLINE database per year



Source: Medline, October 2015

» The question is whether you, as a system, have a plan to effectively ensure adherence by all team members. «

Gerald Hickson, MD  
Vanderbilt University Medical Center in Nashville, U.S.

To apply evidence to a specific patient care situation, the clinician needs evidence plus good judgment, clinical skill, and knowledge of the patient's unique needs.

This is made particularly clear by the increasing number of patients with multiple chronic diseases. The worldwide aging of populations means that the number of elderly patients with multiple chronic conditions is increasing. In the U.S. alone, this affects more than 75 million people. Managing these multiple conditions requires a holistic approach, as using the various clinical guidelines developed for single diseases may have adverse effects.<sup>8</sup>

For a 79-year-old patient with osteoporosis, type 2 diabetes, hypertension, and chronic obstructive pulmonary disease, existing clinical practice guidelines would sometimes be contradictory. For example, osteoporosis patients are urged to do weight-bearing exercises, while diabetes patients are told to avoid such exercises. Also, the numerous drugs recommended in each case may have dangerous interactions. So individual clinical decision-making and individual opinions about the patient will still be needed in the future. Decisions must also continue to be made individually and sometimes subjectively, if there is insufficient empirical knowledge to secure a specific clinical pathway. It comes down to personal experience and knowledge.

However, guidelines should be based on more than expert conjecture or consensus. When there is a lack of transparency in the decision-making process or inefficient sharing of data, the lack of standardization can result in challenges. In fact, varying levels of staff experience can induce variation in the care delivery process.

Standardized operating concepts for diagnostic technology might help address these challenges. Automation and pre-configuration of technology and integrated usability across assets may help foster progress toward a value-based care environment.

To enforce standards within healthcare facilities, resolute and well thought-out change management is required. One important prerequisite for success in standardization projects is that providers succeed in persuading everyone involved of the benefits and motivating them to participate. »The question is whether you, as a system, have a plan to effectively ensure adherence by all team members«, says Gerald Hickson, MD, Senior Vice President for Quality, Patient Safety, and Risk Prevention at Vanderbilt University Medical Center in Nashville (U.S.).<sup>14</sup>

## In a nutshell

# Standardization Challenges in Healthcare

- 01 Standardization does not aim solely at lowering costs, but first and foremost at ensuring reliable, high-quality results. This makes it a key issue for providers, payers, and patients.
- 02 Standardized clinical pathways can make quality of care more measurable and reproducible for providers, patients, and payers, supporting more consistent, reliable treatment decisions.
- 03 For standardization projects to succeed, hospital managers must actively address the concerns of clinical staff and patients, persuade all parties, and motivate them to participate.
- 04 In view of rising costs and the existing differences in quality, payers, government officials and patients' organizations in many countries are calling for reliable quality standards. For hospital managers, they are increasingly becoming a matter of survival.
- 05 Evidence-based standards and guidelines can provide support to doctors in making complex decisions, help them avoid medical errors and omissions, and enable them to guarantee that all patients get a consistently high quality of treatment.
- 06 Existing standards and guidelines should be subjected to regular empirical reviews and adapted to current findings. Rules that are based solely on tradition, or pragmatic consensus can endanger the quality of care.

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**Dr. Bernd Montag**

Chief Executive Officer  
Siemens Healthineers

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*Our goal is to be your inspiring partner helping you to achieve better outcomes and reduce costs. As a starting point, we developed this set of white papers to help identifying key challenges in your healthcare organization with some first outlines on improvement methods.* ««

*B. Montag*

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