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May 29 2017 13:27

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## A user's manual for the IOM's 'quality chasm' report

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**Publication info:** Health Affairs ; Chevy Chase 21.3 (May/Jun 2002): 80-90.

[ProQuest document link](#)

### **Abstract (Abstract):**

Fifteen months after releasing its report on patient safety (To Err Is Human), the Institute of Medicine released Crossing the Quality Chasm. Although less sensational than the patient safety report, the Quality Chasm report is more comprehensive and, in the long run, more important.

### **Abstract:**

Fifteen months after releasing its report on patient safety (To Err Is Human), the Institute of Medicine released Crossing the Quality Chasm. Although less sensational than the patient safety report, the Quality Chasm report is more comprehensive and, in the long run, more important. It calls for improvements in six dimensions of health care performance: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity; and it asserts that those improvements cannot be achieved within the constraints of the existing system of care. It provides a rationale and a framework for the redesign of the US health care system at four levels: patients' experiences; the "Microsystems" that actually give care; the organizations that house and support Microsystems; and the environment of laws, rules, payment, accreditation, and professional training that shape organizational action.

### **Full text:**

#### **Headnote**

Patients' experiences should be the fundamental source of the definition of "quality."

PROLOGUE: The Institute of Medicine (IOM), one of the three bodies that make up the U.S. National Academy of Sciences, has a distinguished history of publishing weighty reports on important subjects that gather more dust on shelves than they often deserve. One such recent IOM report, Crossing the quality Chasm, is gathering little dust, but penetrating it is a challenge. It calls for nothing less than a redesign of the U.S. health care system.

One of the architects of the report, Donald Berwick, decided that it would be worthwhile to condense the message into a "user's manual" for interested readers in the United States and abroad. In this paper he synthesizes the report's structural themes and presents them, executive summary-style, as a framework that did not appear in the final report but was the basis for the months of discussion that led up to the report's writing and dissemination. This framework comprises four levels of interest: the experience of patients (Level A), the functioning of small units of care delivery (or "microsystems") (Level B); the functioning of the organizations that house or otherwise support microsystems (Level C); and the environment of policy, payment, regulation, accreditation, and other such factors (Level D) that shape the behavior, interests, and opportunities of the organizations at Level C. "True north," Berwick writes, lies at Level A: patients and their experiences. As the author of more than 100 peer-reviewed papers in numerous journals, Berwick was ideal for the task. A pediatrician by training, Berwick is chief executive officer of the Institute for Healthcare Improvement (IHI). Based in Boston, the IHI is a nonprofit organization dedicated to improving the quality of health care systems through education, research, and demonstration projects. The IHI has launched or collaborated in projects across the United States and Canada, in a number of European countries, and in Australia. Berwick holds three degrees from Harvard University and is an elected member of the IOM.

ABSTRACT: Fifteen months after releasing its report on patient safety (To Err Is Human), the Institute of

Medicine released *Crossing the Quality Chasm*. Although less sensational than the patient safety report, the Quality Chasm report is more comprehensive and, in the long run, more important. It calls for improvements in six dimensions of health care performance: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity; and it asserts that those improvements cannot be achieved within the constraints of the existing system of care. It provides a rationale and a framework for the redesign of the U.S. health care system at four levels: patients' experiences; the "microsystems" that actually give care; the organizations that house and support microsystems; and the environment of laws, rules, payment, accreditation, and professional training that shape organizational action. EXCEPT FOR THE OCCASIONAL SCANDAL, stories on health care quality in the United States have not often made headline news. All that changed in November 1999, with the publication of *To Err Is Human*, the first report of the Institute of Medicine (IOM) Committee on Quality of Health Care in America.<sup>1</sup> The media, the public, and, to a large extent, the medical profession seemed to become aware all at once that the problem of patient safety-injuries to patients from the care that was supposed to help them-is pervasive. The IOM reframed medical error as a chronic threat to public health, as lethal as breast cancer, motor vehicle accidents, or AIDS, and more than two years later the news media are still featuring that story. To the communities of health services research and clinical evaluative science, the scale of medical injuries was no news at all. What the press and the IOM found so worthy of prime-time broadcast were largely IOM summaries of research findings that were decades old. Two of the projects featured the most often, the Harvard Medical Practice Study from New York State and a study of medication errors in teaching hospitals, appeared in print eight years and five years, respectively, before the IOM made them into "news" for the public.<sup>2</sup> The IOM committee followed its initial report eighteen months later, in March 2001, with a second, more comprehensive report, *Crossing the Quality Chasm*.<sup>3</sup> The Quality Chasm report aims farther and higher than *To Err Is Human* did. It makes clear that patient safety is part of a larger picture, harder to explain to the public but even more important because it deals with the entire terrain of concerns about health care quality. Because it is more complicated and technical, the Quality Chasm report has attracted much less public attention than *To Err Is Human* did, but for the serious student of health care quality and the serious leader of needed change, it signals the possible dawning of a new and persistent sense that the U.S. health care system's performance in many dimensions, not just safety, is unacceptably far from what it should be.

In this paper I present a "user's manual" for this long, often dense report, with the goal of making its challenges less daunting.

#### Background Of The Quality Chasm Report

The IOM formed the Committee on Quality of Health Care in America on its own initiative, an unusual move for an institution whose customary role is reactive: to answer tough questions about science posed by Congress and the executive branch to help them frame sound policies. The IOM decided to begin a Program on Quality of Health Care in America (of which the committee was one component) soon after the report of a less formal, blue-ribbon, IOM-sponsored National Roundtable on Health Care Quality, which, in a lead article in the *Journal of the American Medical Association*, issued a stunning call to arms: Serious and widespread quality problems exist throughout American medicine. These problems...occur in small and large communities alike, in all parts of the country, and with approximately equal frequency in managed care and fee-for-service systems of care. Very large numbers of Americans are harmed as a result.<sup>4</sup>

The Roundtable was not the only national leadership group ringing an alarm on quality of care. Almost simultaneously, the National Cancer Policy Board and the President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry published important and disturbing findings about the gaps between what the quality of care is and what it could be.<sup>5</sup> The findings of these three groups charged the air surrounding the IOM committee with a sense of urgency. No issue seemed more urgent than that of patient safety, which led the committee to "fast-track" its examination of this first among many issues in improving health care quality.

The committee found the dramatic public reaction to *To Err Is Human* both surprising and gratifying. However, from the start the committee always knew that patient safety was only one of several important quality problems at hand. The Roundtable had provided a helpful nosology of such problems, contributing the labels "overuse," "underuse," and "misuse" as now-familiar classifications of quality defects. "Misuse" was the Roundtable's term for failures to execute clinical care plans and procedures properly, the domain of poor quality addressed most prominently in *To Err Is Human*. "Overuse" was its term for the use of health care resources and procedures in the absence of evidence that they could help the patients subjected to them, such as prescribing advanced antibiotics for simple infections. "Underuse" denoted failures to employ health care practices of proven benefit, such as the failure to use beta-blockers in persons with acute myocardial infarction over age sixty-five. The Quality Chasm report grappled with all three of these quality-of-care issues flagged by the Roundtable, as well as other performance gaps that the Roundtable did not address.

#### The Chain Of Effect: A Framework For Understanding

Crossing the quality Chasm is hard to read. It becomes simpler if one refers to an underlying logical framework, which did not appear explicitly in the final document, but which was the basis for conversation during many of the deliberations of the full committee, as well as of its two major subcommittees: Designing the Health System of the Twenty-first Century (which I chaired) and Creating an External Environment for Quality.

The underlying framework analyzes the needed changes in American health care at four different levels: the experience of patients (Level A); the functioning of small units of care delivery ("microsystems") (Level B); the functioning of the organizations that house or otherwise support microsystems (Level C); and the environment of policy, payment, regulation, accreditation, and other such factors (Level D), which shape the behavior, interests, and opportunities of the organizations at Level C. The model is hierarchical because it asserts that the quality of actions at Levels B, C, and D ought to be defined as the effects of those actions at Level A, and in no other way.

"True north" in the model lies at Level A, in the experience of patients, their loved ones, and the communities in which they live. The Quality Chasm report endorsed specifically the overarching statement of purpose proposed by the President's Advisory Commission: "The purpose of the health care system is to reduce continually the burden of illness, injury, and disability, and to improve the health status and function of the people of the United States."

Building on the extensive evidence collected by the IOM committee and its predecessors, the committee turned this overarching statement of purpose into a set of six "Aims for Improvement," which, the committee says, stakeholders throughout U.S. health care ought to embrace. I paraphrase them briefly here: (1) Safety: Patients ought to be as safe in health care facilities as they are in their own homes. (2) Effectiveness: The health care system should match care to science, avoiding both overuse of ineffective care and underuse of effective care. (3) Patient-- centeredness: Health care should honor the individual patient, respecting the patient's choices, culture, social context, and specific needs. (4) Timeliness: Care should continually reduce waiting times and delays for both patients and those who give care. (5) Efficiency: The reduction of waste and, thereby, the reduction of the total cost of care should be never-ending, including, for example, waste of supplies, equipment, space, capital, ideas, and human spirit. (6) Equity: The system should seek to close racial and ethnic gaps in health status.

The committee minced no words in its assessment of the capacity of today's health care system to achieve these six aims: "In its current form, habits, and environment, American health care is incapable of providing the public with the quality health care it expects and deserves."

This is a major transition in the IOM's conclusions: from merely asserting that health care quality is not what it could be (which the Roundtable said) to asserting that the current care system cannot make it what it should be (which the Committee on Quality of Health Care in America said). This latter conclusion appeared first not in the Quality Chasm report, but in *To Err Is Human*, which concluded likewise that current rates of injury from care

are inherent properties of current system designs and that safer care will require new designs.

For example, To Err Is Human attributed most patient injuries not to blameworthy clinicians but rather to systemic factors such as unrealistic reliance on human memory, poor communication systems, unrealistic demands on human vigilance, too little respect for the consequences of fatigue, reliance on handwriting in a computer age, and so on. It declared that exhortation, blaming, and "trying harder" are not acceptable plans for improving patient safety; rather, we should be pursuing the much more scientifically valid plan of substituting new, reliable system designs for old, unreliable ones.

\* Changes at Level A: experience of patients and communities. The first fundamental change that the Quality Chasm report called for is at Level A: a change in our nation's intended aims for improvement, from self-satisfaction or mere apology to aims that are bold, explicit, uniformly espoused, comprehensive, and patient centered. Here the committee went beyond the technical qualities of overuse, underuse, and misuse declared by the Roundtable, by tying "quality" issues more closely to patients' experiences, cost, and social justice. The committee remained well aware that achieving new performance levels will require changes far beyond the setting of goals, and it therefore went on in the Quality Chasm report to recommend changes at the other to recommend changes at the other three levels.

\* Changes at Level 13: microsystems of care. Level B's microsystems are the small units of work that actually give the care that the patient experiences. The committee borrowed the notion of such small systems from an organizational theorist, Brian Quinn, whose work has only recently been applied to health care. A "microsystem" to Quinn is a small team of people, combined with their local information system, a client population, and a defined set of work processes. A cardiac surgical team is a microsystem; so is the night shift in an emergency department; so is a small clinical office practice; and so, in the information age, is the team that designs a Web page for patients with multiple sclerosis. The microsystem is where the work happens; it is where the "quality" experienced by the patient is made or lost.

The committee asserted that achieving the six aims for improvement will require redesigns of these small units of work and suggested three comprehensive redesign principles: that care should be knowledge-based, patient-centered, and systems-minded.

Knowledge-based care. Such care is committed to using the best scientific and clinical information available in the service of the patient. The committee found that current care is insufficiently reliable in its use of the best science and best-known practices because it lacks information systems that put that knowledge at the point of use and because it honors and protects unscientific variations in care based on local habits, unquestioned forms of autonomy, and insufficient curiosity.

Patient-centered care. Such care respects the individuality, values, ethnicity, social endowments, and information needs of each patient. The primary design idea is to put each patient in control of his or her own care. The aim is customization of care, according to individual needs, desires, and circumstances. It also implies transparency, with a high level of accountability of the care system to the patient.

Systems-minded care. This kind of care assumes responsibility for coordination, integration, and efficiency across traditional boundaries of organization, discipline, and role. It is especially relevant to patients with chronic illnesses, whose needs extend across time and space. To work well as a system, this kind of care requires high degrees of cooperation, with a higher value attached to cooperation than to local prerogatives.

Ten simple rules. Reaching once again outside health care for guidance, the committee drew on the currently popular theory of "Complex Adaptive Systems" to develop some modern "simple rules" for microsystem redesign! "Simple rules" are basic guiding principles for design, which can powerfully shape adaptive selfregulation and detailed problem solving in a human system. For example, the simple rule, "Keep patients and their loved ones physically together throughout the care process," would lead to entirely different detailed designs from the rule, "Families do not belong in technical care areas."

The Quality Chasm report proposes ten new simple rules as a framework for the enhancement of the

effectiveness of microsystems. Each rule is presented in juxtaposition to the prevailing, and less helpful, current design rule.

(1) Current: Care is based primarily on visits. New: Care is based on continuous healing relationships. Patients should receive care whenever they need it and in many forms, not just face-to-face visits. This rule implies that the health care system should be responsive at all times and that access to care should be provided over the Internet, by telephone, and by other means in addition to face-to-face visits.

(2) Current: Professional autonomy drives variability. New: Care is customized according to patients' needs and values. The system of care should be designed to meet the most common types of needs but have the capacity to respond to individual patients' choices and preferences.

(3) Current: Professionals control care. New: The patient is the source of control. Patients should be given the necessary information and the opportunity to exercise the degree of control they choose over the decisions that affect them. The health care system should be able to accommodate differences in patients' preferences and encourage shared decision making. (I interpret this to mean that "permission" begins in the patient's hands, and caregivers assume control only by specific delegation. This would, for example, make the idea of "visiting hours" a thing of the past.)

(4) Current: Information is a record. New: Knowledge is shared freely. Patients should have unfettered access to their own medical information and to clinical knowledge. Clinicians and patients should communicate effectively and share information.

(5) Current: Decision making is based on training and experience. New: Decision making is based on evidence. Patients should receive care based on the best available scientific knowledge. Care should not vary illogically from clinician to clinician or from place to place.

(6) Current: "Do no harm" is an individual responsibility. New: Safety is a system property. Patients should be safe from injury caused by the care system. Ensuring safety requires greater attention to systems that help to prevent and mitigate errors.

(7) Current: Secrecy is necessary. New: Transparency is necessary. The health care system should make information available to patients and their families that allows them to make informed decisions when selecting a health plan, hospital, or clinical practice or when choosing among alternative treatments. This should include information describing the systems performance on safety, evidence-based practice, and patient satisfaction.

(8) Current: The system reacts to needs. New: Needs are anticipated. The health care system should anticipate patients' needs rather than simply reacting to events.

(9) Current: Cost reduction is sought. New: Waste is continuously decreased. The health care system should not waste resources or patients' time.

(10) Current: Preference is given to professional roles over the system. New: Cooperation among clinicians is a priority. Clinicians and institutions should actively collaborate and communicate to ensure an appropriate exchange of information and coordination of care. (This renders cooperation a primary professional obligation, "trumping" the prerogatives traditionally associated with degree, profession, role, or gender.)

The duality Chasm report says that we need microsystems to emerge that have these ten properties, to increase the odds of progress toward the six aims for improvement. However, turning to Level C, the report finds that the organizations (hospitals, multispecialty group practices, integrated delivery systems, and so on) that house microsystems and give them the tools for their work are not likely to encourage such changes. The "quality" of organizations, in this framework, is their capacity to encourage microsystems that have the capacity to achieve the aims; by this measure, the IOM committee identifies major gaps in the quality of today's health care organizations.

\* Changes at Level C: health care organizations. Careful readers of the duality Chasm report will find that recommendations at Level C are more vague than are those at Levels B and A. The problem of redesign gets harder and the evidence weaker as one moves from the microsystem to the organization. The committee did

conclude that health care organizations need better designs in at least six areas, if microsystems of the proposed twenty-first-century design are to thrive: (1) More robust and persistent systems for finding best practices and assuring that these best-known clinical models, rather than historically protected or habitual ones, become organizational standards. (2) Better use of information technology to improve access to information and to support clinical decision making. Microsystems, without organizational support, lack the capacity to arrange ideal information technologies. (3) More investment and persistence in improving workforce knowledge and skills. The committee noted the lack in health care of a deep and well-supported human resource development strategy. (4) More consistent development of effective teams and teamwork. (5) Better coordination of care among services and settings, both within and among organizations, especially with respect to the care of people with chronic illnesses. (6) More sophisticated, extensive, and informative measurement of performance and outcomes, especially with respect to the six aims for improvement.

The Quality Chasm report suggests workshops and other approaches to identifying state-of-the-art systems of information technology, human resource development, and so forth at the organizational level; charges the secretary of health and human services (HHS) to "establish and maintain a comprehensive program aimed at making scientific evidence more useful and accessible to clinicians and patients"; and calls for a "renewed national commitment" by all stakeholders to building a modern health care information system infrastructure, including "the elimination of most handwritten clinical data by the end of the decade."

\* Changes at Level D: health care environment. The recommendations for organizational change brought the IOM committee directly to the issues at Level D, the external environment of health care. The list of important environmental systems is long, including financing (both capital and operating revenue), regulation, accreditation, litigation, professional education, and social policy, among others. Even a cursory comparison of proposed redesigns at Levels B and C reveals toxicities and barriers at Level D. Microsystems ought to offer patients the opportunity to get care through e-mail, but who will pay for it? Modern organizational infrastructures ought to focus heavily on information technologies, but where will the capital come from? A culture of safety must be one of openness, honesty, and disclosure, but how is that feasible with a hovering threat of malpractice litigation?

At Level D, like Level C, the Quality Chasm report offers many more questions than answers. Its few specific recommendations focus mainly on finance, suggesting more flexibility than in most current payment systems and noting, timidly but accurately, that among the current imperfect forms of payment to encourage the twenty-first-century care system, the much-maligned mechanism of capitation may be the least imperfect.

The report suggests both immediate changes in payment systems to remove some of the barriers to improvement of care and a research and demonstration project agenda to understand the financing barriers more fully. It also suggests high-level, systemwide dialogue and research on potentially helpful redesigns of the systems of professional education and credentialing and of litigation and regulation, so as to make those environmental influences more conducive to continual care improvement.

As an integrating and focusing notion, the Quality Chasm report proposes that our national agenda for improvement at all four levels may best be applied first to a set of so-called priority conditions, reflecting the main health status burdens in our population and key care processes associated with them. The IOM proposes that about fifteen such priority conditions be selected (by the Agency for Healthcare Research and Quality, or AHRQ) and that these constitute an initial list of targets for action.

#### Obstacles And The Future

No one on the IOM committee thought that the changes called for in the Quality Chasm report would be easy to accomplish. Obstacles to implementation exist at every level. Among the most severe, with a few possible policy remedies, are these.

\* Diffuse or unstable aims. The committee recommends articulating and adhering to a strong set of improvement goals, but in America health care goals tend often to be timid, fluctuating, and inconsistent across

stakeholders. In its final report, the President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry recommended that an "Advisory Council for Health Care Quality should be created in the public sector to provide ongoing national leadership ... (and) identify national aims and specific objectives for improvement." Neither Congress nor the president has yet established such a national leadership mechanism, and we need one.

\* Measurement unconnected to aims. The agenda of measurement of and reporting on quality of care can too often dominate the attention of a frightened profession and a wary public. The report suggests that our selection and use of measurements of quality of care ought in large part to be guided by the aims for improvement. This will require important changes in current processes of measurement, accountability, and accreditation, beginning with much more coordination than at present between the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the National Committee for Quality Assurance (NCQA).

\* Gaps In leadership of change. Clinical and nonclinical health care leaders are not always well equipped to lead the scale and type of systemic change that the report contemplates. They are trained to ride out the storm, not to create one. We need a more directed national strategy for health care leadership development.

\* Low Investment in system redesign. Our awesome capacity for biomedical innovation has no match in our level of investment for delivery system redesign. What does an ideal emergency department look like? How can patients be much more fully in control of their own care? What are the options and relative merits of different ways to coordinate hospital, outpatient, rehabilitation, and home care? Questions such as these should become much more direct objects of a national investment in health care system research and development. (Almost certainly, it is time for AHRQ, now funded at about \$300 million per year, to be "billionized," so that it can become a national resource for care system redesign.)<sup>9</sup>

\* Nineteenth-century Information technologies. Our information infrastructures are woefully underdeveloped, despite decades of hand-wringing and billions of private dollars of investment. The committee believes that a national program for development of health care's twenty-first-century information technology is long overdue. An embedded, but important, obstacle is the medical record-archaic, unhelpful, wasteful, unsafe, and embarrassing. Complete redesign (not just computerization) of the medical record as a tool for care is a worthy national goal, a new public "moon shot."

\* Toxic financing schemes. Many of the simple rules imply changes in payment, or else progress will be slow. For example: How will we support e-mail care? Group visits? Capitalization of a new national format for the medical record? How can we consolidate payment so that innovations that keep people out of the hospital are attractive to both microsystems and organizations? An important step would be to establish several market-area experiments on payment reform to encourage improvement, with the Centers for Medicare and Medicaid Services (CMS) as a lead payer and convener.

\* Litigation threats. The committee counsels a health care culture that is transparent, open, safe, and honest about its defects and performance. This requires rare breeds of courage or foolhardiness in a legal climate that provokes fear and secrecy. Tort reform is an important step toward the conditions for a twenty-first-century health care system. We badly need at least one courageous, time-limited experiment on a no-fault tort system at a statewide or regional level with enterprise-level responsibility for compensating victims of medical injury.

\* Overregulation for stability. Accreditation, professional licensure, and other forms of regulation help to keep our system safe, but unless they also intentionally foster change and improvement, they can all reinforce status quo systems that impede progress. The committee believes, for example, that patients should have the chance to participate more in care and decisions, that new routes of care delivery beyond visits should be developed, and that the medical record system is outmoded and wasteful. Changes in the underlying traditional systems and modes of behavior will require reconsideration of the rules and procedures that reinforce them.

\* Professional education without a systems view. For clinicians and other health professionals, the quality Chasm report calls for a new breed of "citizenship" in the system of work. Customary professional training may

not nurture the skills, knowledge, and attitudes to make that possible. The report designates "cooperation" as a premier professional value; we will need to teach it. Current efforts at the Accreditation Council on Graduate Medical Education to define for medical residency a curriculum to improve professional skills are right on target. THE OVERALL STRENGTHS of the Quality Chasm report lie foremost in its systems view. Rooted in the experiences of patients as the fundamental source of the definition of quality, the report shows clearly that we should judge the quality of professional work, delivery systems, organizations, and policies first and only by the cascade of effects back to the individual patient and to the relief of suffering, the reduction of disability, and the maintenance of health.

The quality of the microsystem is its ability to achieve ever better care: safe, effective, patient-centered, timely, efficient, and equitable. The quality of an organization is its capacity to help microsystems do that. And the quality of the environment-finance, regulation, and professional education-is its ability to support organizations that can help microsystems to achieve those aims. The report therefore suggests to any careful reader that whether we wish to tackle the problem of quality as payers, regulators, executives, managers, or clinicians, we will improve health care as it needs to be improved, either all together or not at all.

An earlier version of this paper was presented at the Commonwealth Fund 2001 International Symposium on Health Care Policy: Health Care System Reforms and Strategies to Improve Access and Quality of Health Care for At-Risk Populations, 9-11 October 2001, in Washington, DC.

#### **Footnote**

#### **NOTES**

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9. As of this writing, the proposed budget for AHRQ for FY 2003 (\$249 million) is 16 percent below the budget for FY 2002 (\$297 million)-in contradiction of the recommendations of the Quality Chasm report. See [www.ahrq.gov](http://www.ahrq.gov) for more information.

**Subject:** Health care delivery; Quality of service; Health care policy; Accreditation; Reforms; Quality control;

**MeSH:** Decision Making, Delivery of Health Care -- standards, Efficiency, Organizational, Evidence-Based Medicine, Health Services Accessibility, Humans, Medical Errors -- prevention & control, Organizational Culture, Patient-Centered Care, Safety Management, Social Justice, Systems Analysis, Time Management, Treatment Outcome, United States, Delivery of Health Care -- organization & administration (major), Institute of Medicine (U.S.) (major), Total Quality Management -- organization & administration (major)

**Location:** United States US

**Classification:** 9190: United States; 8320: Health care industry; 1200: Social policy; 5320: Quality control

**Publication title:** Health Affairs; Chevy Chase

**Volume:** 21

**Issue:** 3

**Pages:** 80-90

**Publication year:** 2002

**Publication date:** May/Jun 2002

**Publisher:** The People to People Health Foundation, Inc., Project HOPE

**Place of publication:** Chevy Chase

**Country of publication:** United States

**Publication subject:** Insurance, Public Health And Safety

**ISSN:** 02782715

**Source type:** Scholarly Journals

**Language of publication:** English

**Document type:** Journal Article

**Accession number:** 12026006

**ProQuest document ID:** 204628853

**Document URL:** <https://search.proquest.com/docview/204628853?accountid=78988>

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**Last updated:** 2015-01-17

**Database:** ABI/INFORM Collection

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