Improving the Safety and Quality of Health Care: The Impact of the National Academy of Medicine on Research and Collaboration

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President, National Academy of Medicine

AHRQ Research Summit: Improving Diagnosis in Health Care
September 28, 2016

NATIONAL ACADEMY OF MEDICINE
Leadership • Innovation • Impact | *for a healthier future*

U.S. National Academy of Sciences (1863)

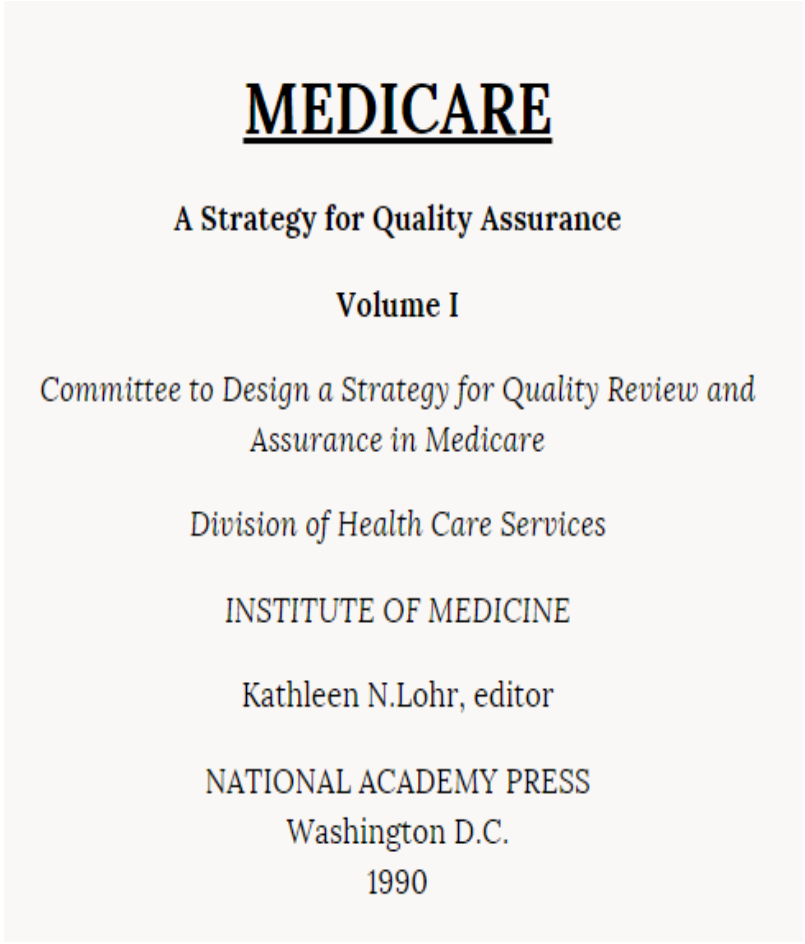
"The academy shall, whenever called upon by any department of the government, investigate, examine… and report upon any subject of science or art,… "

1970 Institute of Medicine founded to advise & improve health of people everywhere.

The New York Times describes the IOM as "*the most esteemed and authoritative adviser on issues of health and medicine, and its reports can transform medical thinking around the world*."

July 1, 2015 IOM is reconstituted as **the National Academy of Medicine**

Early IOM Healthcare Quality Initiatives



MEDICARE

A Strategy for Quality Assurance

Volume I

Committee to Design a Strategy for Quality Review and Assurance in Medicare

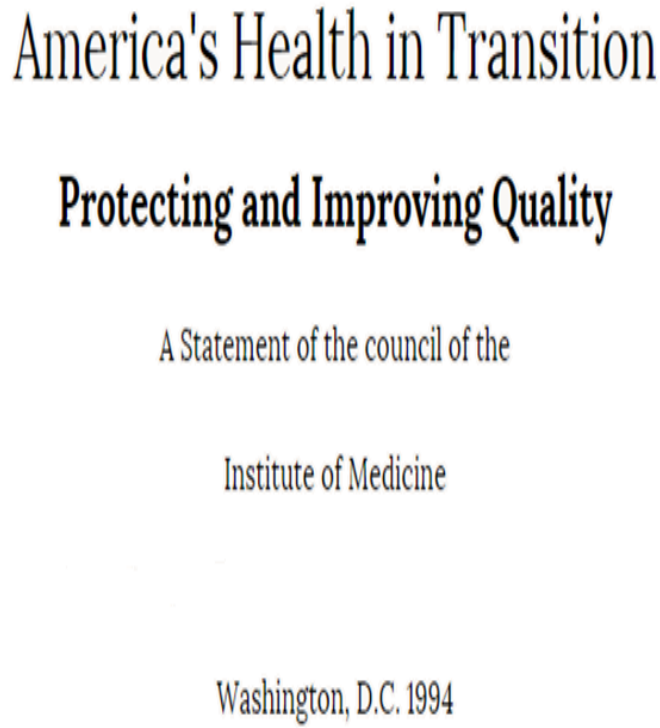
Division of Health Care Services

INSTITUTE OF MEDICINE

Kathleen N.Lohr, editor

NATIONAL ACADEMY PRESS
Washington D.C.
1990

IOM Health Care Quality



America's Health in Transition

Protecting and Improving Quality

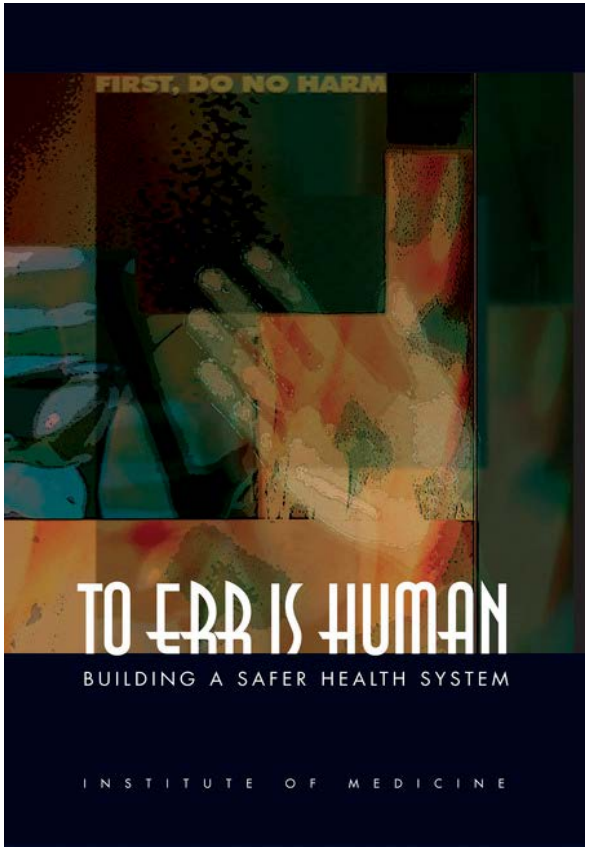
A Statement of the council of the

Institute of Medicine

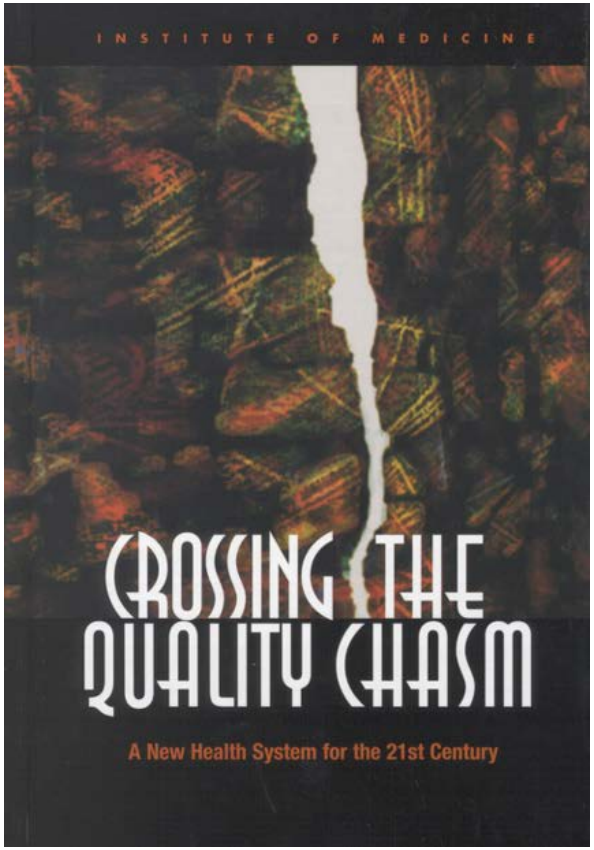
Washington, D.C. 1994

The IOM Quality Series

Foundational Reports



1999



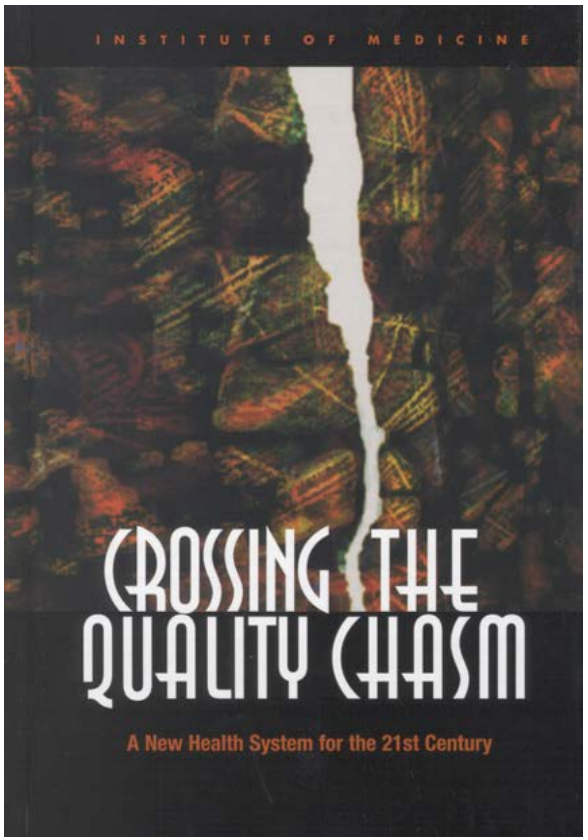
2001

To Err is Human: Building a Safer Health System

- Medical errors can be defined as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim
- The majority of errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them
- 44,000 - 98,000 people die in US hospitals each year as a result of preventable medical errors
- Errors cost $17 billion – $29 billion per year in hospitals in the US

However, more recent data indicate that these numbers may be substantially higher (James, 2013, JPS)

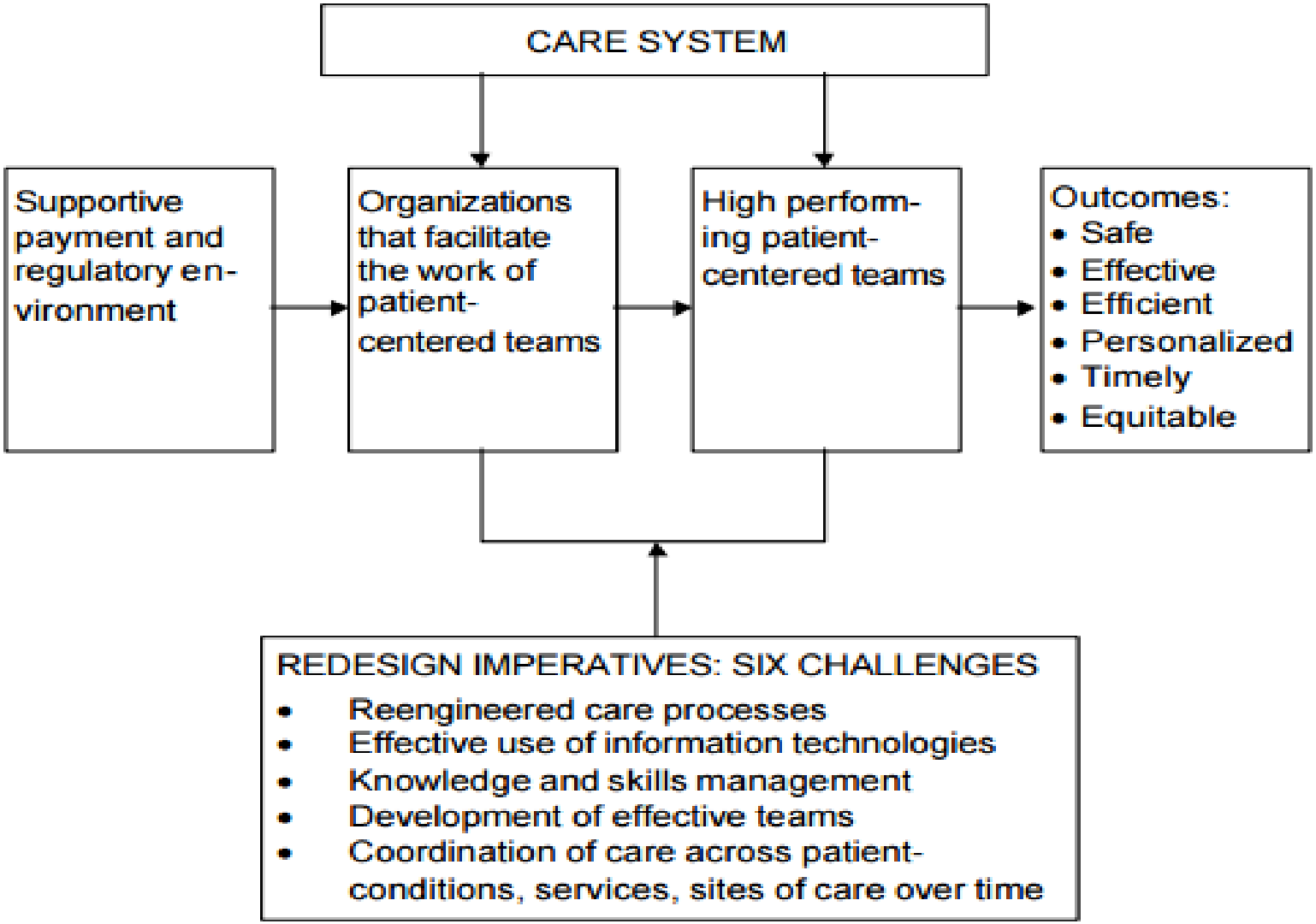
Crossing the Quality Chasm: A New Health System for the 21st Century (2001)



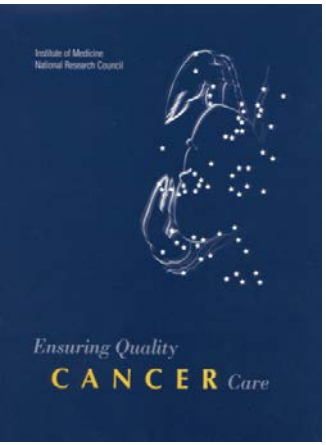
2001

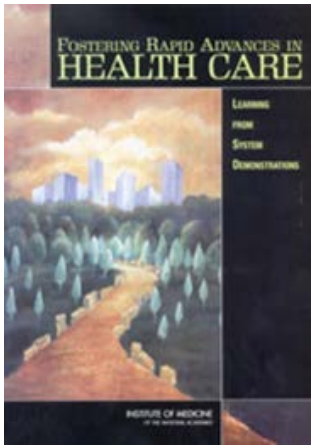
- Described broader **quality issues** and defines six aims—care should be
  - safe,
  - effective,
  - patient-centered,
  - timely,
  - efficient and
  - equitable

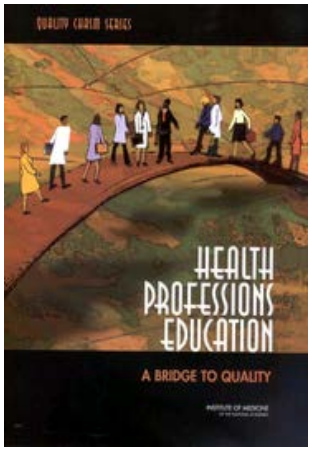
Crossing the Quality Chasm: Redesign a New Health System for the 21st Century

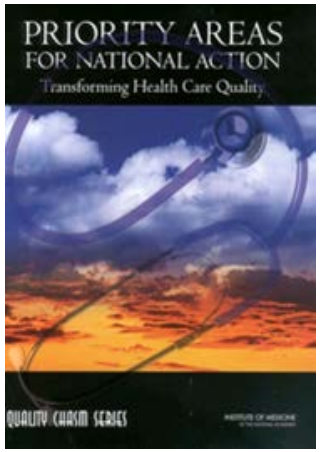


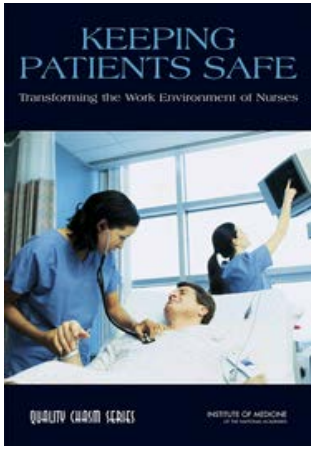
IOM Work on Quality

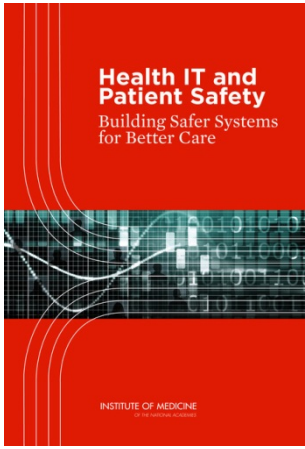


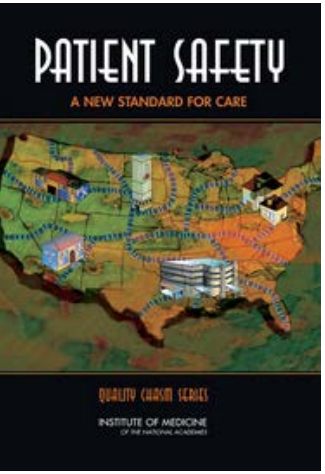


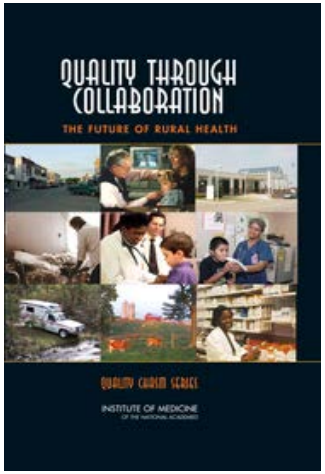


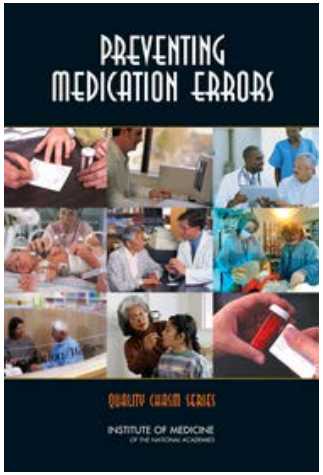


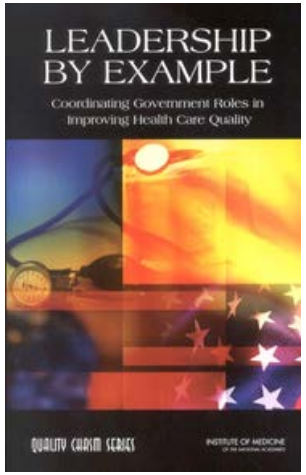


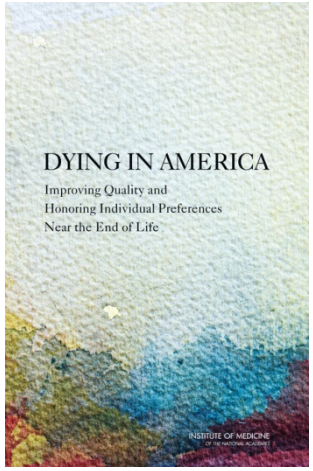


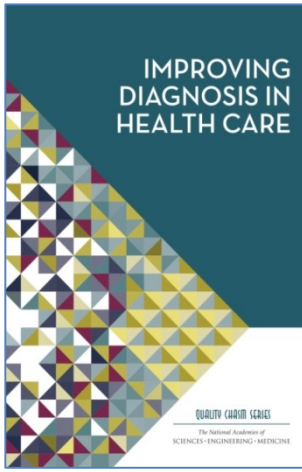




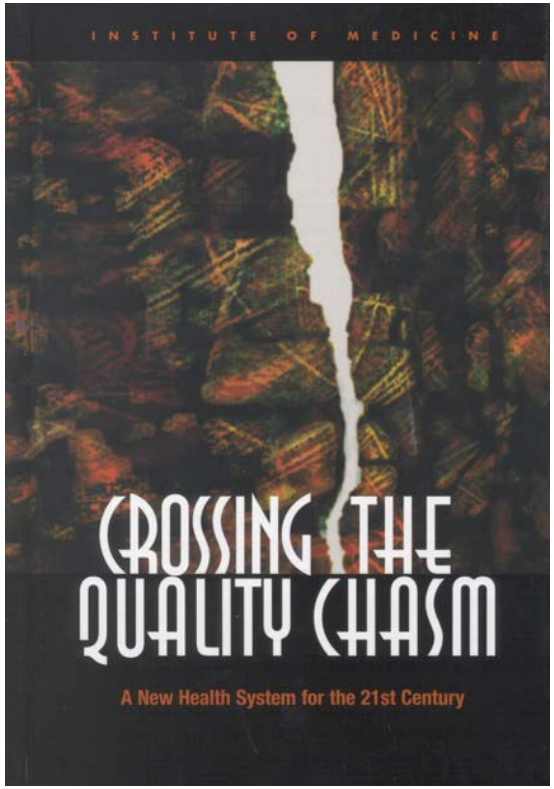








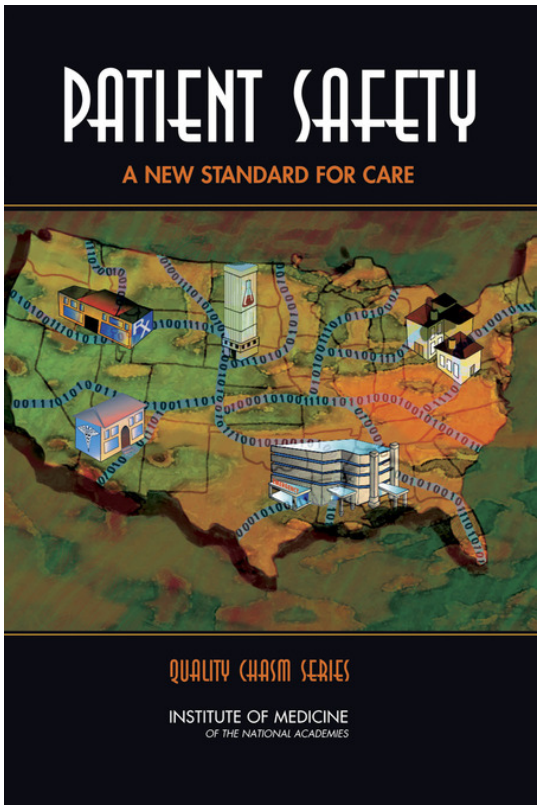
IT Infrastructure



2001

Congress and stakeholders should make a renewed national commitment to building an information infrastructure to support health care delivery, consumer health, quality measurement and improvement, public accountability, clinical and health services research, and clinical education.

Patient Safety: Achieving a New Standard for Care



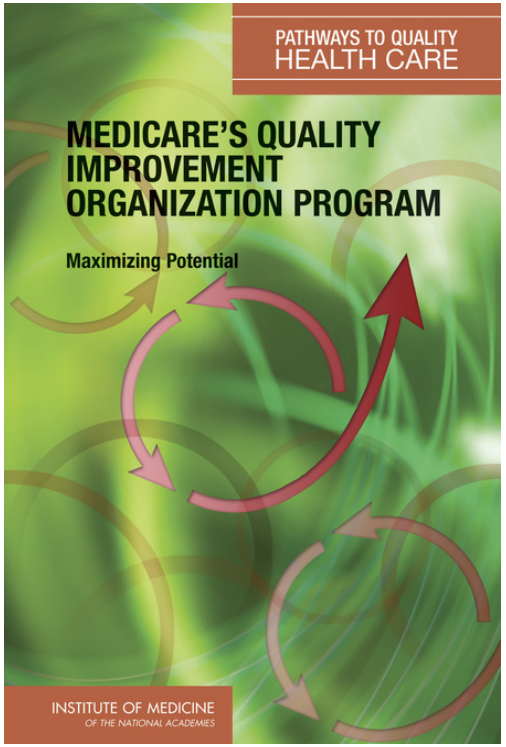
2004

Addresses key areas related to the establishment of a **national health information infrastructure**, including:

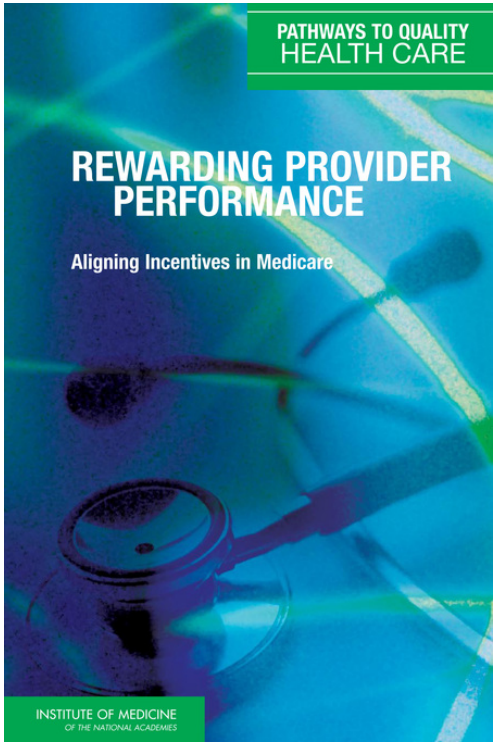
- a process for the ongoing promulgation of **data standards**;
- the status of current standards-setting activities in **health data interchange**, terminologies, and medical knowledge representation; as well as
- **the need for comprehensive patient safety programs in health care organizations**

Redesigning Health Insurance: Performance Measures, Quality Performance Improvement & payment

2005

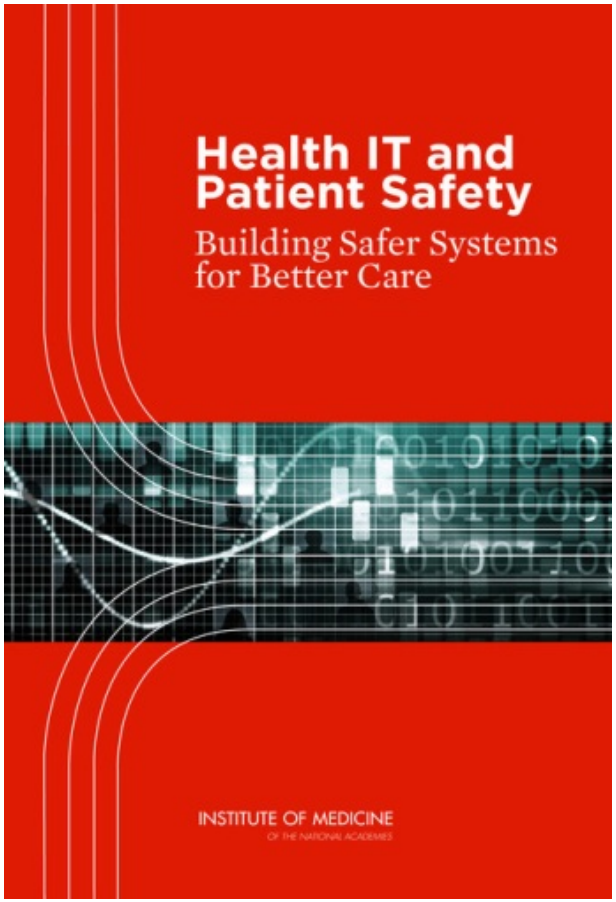


2006



2007

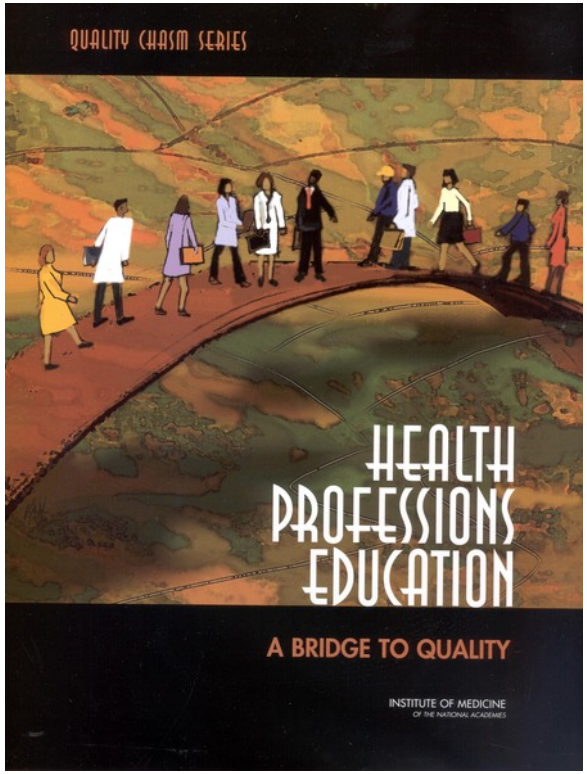
Health IT and Patient Safety



2011

- Evaluates health IT safety concerns and recommends ways that both government and the private sector can make patient care safer using health IT
- Calls for greater oversight by the public and private sectors to protect Americans from medical errors caused by health IT

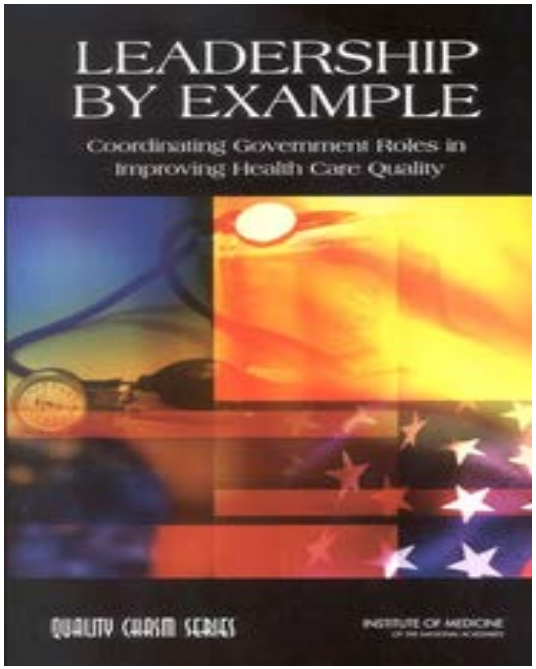
Health Professions Education: A Bridge to Quality

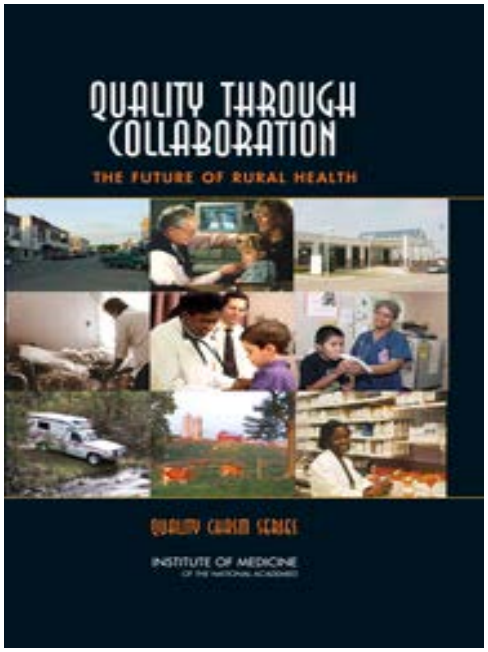


2004

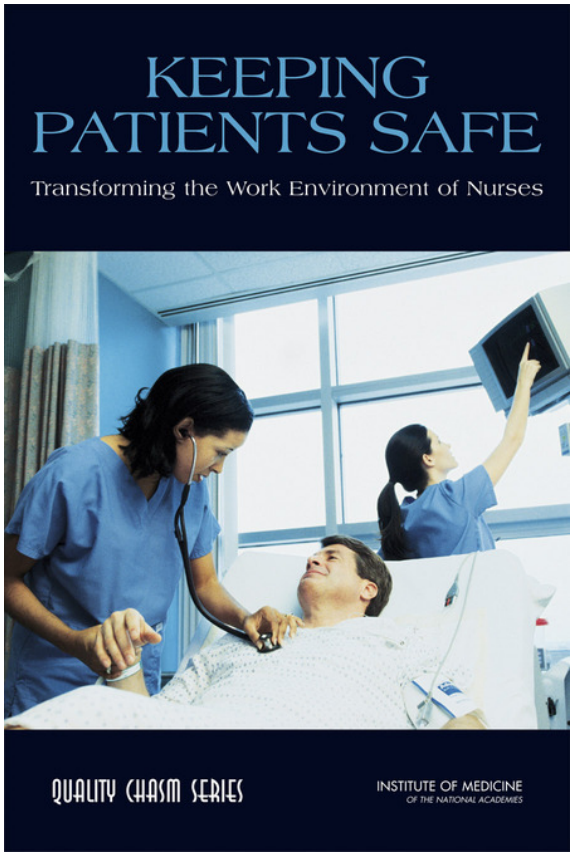
- Outlines **core competencies** for health professions education, which include patient-centered care, interdisciplinary teams, evidence-based practice, quality improvement, and informatics
- Recommends a mix of **approaches to health education improvement**, including those related to oversight processes, the training environment, research, public reporting, and leadership.

Importance of Leadership & Collaboration





Keeping Patients Safe: Transforming the Work Environment of Nurses



2004

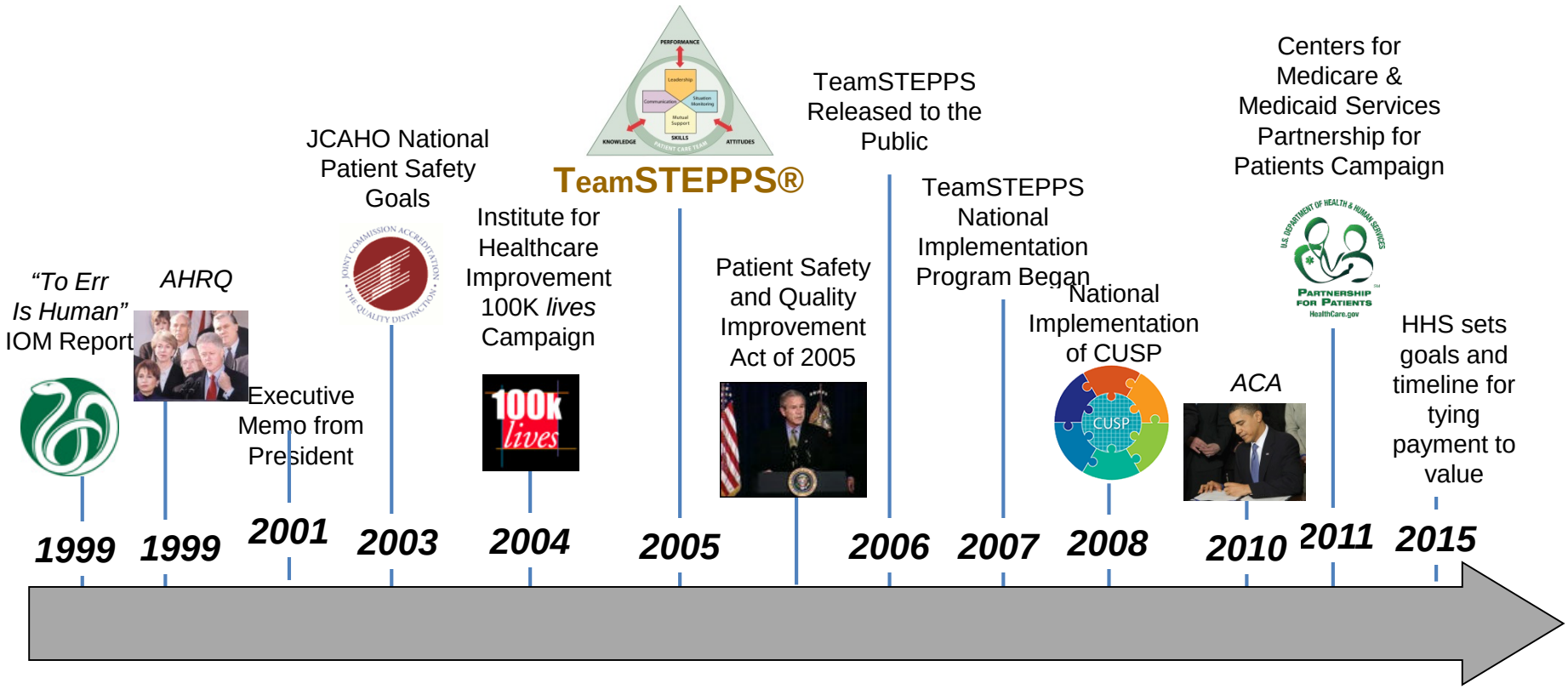
- Discusses the key aspects of the work environment for nurses and reviews the potential **improvements in working conditions** that are likely to have an impact on patient safety

IOM : Approach to Improving Safety and Quality

- Enhance the knowledge base about safety
- Identify and learn from errors
- Transparency & accountability
- Use of information technology
- Preparing the workforce
- Creating safety systems inside health care organizations
- Engaging patients & families.

The US National Journey

Patient Quality & Safety Movement



Impact on Healthcare

Many hospitals and healthcare systems have changed their procedures, processes, leadership and training practices. For example,

- elevating the role of the quality improvement and performance departments & centers
- encouraged staff to express concerns, identify deficiencies, and challenge the status quo- culture
- establishing or expanding hospitalist and intensivist programs
- using public performance reports as opportunities
- established standardized, systematic processes for problem-solving
- clinical guidelines, protocols, or "care maps" for specific conditions or procedures
- improved educational and training materials for clinical staff
- information technology that reduced medication errors and improved data collection

One Hundred Sixth Congress of the United States of America

AT THE FIRST SESSION

Begun and held at the City of Washington on Wednesday, the sixth day of January, one thousand nine hundred and ninety-nine

An Act

To amend title IX of the Public Health Service Act to revise and extend the Agency for Healthcare Policy and Research.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Healthcare Research and Quality Act of 1999".

SEC. 2. AMENDMENT TO THE PUBLIC HEALTH SERVICE ACT.

(a) IN GENERAL.—Title IX of the Public Health Service Act (42 U.S.C. 299 et seq.) is amended to read as follows:

"TITLE IX—AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

"PART A—ESTABLISHMENT AND GENERAL DUTIES

"SEC. 901. MISSION AND DUTIES.

"(a) IN GENERAL.—There is established within the Public Health Service an agency to be known as the Agency for Healthcare

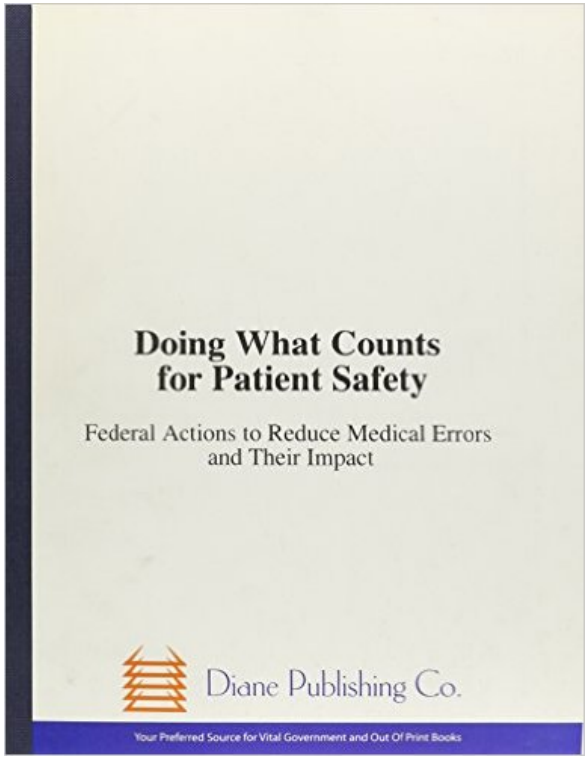
AHRQ

AHRQ's reauthorizing legislation specified that the Director of AHRQ "shall conduct and support research and build private-public partnerships to:

- Identify the causes of preventable health care errors and patient injury in health care delivery.
- Develop, demonstrate, and evaluate strategies for reducing errors and improving patient safety.
- Disseminate such effective strategies throughout the health care industry.

AHRQ: Setting a Direction

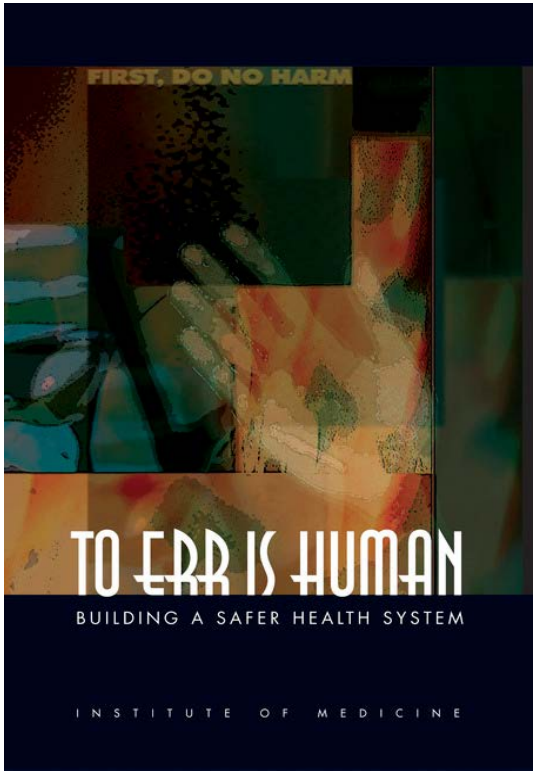
Doing What Counts for Patient Safety: Federal Actions to Reduce Medical Errors and Their Impact (2000)



Laid out a road map of more than 100 needed activities to:

- Create a national focus on reducing errors.
- Develop a knowledge base for learning about errors' causes and effective error prevention.
- Ensure accountability for safe health care delivery.
- Guarantee that patient safety practices are implemented.

To Err is Human: AHRQ Role in Patient Safety



1999

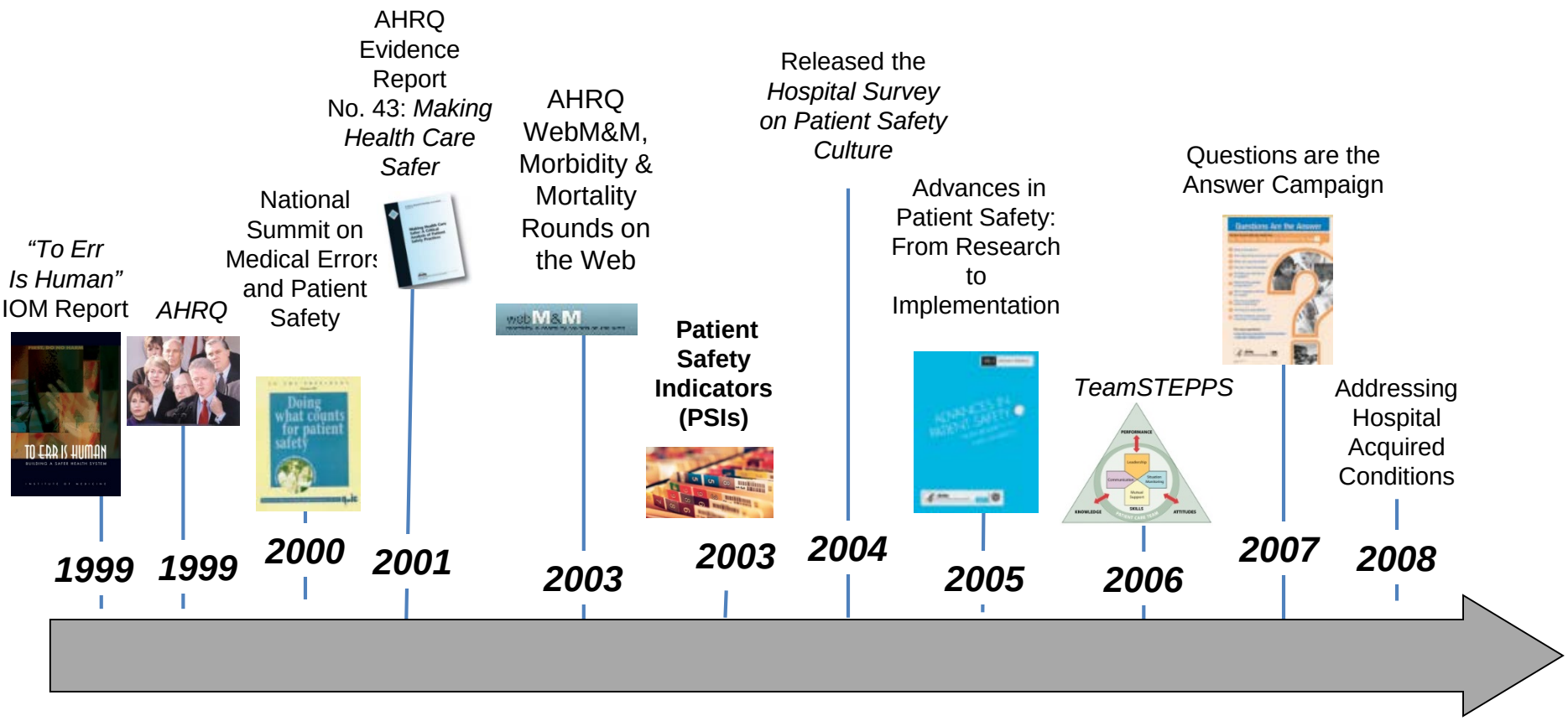
Congress should create a **Center for Patient Safety within AHRQ** that should

- **Set national goals** for patient safety, track progress, and issue an annual report on patient safety; and
- Develop an understanding of errors in health care by **developing a research agenda**, **funding** Centers of Excellence, **evaluating methods** for identifying and preventing errors, and **funding dissemination and communication** activities to improve patient safety

Center for Quality Improvement and Patient Safety

- 2001: AHRQ re-named its Center for Quality Measurement and Improvement as the Center for Quality Improvement and Patient Safety (CQuIPS).
- CQuIPS has primary responsibility for:
  - Evaluating methods for identifying and preventing medical errors.
  - Developing and testing measures and methods for evaluating the quality of care and enhancing patient safety.
  - Providing technical assistance and gathering information on the use of quality measures, consumer and patient information, and reporting on patient safety and the resulting effects.
  - Developing and disseminating an annual report on health care quality.
  - Representing the Agency in meetings concerned with measuring and evaluating the quality of care and enhancing patient safety.

AHRQ


"To Err Is Human" IOM Report
1999
AHRQ
1999
National Summit on Medical Errors and Patient Safety
2000
AHRQ Evidence Report No. 43: Making Health Care Safer
2001
AHRQ WebM&M, Morbidity & Mortality Rounds on the Web
2003
Patient Safety Indicators (PSIs)
2003
Released the Hospital Survey on Patient Safety Culture
2004
Advances in Patient Safety: From Research to Implementation
2005
TeamSTEPPS
2006
Questions are the Answer Campaign
2007
Addressing Hospital Acquired Conditions
2008

IOM & AHRQ: Approach to Improving Safety and Quality

- Enhance the knowledge base about safety
- Identify and learn from errors
- Transparency & accountability
- Use of information technology
- Preparing the workforce
- Creating safety systems inside health care organizations
- Engaging patients & families.

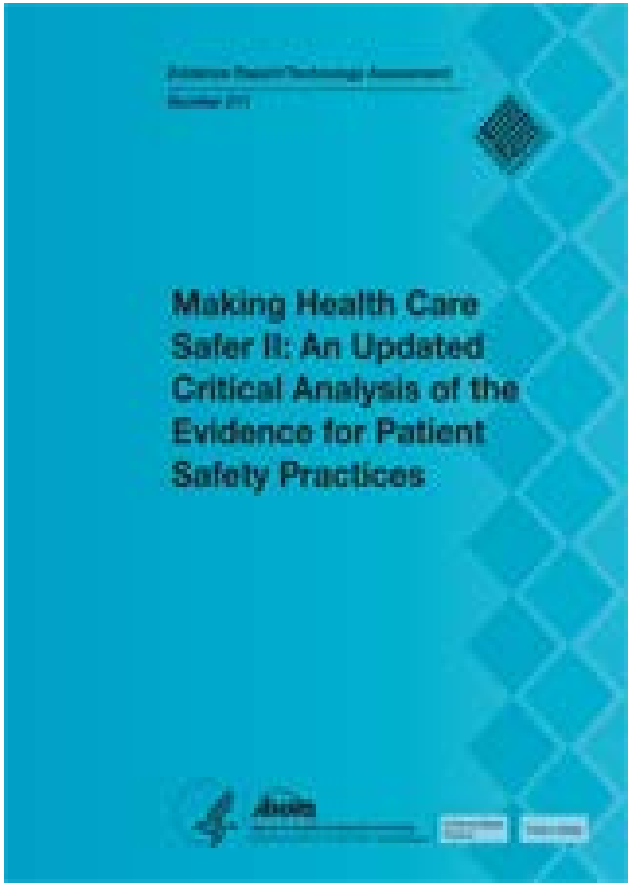
Enhance the Knowledge Base

AHRQ Research Agenda

- **National Summit** on Medical Errors and Patient Safety (2000)
  - focused on multistakeholder collaboration and input to be used by AHRQ in setting its patient safety research agenda

- By 2001, AHRQ formulated a **research agenda** focused on identifying available evidence based patient safety practices, gaining information on the requirements and effective use of medical error reporting systems, understanding the impact of working conditions and technology, and finding optimal methods for training professionals

AHRQ Research Agenda

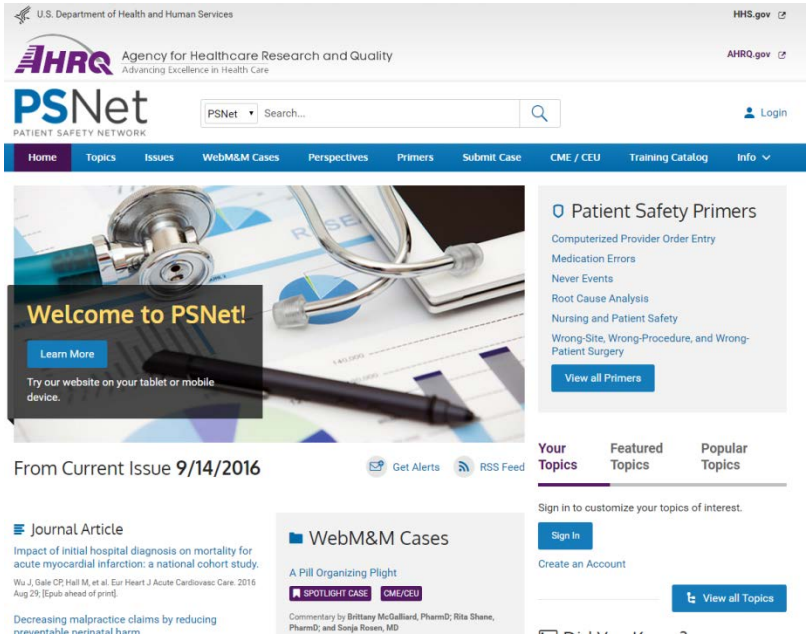


2001

- AHRQ enlisted researchers at the University of California, San Francisco (UCSF)—Stanford University Evidence-based Practice Center to review the published literature on the efficacy of various patient safety practices. This work was **published as AHRQ Evidence Report No. 43: Making Health Care Safer**

- Nearly 100 grants were awarded to lay the groundwork for reducing harm to patients

AHRQ Resource for Patient Safety Information



2005

- One-stop, online resource for patient safety information.
- Health care providers, researchers, administrators, and consumers can access this resource to learn about the latest news, research findings and publications, pertinent legislation, conferences, and tools related to patient safety.

Transparency and Accountability

AHRQ Patient Safety Indicators (2003)

Patient Safety Indicators

Provider-Level Indicators

- PSI 02 - Death rate in low-mortality diagnosis related groups (DRGs)
- PSI 03 - Pressure ulcer rate
- PSI 04 - Death rate among surgical inpatients with serious treatable conditions
- PSI 05 - Retained surgical item or unretrieved device fragment count
- PSI 06 - Iatrogenic pneumothorax rate
- PSI 07 - Central venous catheter-related blood stream infection rate
- PSI 08 - Postoperative hip fracture rate
- PSI 09 - Perioperative hemorrhage or hematoma rate
- PSI 10 - Postoperative physiologic and metabolic derangement rate
- PSI 11 - Postoperative respiratory failure rate
- PSI 12 - Perioperative pulmonary embolism or deep vein thrombosis rate
- PSI 13 - Postoperative sepsis rate
- PSI 14 - Postoperative wound dehiscence rate
- PSI 15 - Accidental puncture or laceration rate
- PSI 16 - Transfusion reaction count
- PSI 17 - Birth trauma rate – injury to neonate
- PSI 18 - Obstetric trauma rate – vaginal delivery with instrument
- PSI 19 - Obstetric trauma rate-vaginal delivery without instrument
- PSI 90 - Patient Safety for Selected Indicators

Area-Level Indicators

- PSI 21 - Retained surgical item or unretrieved device fragment rate
- PSI 22 - Iatrogenic pneumothorax rate
- PSI 23 - Central venous catheter-related blood stream infection rate
- PSI 24 - Postoperative wound dehiscence rate
- PSI 25 - Accidental puncture or laceration rate
- PSI 26 - Transfusion reaction rate
- PSI 27 - Postoperative hemorrhage or hematoma rate

AHRQ National Health Care Quality and Disparities Report

- Annual report to Congress
- Provides a comprehensive overview of
  - Quality of healthcare received by US population
  - Disparities in care experienced by different racial, socioeconomic, and ethnic groups
- Identifies strengths and weaknesses in:
  - Access to health care
  - Quality of health care
  - Priorities of National Quality Strategy

Use of Information Technology

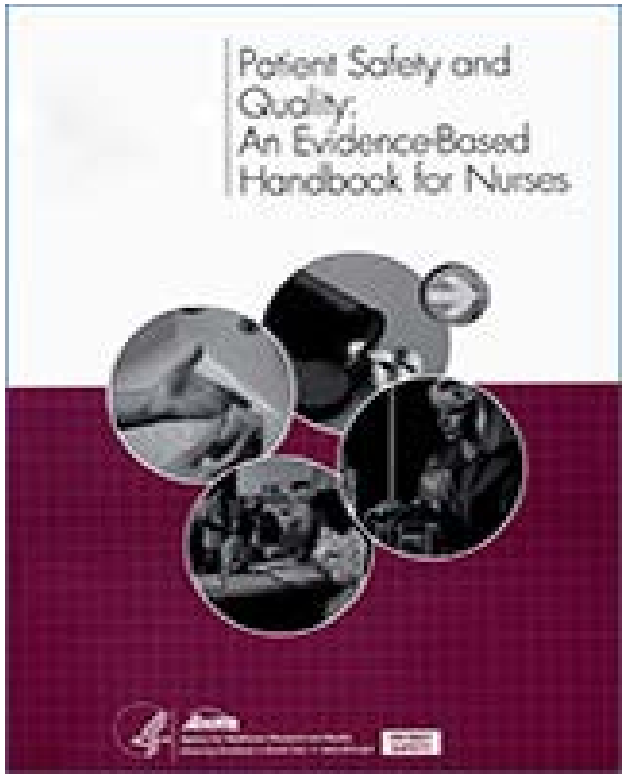
National Resource Center for Health IT

Preparing the Workforce

AHRQ Patient Safety Improvement Corps (PSIC) training programs

- In 2003, AHRQ partnered with the Department of Veterans Affairs' National Center for Patient Safety and began the first of four 9-month PSIC training programs
- Participants received training on tools and topics including analyzing root causes, analyzing health care failure modes and effects, applying human factors principles, assessing patient safety culture, and making a business case for patient safety.
- By the program's end, teams had been trained in every State, as well as the District of Columbia and Puerto Rico. PSIC graduates were, in turn, training their own personnel in patient safety principles acquired from the program

Patient Safety and Quality: A Handbook for Nurses



- In 2008, AHRQ teamed with the Robert Wood Johnson Foundation to develop and distribute an evidence based handbook for nurses

Creating safety systems inside health care organizations: Systems Approach to Quality and Safety

Hospital Survey on Patient Safety

Instructions

This survey asks for your opinions about patient safety issues, medical error, and event reporting in your hospital and will take about 10 to 15 minutes to complete.

If you do not wish to answer a question, or if a question does not apply to you, you may leave your answer blank.

- *An **"event"** is defined as any type of error, mistake, incident, accident, or deviation, regardless of whether or not it results in patient harm.*
- ***"Patient safety"** is defined as the avoidance and prevention of patient injuries or adverse events resulting from the processes of health care delivery.*

SECTION A: Your Work Area/Unit

In this survey, think of your "unit" as the work area, department, or clinical area of the hospital where you spend *most* of your work time or provide *most* of your clinical services.

What is your primary work area or unit in this hospital? Select ONE answer.

- ☐ a. Many different hospital units/No specific unit
- ☐ b. Medicine (non-surgical)
- ☐ c. Surgery
- ☐ d. Obstetrics
- ☐ e. Pediatrics
- ☐ f. Emergency department
- ☐ g. Intensive care unit (any type)
- ☐ h. Psychiatry/mental health
- ☐ i. Rehabilitation
- ☐ j. Pharmacy
- ☐ k. Laboratory
- ☐ l. Radiology
- ☐ m. Anesthesiology
- ☐ n. Other, please specify: _____

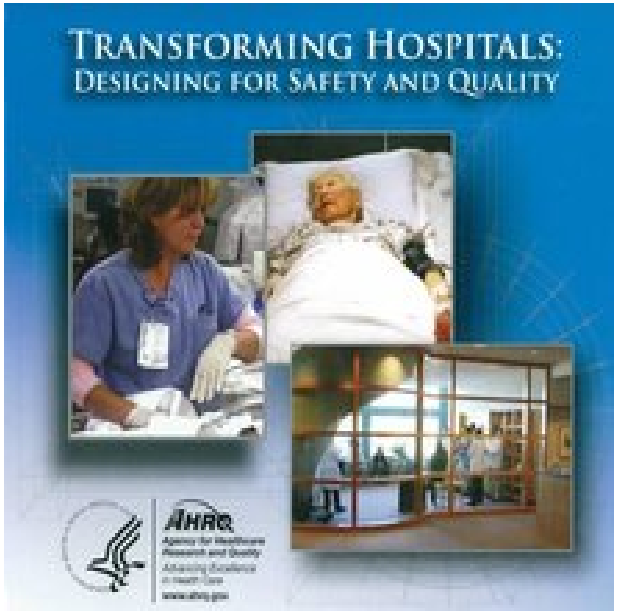
Please indicate your agreement or disagreement with the following statements about your work area/unit.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree

Re-Engineered Hospital Discharge Program (2008)

- Tool to help hospitals redesign the discharge process and curtail costly and unnecessary readmissions by ensuring that patients have the necessary information to recover at home
- Features a personalized instruction booklet and instructions for nurses to help patients understand after-hospital care instructions
- Additional funding led to the creation of a virtual nurse discharge advocate and a version of the tool adapted for patients with low health literacy

Designing Hospitals for Safety and Quality

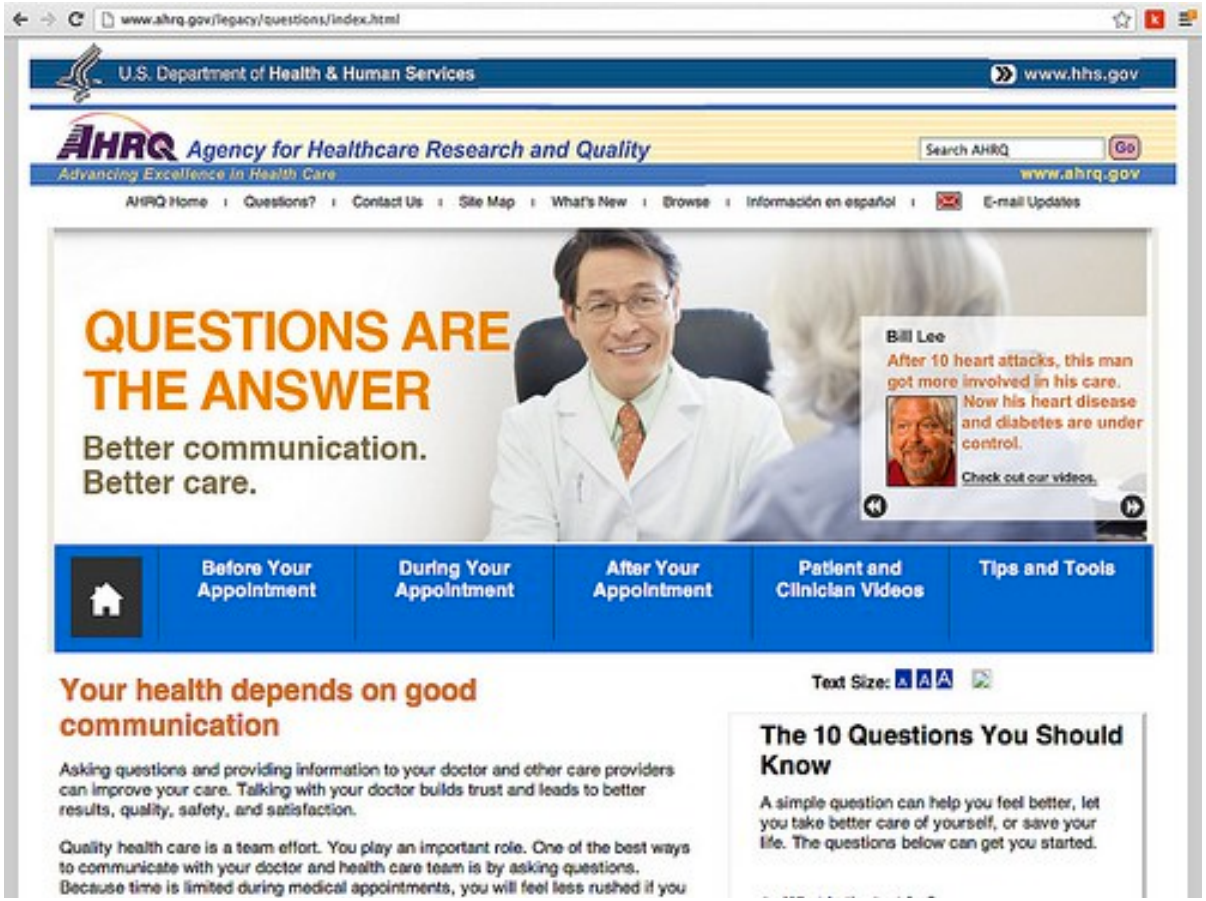


2007

- AHRQ released a DVD that illustrates how three hospitals incorporated **evidence-based design principles in their construction and renovation projects.**
- **Design principles** include better ventilation systems for pathogen control; standardized room layouts; convenient placement of hand-hygiene dispensers; and safer systems for lifting and transporting patients.

Engaging Patients and Families

Facilitating Communication: Questions are the Answer Campaign



Recent Trends

Patient Protection and Affordable Care Act (2010-present): Key Quality Provisions

- Created a National Quality Strategy
- Established a Center for Quality Improvement and Patient Safety
- Established the Patient Centered Outcomes Institute (PCORI)
- Created the Center for Medicare and Medicaid Innovation
- Requires public reporting on the quality of health insurance plans
- Requires additional reporting of patient data related to race, ethnicity, sex, and language
- Authorized numerous new payment and delivery models
  - Medicare's Hospital Readmissions/HAC Reduction Program
  - Hospital Value-Based Purchasing Program
  - Accountable Care Organizations
  - Medicare Physician Quality Reporting System
  - Medicare Advantage plan bonuses

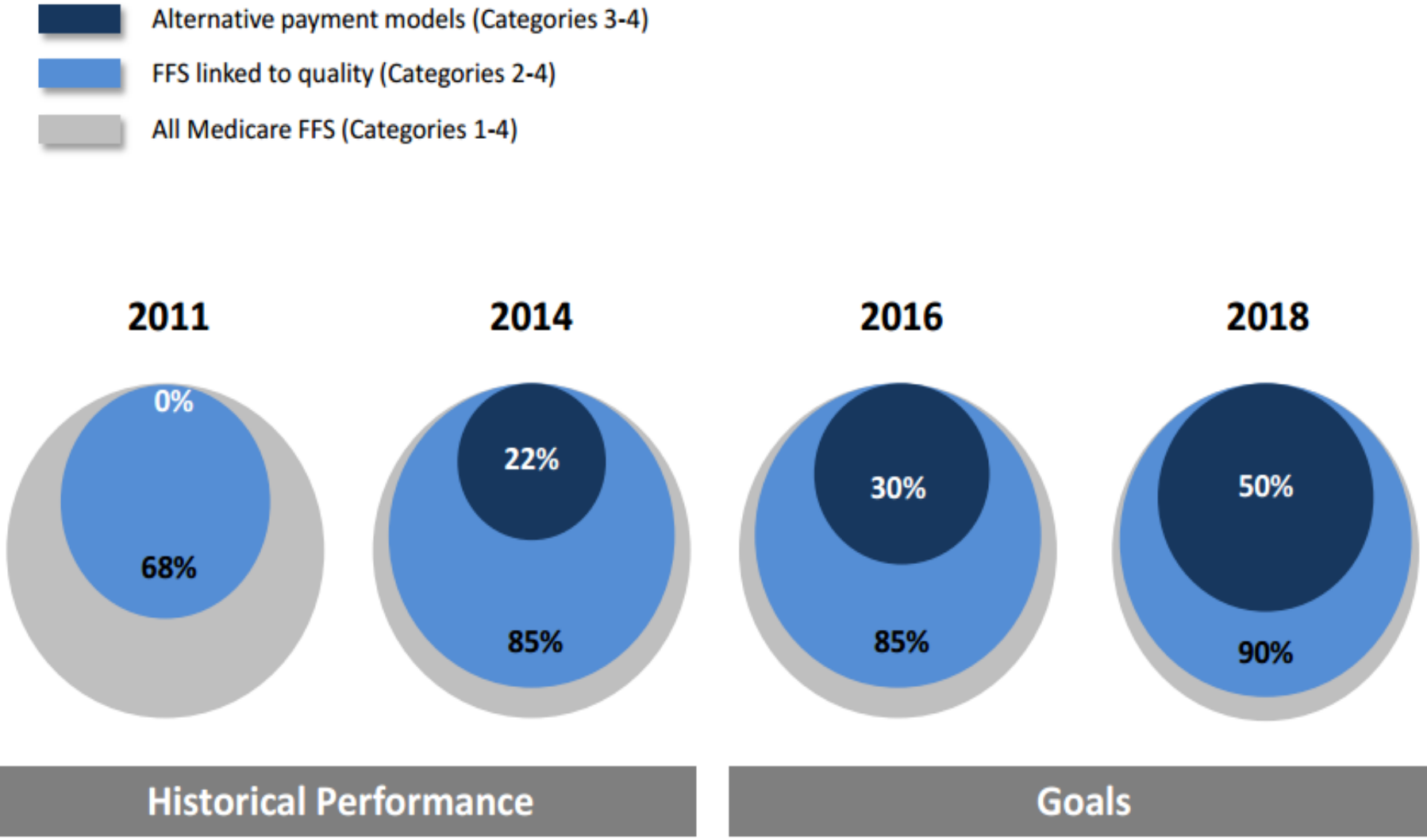
HHS

Better Care. Healthier People. Smarter Spending.

From current FFS to FFS linked to quality to APM to population based payment

	Payment Taxonomy Framework			
	Category 1: Fee for Service -No Link to Quality	Category 2: Fee for Service - Link to Quality	Category 3: Alternative Payment Models Built on Fee-for-Service Architecture	Category 4: Population-Based Payment
Medicare FFS	▪ Limited in Medicare fee-for-service ▪ Majority of Medicare payments now are linked to quality	▪ Hospital value-based purchasing ▪ Physician Value-Based Modifier ▪ Readmissions/Hospital Acquired Condition Reduction Program	▪ Accountable care organizations ▪ Medical homes ▪ Bundled payments ▪ Comprehensive primary care initiative ▪ Comprehensive ESRD ▪ Medicare-Medicaid Financial Alignment Initiative Fee-For-Service Model	▪ Eligible Pioneer accountable care organizations in years 3-5

HHS Value-Based Payment Goals



Are we doing any better?

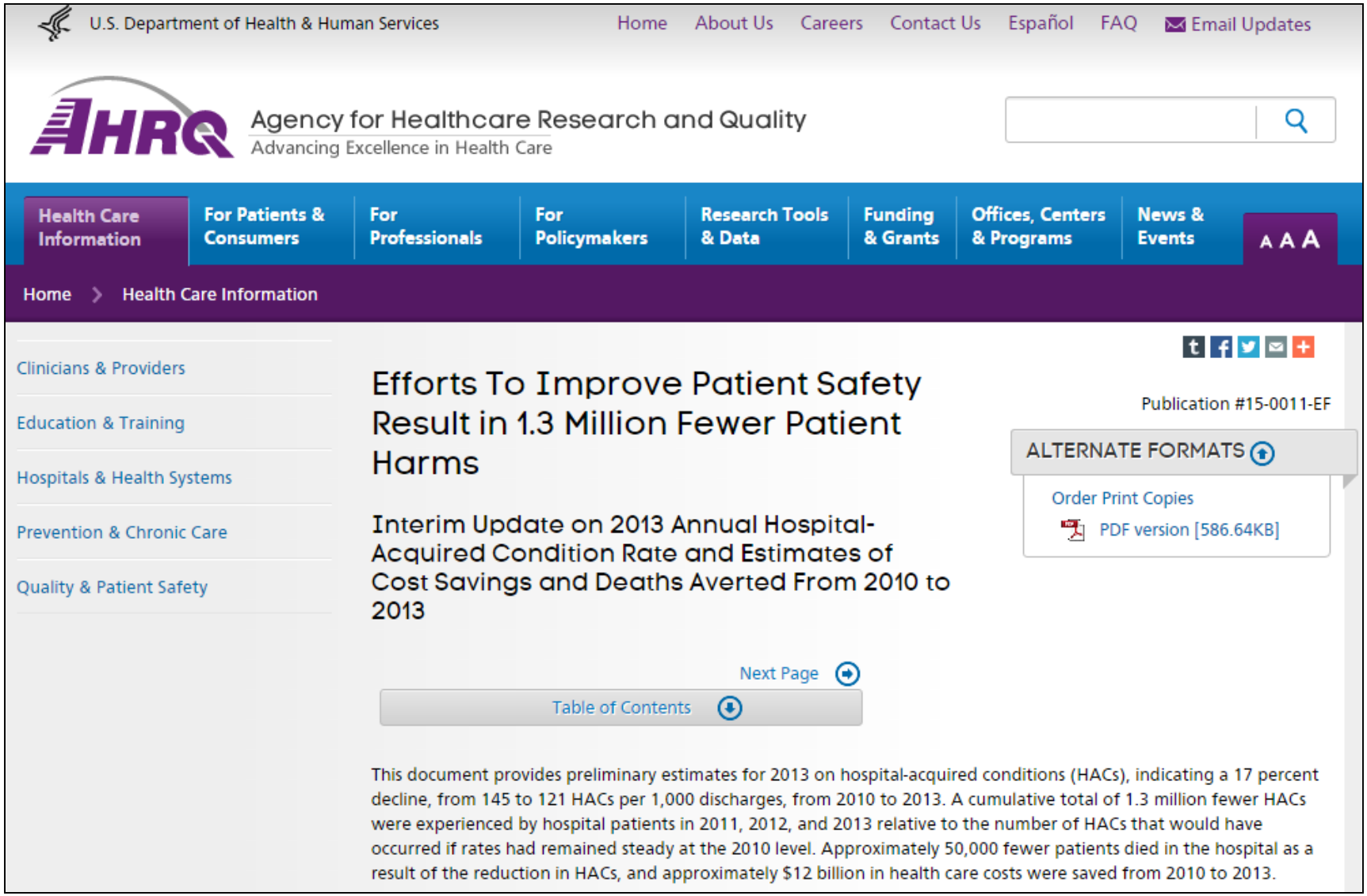

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Table of Contents
This document provides preliminary estimates for 2013 on hospital-acquired conditions (HACs), indicating a 17 percent decline, from 145 to 121 HACs per 1,000 discharges, from 2010 to 2013. A cumulative total of 1.3 million fewer HACs were experienced by hospital patients in 2011, 2012, and 2013 relative to the number of HACs that would have occurred if rates had remained steady at the 2010 level. Approximately 50,000 fewer patients died in the hospital as a result of the reduction in HACs, and approximately $12 billion in health care costs were saved from 2010 to 2013.

Are we doing any better?

- 1999 IOM: 98,000 people die each year from adverse events
- 2005: IHI launched first national campaign (100,000 Lives Campaign) and claimed to have saved an estimated 122,300 lives over 18 months

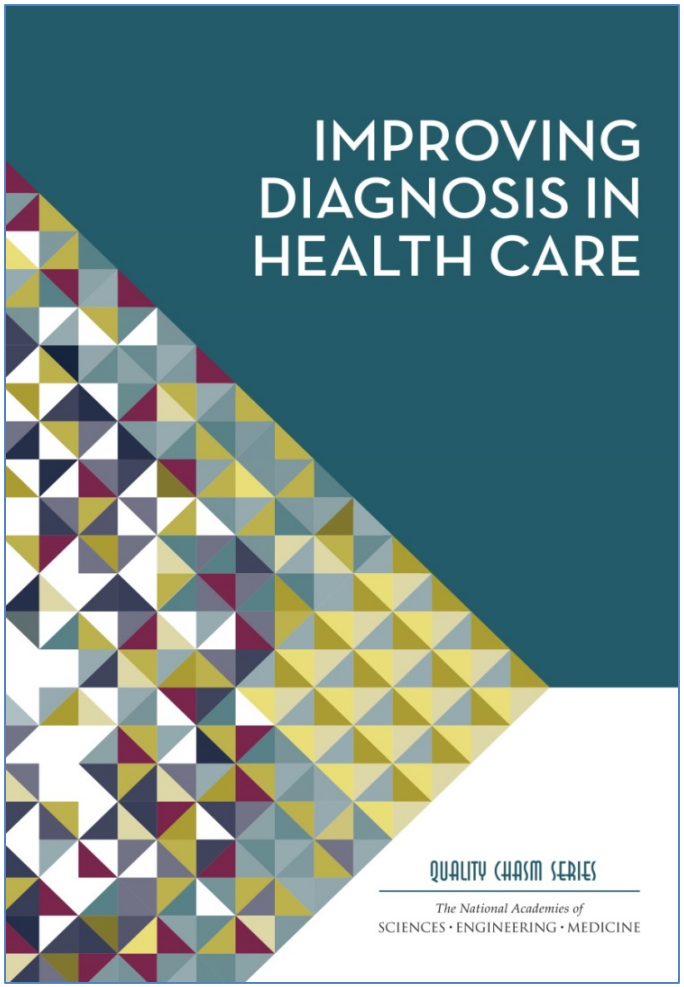
Hospital Acquired Conditions 2010-2014

- Interim estimates for 2014 show a sustained **17 percent decline** in hospital-acquired conditions (HACs) since 2010
- A cumulative total of **2.1 million fewer HACs** were experienced by hospital patients over the 4 years
- **Nearly 87,000 fewer patients died** in the hospital as a result of the reduction in HACs and that approximately **$19.8 billion** in health care costs were saved from 2010 to 2014

Adverse Drug Events	Pressure Ulcers	Catheter Associated Urinary Tract Infections	Surgical Site Infections	Falls
39.8% ↓	28.0% ↓	16.1% ↓	2.9% ↓	2.4% ↓

The IOM Quality Series: Improving Diagnosis

The failure to:
(a)establish an **accurate** and **timely** explanation of the patient's health problem(s); or
(b) **communicate** that explanation to the patient



" It is likely that most of us will experience at least one diagnostic error in our lifetime, sometimes with devastating consequences."

2015

Diagnostic Error: Magnitude of the Problem

- **12 million or 5 % U.S. adults** seeking outpatient care each year experience a diagnostic error. Half leads to harm.

Singh et al. (2014) estimated that approximately 12 million adults (or 1 in 20 adults) experience a diagnostic error each year;

- Postmortem examination research contribute to **approximately 10 percent of patient deaths.**
- Medical record reviews: diagnostic errors account for **6 to 17 percent of hospital adverse events**.
- **Diagnostic errors are the leading type of paid medical malpractice claims**
- Diagnostic errors can be costly - unnecessary office and hospital visits, wrong treatments, unnecessary tests and procedures, readmissions and deteriorating health status.

Study Charge

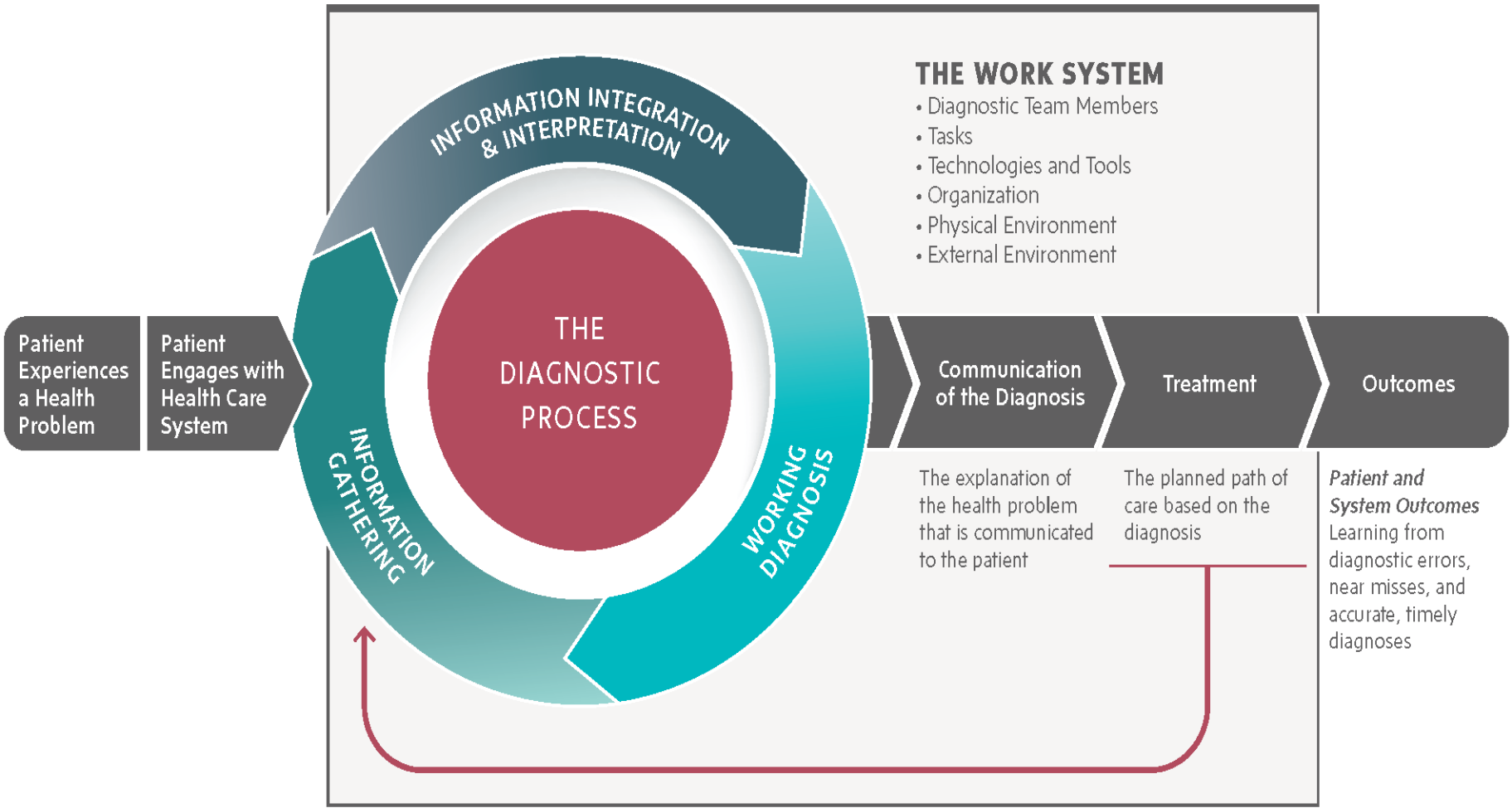
- **Evaluate** diagnostic error as a quality of care challenge

- **Examine** the epidemiology, burden of harm, economic costs of diagnostic error, and current efforts to address the problem

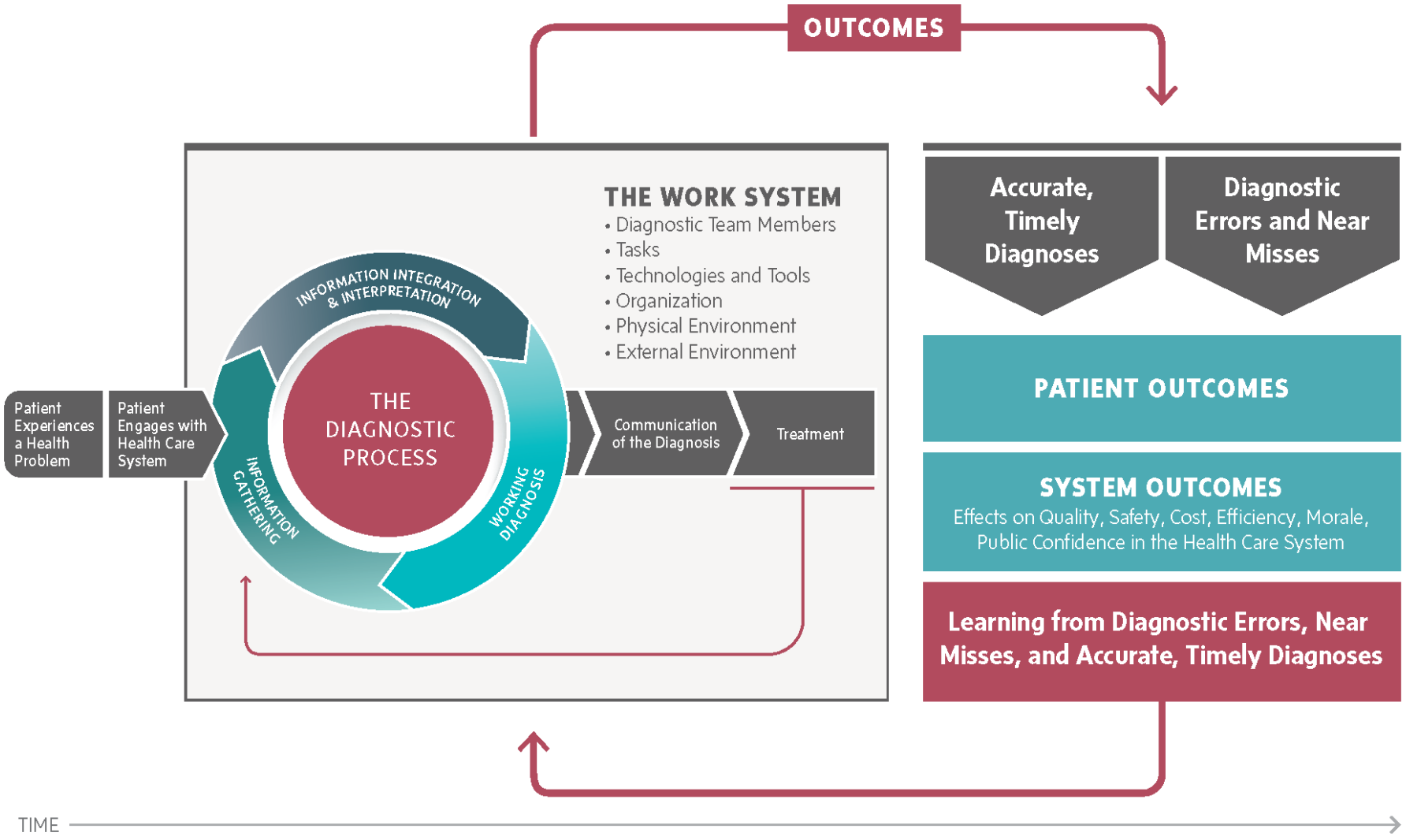
- **Propose** solutions and devise recommendations for stakeholders on topics such as:
  - Clarifying definitions
  - Education and cognitive processes
  - Culture, teamwork, and systems engineering
  - Health IT
  - Measurement
  - Research
  - Payment and medical liability

Where Failures in the Diagnostic Process Occur

- Failure of Engagement
- Failure in Information Gathering
- Failure in Information Integration
- Failure in Information Interpretation
- Failure to Establish an Explanation for the Health Problem
- Failure to Communicate the Explanation

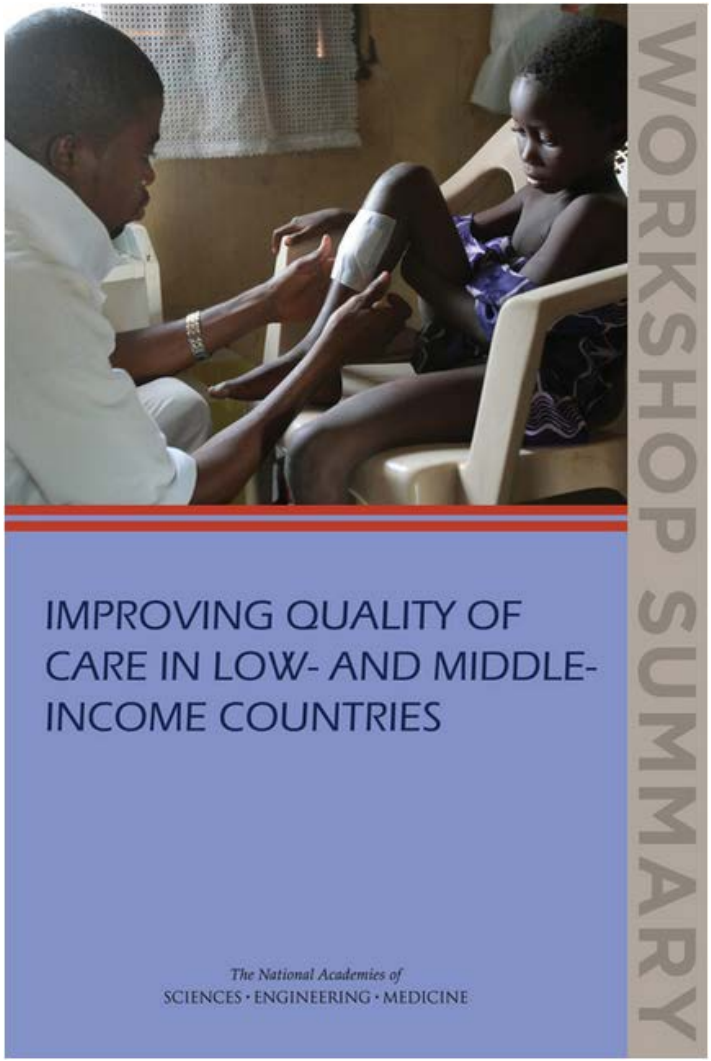


The Outcomes from the Diagnostic Process



Identifying and learning from diagnostic errors is important, but a sole focus on reducing diagnostic errors will not achieve the extensive change that is necessary.
A broader focus on improving diagnosis is warranted.

Universal Health Care: Need to Assure Quality



- Unsafe care causes **43 million injuries a year and the loss of 23 million disability-adjusted life years (DALYs),** about two-thirds of them in low- and middle-income countries (Jha et al., 2013)
- The probability of a patient receiving the **correct diagnosis** is, depending on other factors, in the range of **30 to 50 percent**
- The probability of a patient receiving **non-harmful treatment** found a likelihood of about **45 percent**

NAM Initiative:
Clinician Resilience & Wellbeing

- In the US, as many as 400 physicians are dying by suicide each year. (Andrew, 2016)
- A survey of 6880 US physicians assessing burnout and work life balance satisfaction
  - 54.4% Physicians experiencing at least 1 symptom of burnout in 2014.
  - Satisfaction with work life balance is 40.9% overall.
  - Importantly, these trends were not apparent in the general population.
- Furthermore, physician rates of depression or suicidal ideation remain alarmingly high – around 39%.
- A 2007 study that 24 percent of ICU nurses tested positive for symptoms of post-traumatic stress disorder (Mealer et al, 2007)

NAM Initiative:

- On July 7, we hosted a meeting consisting of about 30 clinician organizations
- Launch **Action Collaborative**:
  - To develop broad recognition of the magnitude of the problem,
  - To provide a place to discuss potential solutions,
  - To exchange best practices and lessons learned from health organizations as well as from other industries.
  - To involve all stakeholders to develop collective actions
  - To undertake consensus study

The Journey Continues

Thank you