



The Role of Research in Osteopathic Medical Education

Helen Burstin, MD, MPH
Director, Center for Primary Care, Prevention and
Clinical Partnerships
Agency for Healthcare Research and Quality

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Overview

- **About AHRQ: The Evidence Agency**
- Improving Quality and Reducing Disparities
- Medical Education Research
- Opportunities and Challenges



New AHRQ Mission Statement

To improve the quality, safety, efficiency, and effectiveness of health care for all Americans



AHRQ Research Focus: How it Differs

- Patient-centered, not disease-specific
- Dual Focus -- Services + Delivery Systems
Effectiveness research focuses on actual daily practice, not ideal situations (“efficacy”)
- AHRQ mission includes production *and* use of evidence-based information



Example: Diabetes

- NIH -- develops and tests interventions that cure or prevent disease (what can work?)
- CDC -- evaluates health behaviors; tests community interventions, e.g., programs to increase exercise, improve diet (broad population focus)
- AHRQ -- develops evidence to help clinicians and patients select the best interventions; evaluates quality improvement efforts (what does work?)

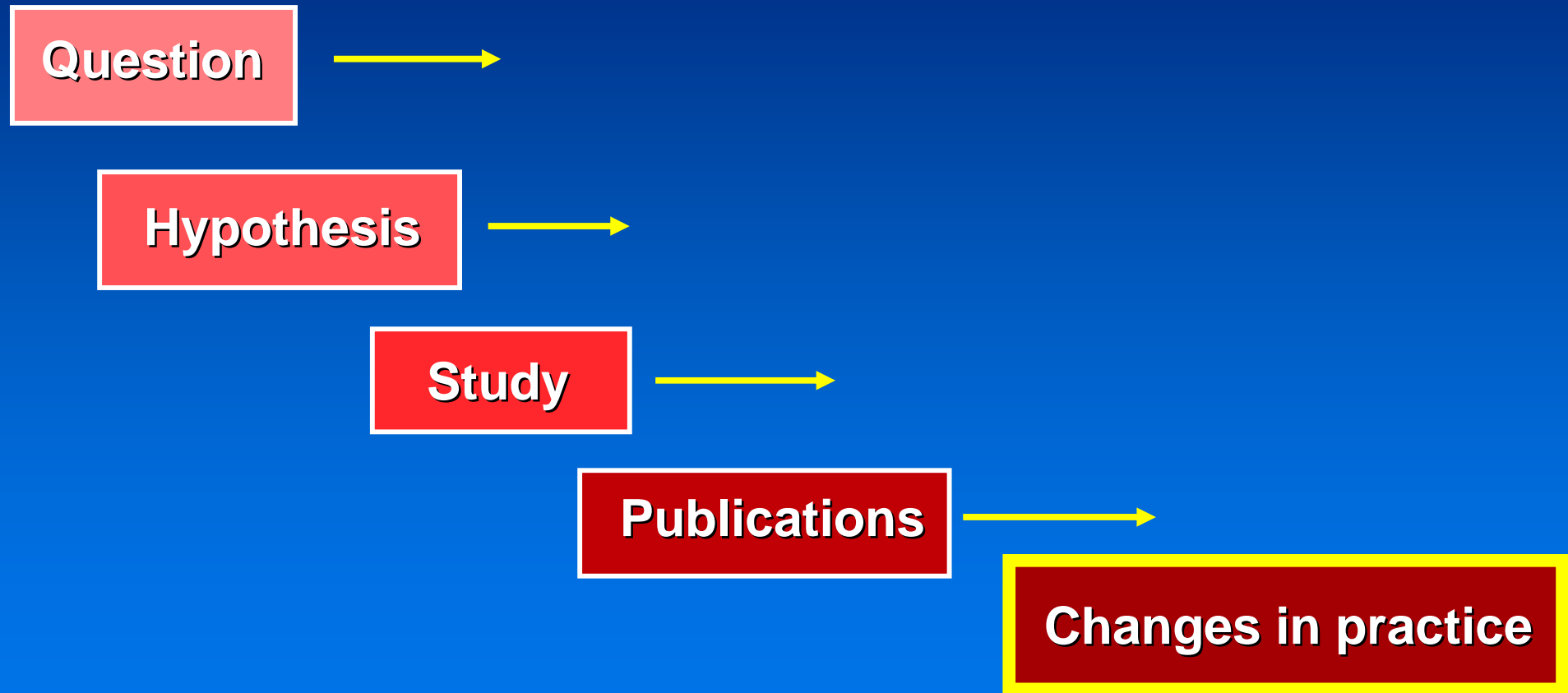
AHRQ Research and Knowledge Transfer

- Building the knowledge base:
 - The Effectiveness Question: What works?
 - Clinical
 - Organizational
 - How do we get people/systems/policymakers to do or use what works?
- How do we support the widespread implementation of what works?
- How do we sustain evidence based practice?

Knowledge Transfer Strategies

- Involving Users in Research Cycle
- Partnering for Translation and Dissemination
- Partnering for Implementation and Evaluation
- Research Networks
- Research Collaboratives
- Focus on Results
 - Measuring impact
 - Systematic evaluations

Implementation of Research Findings: Debunked Assumption



This is Not a New Problem: The Case of Scurvy

- 1601-- Lancaster shows that lemon juice supplement eliminates scurvy among sailors
- 1747-- Lind shows that citrus juice supplement eliminates scurvy
- 1795 -- (194 years after discovery) British Navy implements citrus juice supplement

Diffusion of knowledge

Clinical Procedure	Landmark Trial	Current rate of use
Flu Vaccine	1968	64% (2000)
Pneumococcal Vaccine	1977	53% (2000)
Diabetic Eye Exam	1981	48.1% (2000)
Mammography	1982	75.5% (2001)
Cholesterol Screening	1984	69.1% (1999)

Balas EA, Boren SA., Managing Clinical Knowledge for Health Care Improvement. Yearbook of Medical Informatics 2000.



Crossing the *Quality Chasm*

- There are serious problems in quality
 - *Between the health care we have and the care we could have lies not just a gap but a chasm*
- Recommendation: Develop strategies to restructure clinical education to fit 21st century health care; assess implications of change

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RAND Study: Quality of Health Care Often Not Optimal

Patients' care often deficient, study says.

Proper treatment given half the time.

On average, doctors provide appropriate health care only half the time, a landmark study of adults in 12 U.S. metropolitan areas suggests.

**Medical Care
Often Not
Optimal**

**Failure to Treat Patients
Fully Spans Range of
What Is Expected of
Physicians and Nurses**

**Study: U.S.
Doctors are not
following the
guidelines for
ordinary
illnesses**

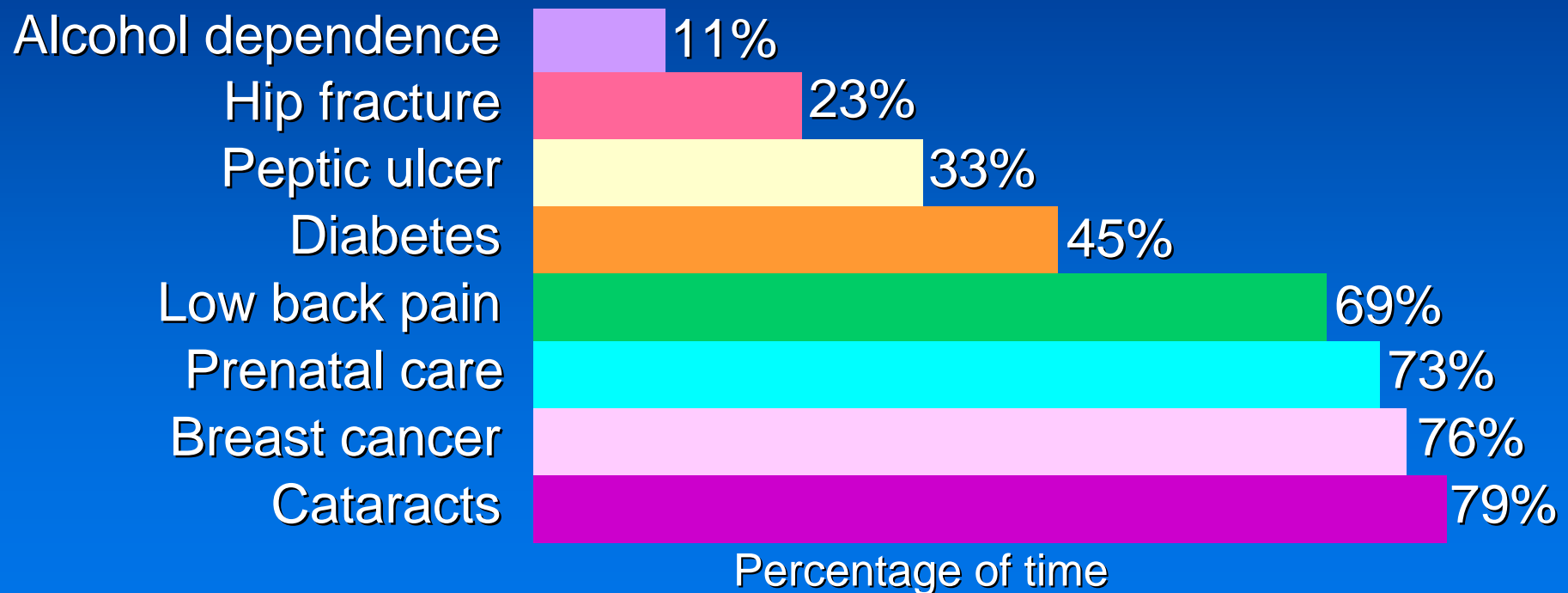
**Medical errors corrode
quality of healthcare system**

The American healthcare system, often touted as a cutting-edge leader in the world, suddenly finds itself mired in serious questions about the ability of its hospitals and doctors to deliver quality care to millions.

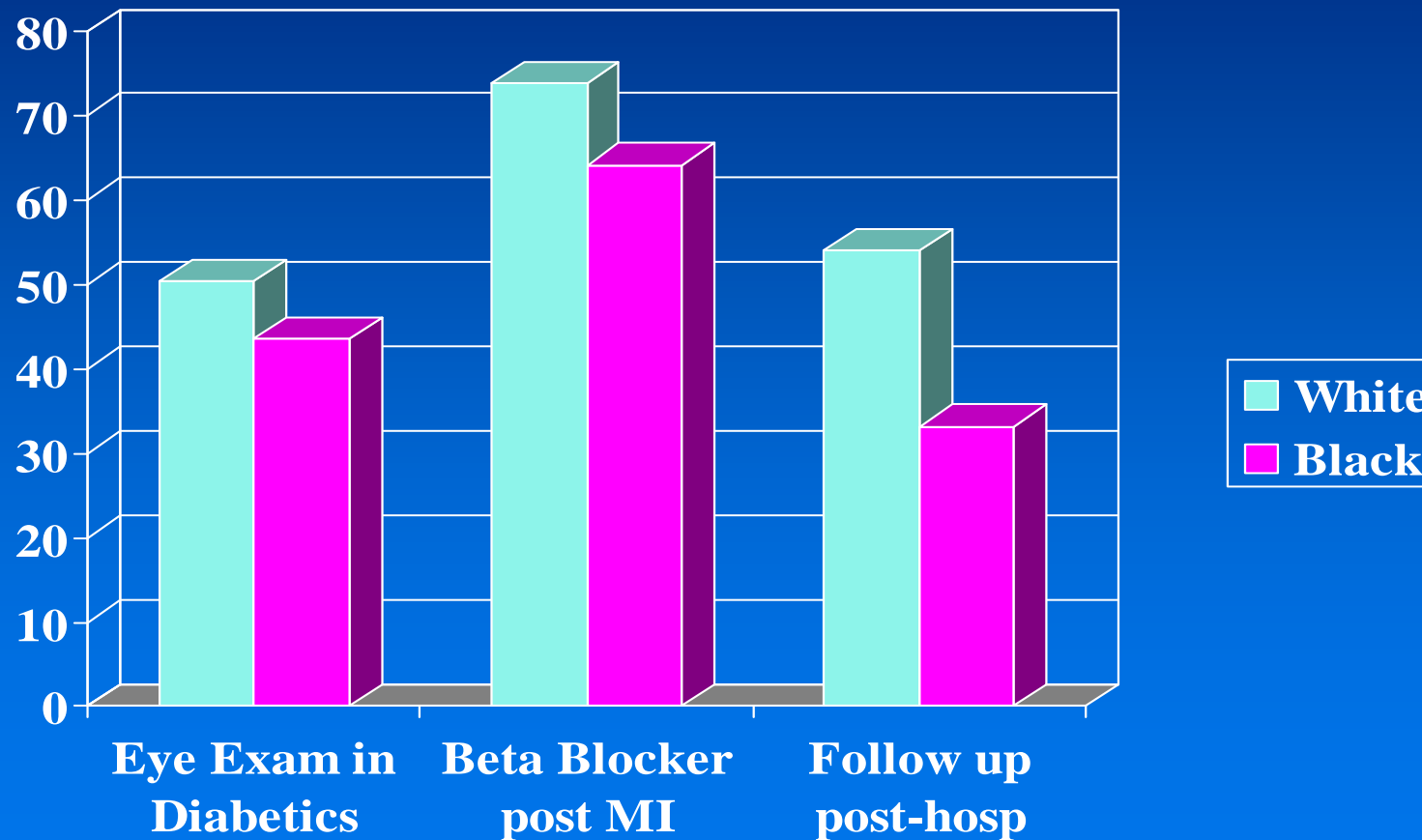


RAND Study: Quality of Health Care Often Not Optimal

- Doctors provide appropriate health care only about half the time



Disparities in Quality of Care for Medicare Enrollees



Schneider et al. JAMA 2002



Healthcare Research and Quality Act (PL. 106-129)

- “Beginning in fiscal year 2003, the Secretary, acting through the Director, shall submit to Congress an annual report on national trends in the quality of health care provided to the American people.”
- Annual report to the Congress on “prevailing disparities in health care delivery as it relates to racial factors and socioeconomic factors in priority populations.”

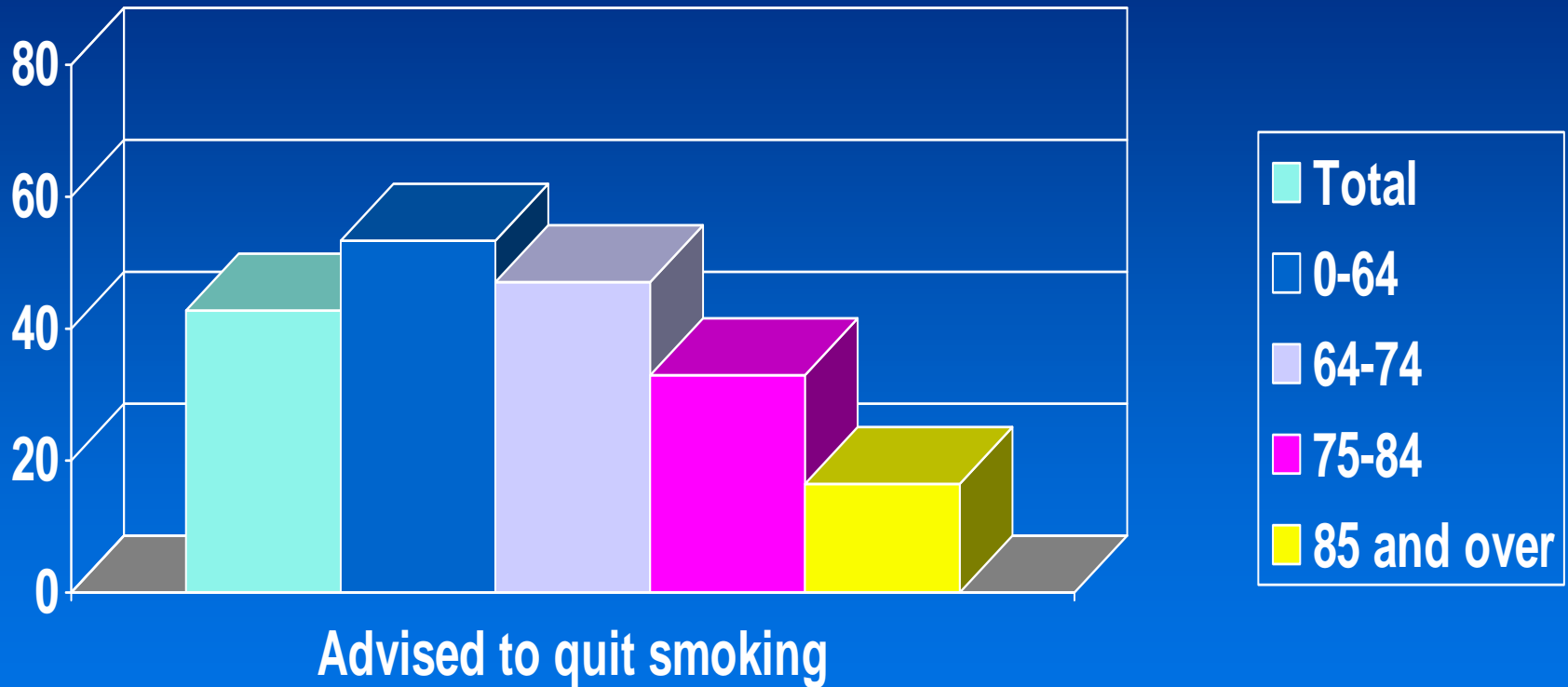


NHQR: Missed Opportunities

- Only **20.9%** of patients with diabetes receive all recommended tests
- 90% of adults are screened for high blood pressure – but only **25%** are controlled
- Nearly **1/3** of adults and children with asthma do **NOT** receive effective Rx
- Almost **20%** of persons with a usual source of care report that they are **not** asked about medications to prevent interactions



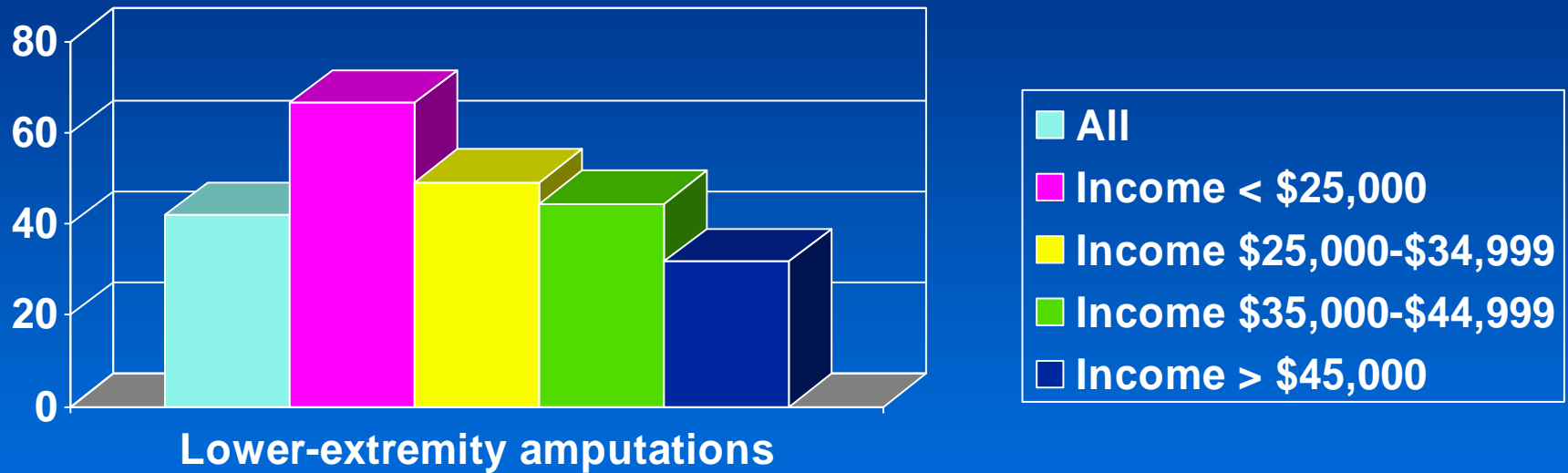
% of heart attack patients advised to quit smoking while hospitalized



CMS, QIO, 2000-2001

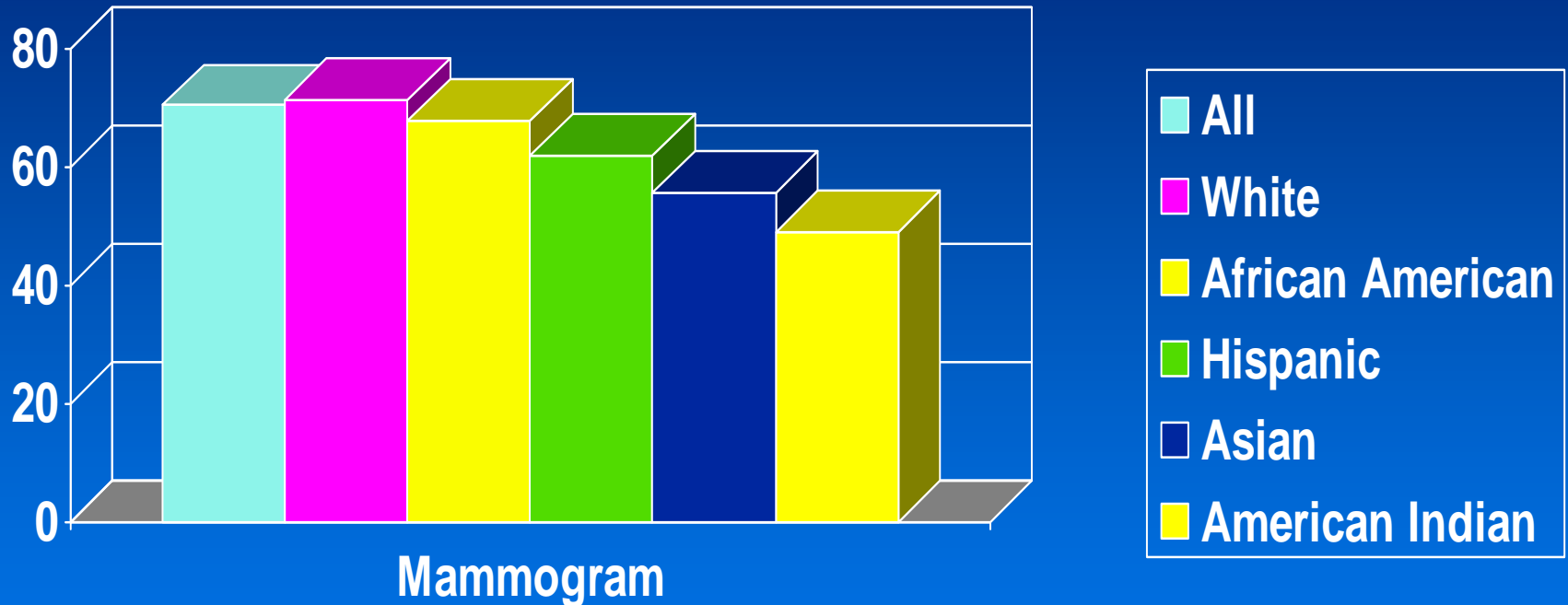


Lower-extremity amputations for adults with diabetes per 100,000 population



* HCUP, 2000

Mammograms within 2 years, women age 40 and over



NHIS, 2000



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Setting the Context: Medical Education

- What is the goal of medical education?
 - *To produce physicians who deliver high quality care*

- “The quality of care that the public receives is determined to some extent by the quality of medical education students and residents receive.” – Commonwealth Report 2002

Medical Education Research

- What has been the state of medical education research?
- Authority for medical education historically resides in profession
- Intrinsic capacity to self-regulate

Lack of patient outcomes in medical education research

- Review of 600 research articles published in medical education journals (1996-98)
- Only 4 measured clinical outcomes of patients
- Half measured trainee performance
- 34% measured trainee satisfaction

Prystowsky and Bordage. Med Ed 2001; 35.



Medical Education Research

- Past 30 years have focused on:
 - Basic research on reasoning
 - Use of knowledge
 - Problem based learning
 - Performance assessment (OSCE, std patients)
 - Provision of continuing education

Norman, G. BMJ 2002;324



Lack of patient outcomes in medical education research

- Call for greater link between practitioner performance and education
- “The fundamental mission of medical education is to educate trainees to care for patients. Accordingly, it behooves medical education researchers to evaluate more fully the effects of medical education on the entire spectrum of participants and outcomes.”

Commonwealth Report 2002

- Principle: Academic health centers should be held accountable for their performance in educating the nation's physicians.
- Finding: The available data are insufficient to judge the performance of academic health centers in discharging their education responsibilities beyond establishing a minimum level of competency.



Why haven't we studied patient outcomes in medical education?

- Focus on undergraduate education
- Students able to overcome educational interventions
- Not able to conduct randomized, blinded trials
- No reliable data on outcomes
- No money for research

Why we should study medical education outcomes

- Medicare is largest supporter of graduate medical education
 - \$7.8 billion in 2000
 - >100,000 medical residents in training
- Over 75% of medical schools receive public subsidies
 - At least \$2 billion
- Better available methodology and data



Why we should study medical education outcomes

- Accountability in medical education
- “American public, policymakers, and private health care managers have a pressing stake in the health of our nation’s medical education enterprise.”
- Government already involved in licensing, financing

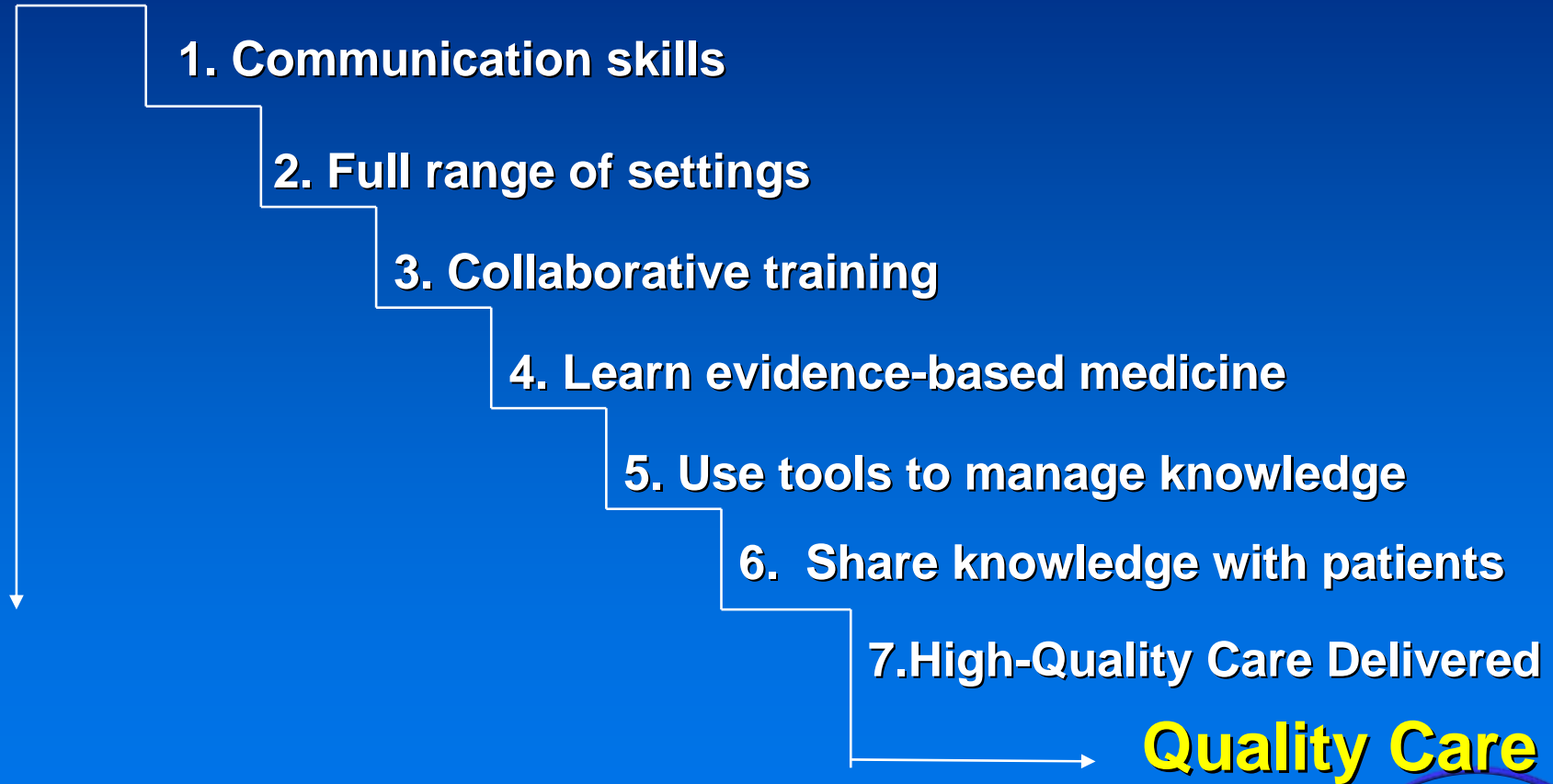
Past and current efforts

- Expert meetings:
 - 1993 BHPPr-AAMC agenda setting conference
 - 2001 AHRQ-HRSA co-sponsored expert meeting
- ACGME Outcome Project – Competencies:
 - Patient care
 - Medical knowledge
 - Interpersonal and communication skills
 - Professionalism
 - Practice-based learning and improvement
 - Systems-based practice



Voltage Drops to Quality

Health Professions Training



Role of quality improvement

- How do physicians learn about CQI?
- What is effect of medical education upon
 - Ability to change and adapt?
 - Ability to improve practice?
- Do physicians trained in one system bring those skills to another system?

Role of quality improvement

- Medical education research needs to demonstrate that trainees
 - Can become lifelong learners
 - Ability to identify inadequacies
 - Obtain new knowledge and skills
 - Translate knowledge into care improvement

Theoretical Model

- Describes continuum of education
- Contribution of education to physician development
 - Attitudes
 - Skills
 - Knowledge
- Interaction with health care system to produce outcomes

Evidence Based
Medicine

Professional
Workforce

Medical Education

UME → GME → CME

Intermediate Outcomes

Physicians'
Knowledge - Skills - Behaviors

Patient Outcomes

Safe-Timely-Patient-centered
Effective-Efficient-Equitable

Information
Technology

Payment
systems

Health Care System





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Medical Education

- Describes continuum of education
- UME – knowledge-focused
- GME – apprenticeship, better differentiated
- CME – discrete educational interventions

- Does GME trump UME?

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Health Care System



Intermediate Outcomes

- Bulk of medical education research
- Knowledge Testing
 - Board certification
 - Skills testing
- Need evidence about link between these and clinical outcomes

Intermediate Outcomes

- Examples
 - ACGME core competencies
 - OSCEs
- Skills and behaviors
 - Practice guidelines
 - Counseling
 - Shared decision-making

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Patient Outcomes

- Finding appropriate measures
 - Safe
 - Effective
 - Patient-centered
 - Timely
 - Efficient
 - Equitable

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Health Care System



Health Care System Factors

- Evidence-based medicine
 - Information technology
 - Professional workforce
 - Payment systems
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- All facilitate and modulate care delivery

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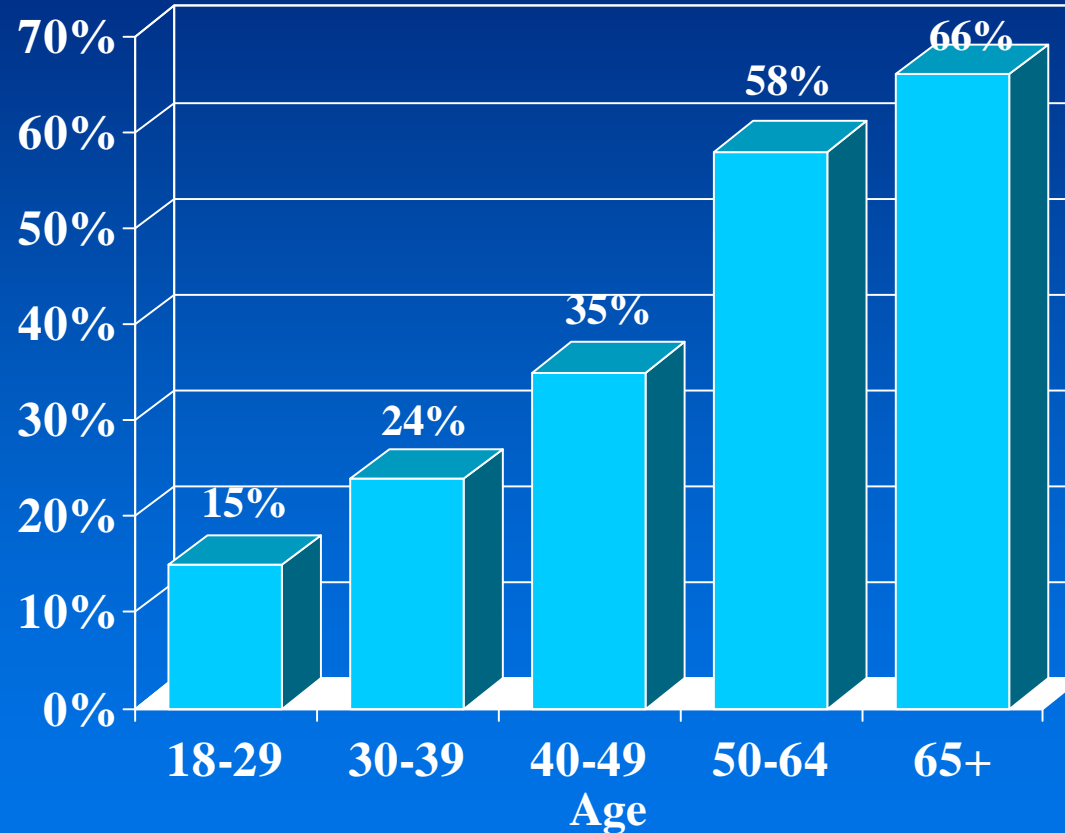
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How has practice changed?



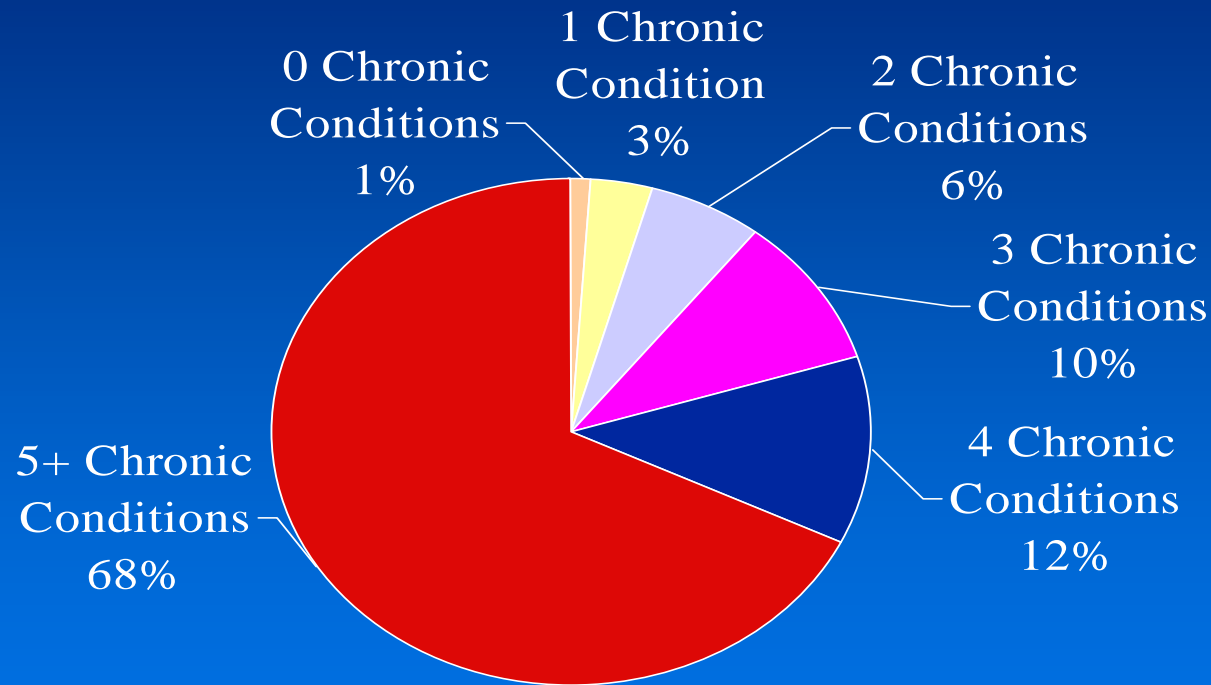
Percent of Americans Saying “I Have A Chronic Condition”



Chronic Illness and Caregiving Survey, Harris 2000



Beneficiaries With 5 or More Chronic Conditions Account for Two-Thirds of Medicare Spending

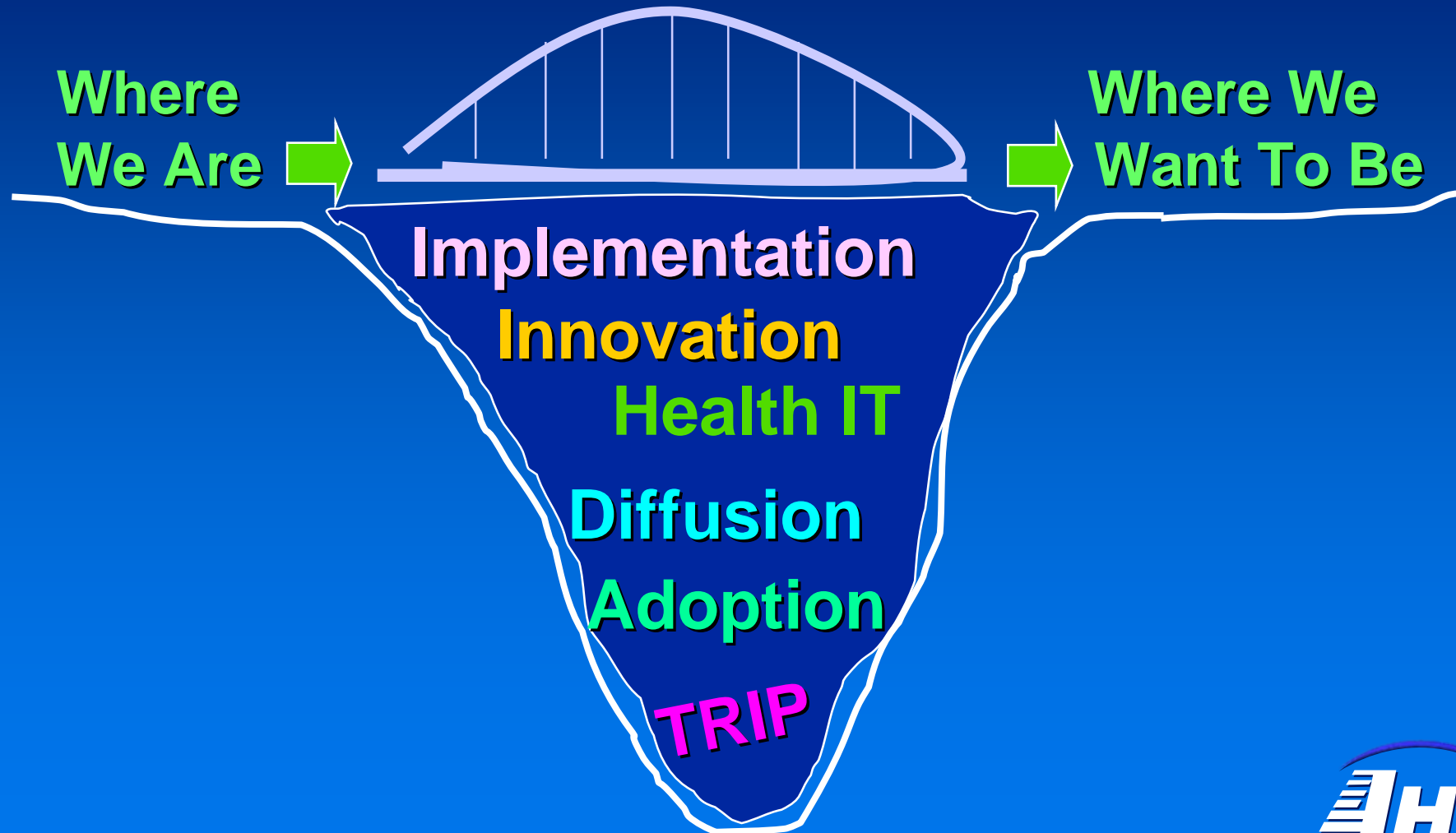


Source: Medicare 5% Sample, 2001

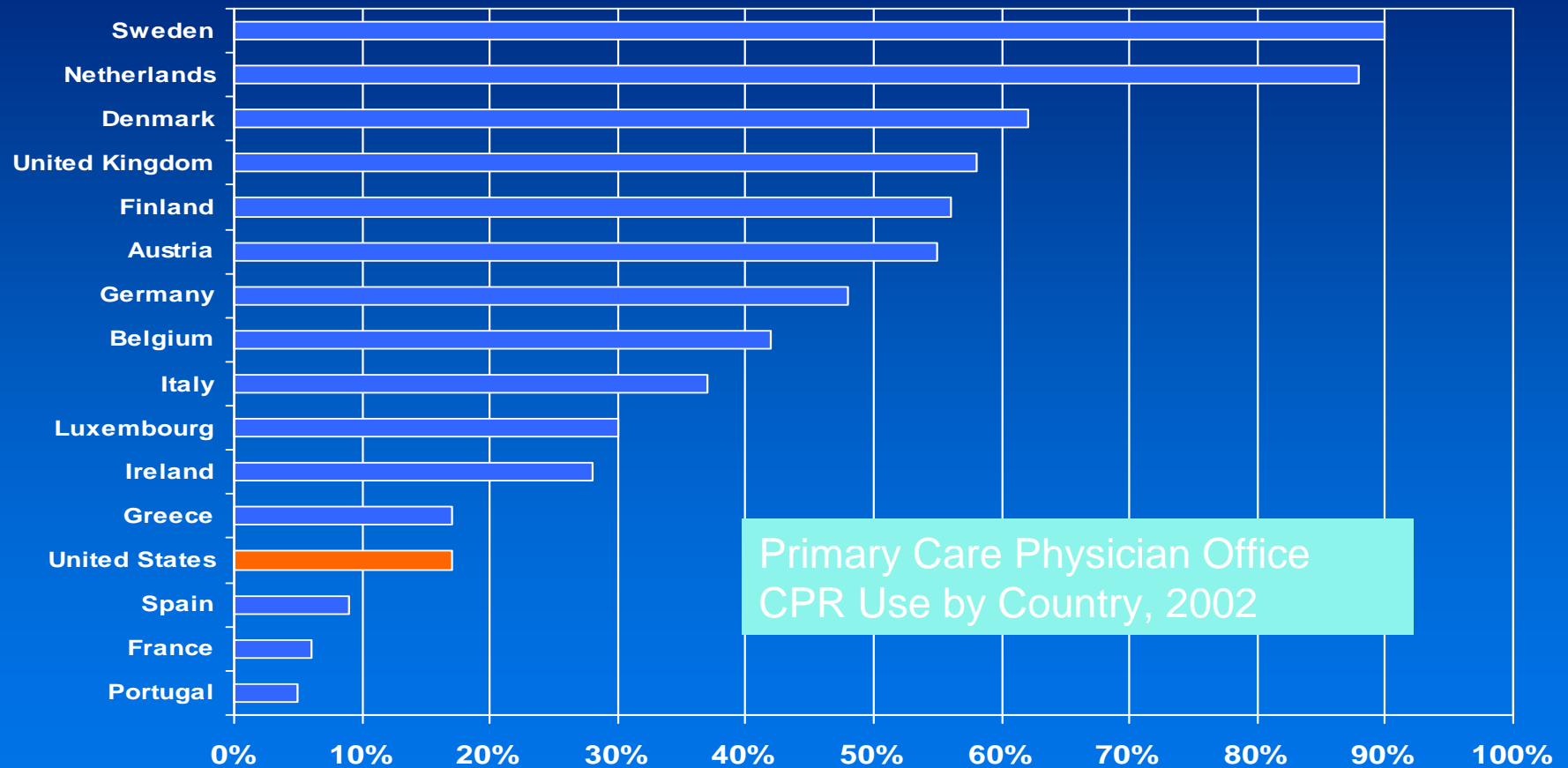
Gerry Anderson, JHU



Bridging the Quality Chasm



The "CPR Adoption Gap": The United States Versus Others



Primary Care Physician Office
CPR Use by Country, 2002



Source: "European Physicians Especially in Sweden, Netherlands, and Denmark, Lead U.S. in Use of Electronic Medical Records." [Harris Interactive Health Care News 2\(16\)](#).

**“We have wonderful technology,
but some grocery stores have better
technology than our hospitals and clinics.”**

Secretary Tommy Thompson
Chicago Medical School Commencement
June 7, 2002



AHRQ: FY '04 HIT Investment

- \$60M initiative:
 - \$26M: to implement proven technologies in small and rural communities where HIT penetration has been low
 - \$24M: targeted for developing, implementing, and evaluating the use of new and innovative technologies to improve patient safety and quality of care in diverse health care settings
 - \$10M: targeted for clinical data standards and interoperability



Medicare Prescription Drug, Improvement, and Modernization Act

■ Health IT Provisions

- Electronic Prescription Program
- Grants to Physicians – ePrescribing systems
- Telemedicine Demonstrations Projects
- Medicare Care Management Performance Demonstration
- Council for Technology and Innovation
- Commission on Systemic Interoperability



Diffusion of Innovation

- “Invention is hard; dissemination is much more difficult”.
- A problem for all industries.
- Influences on rate of diffusion:
 - Perception of innovation
 - Characteristics of individuals who adopt change
 - Contextual and managerial factors

Questions in Search of Answers

- Linking knowledge development to policy levers (e.g., payment; regulation): role of ‘demonstrations’
- When is “good enough”?
- Vocabulary and pathways for translation of knowledge-based interventions under-developed
- Concurrent -- or sequential -- evaluation and translation?

Knowledge Transfer Strategies

- Involving Users in Research Cycle
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- Research Networks
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Next Steps in Medical Education Research

- Need to catalyze research that examines linkage between quality health care and medical education
- Commitment to patient outcomes
- Need to weave medical education back into the fabric of systems improvement





User Driven Research

