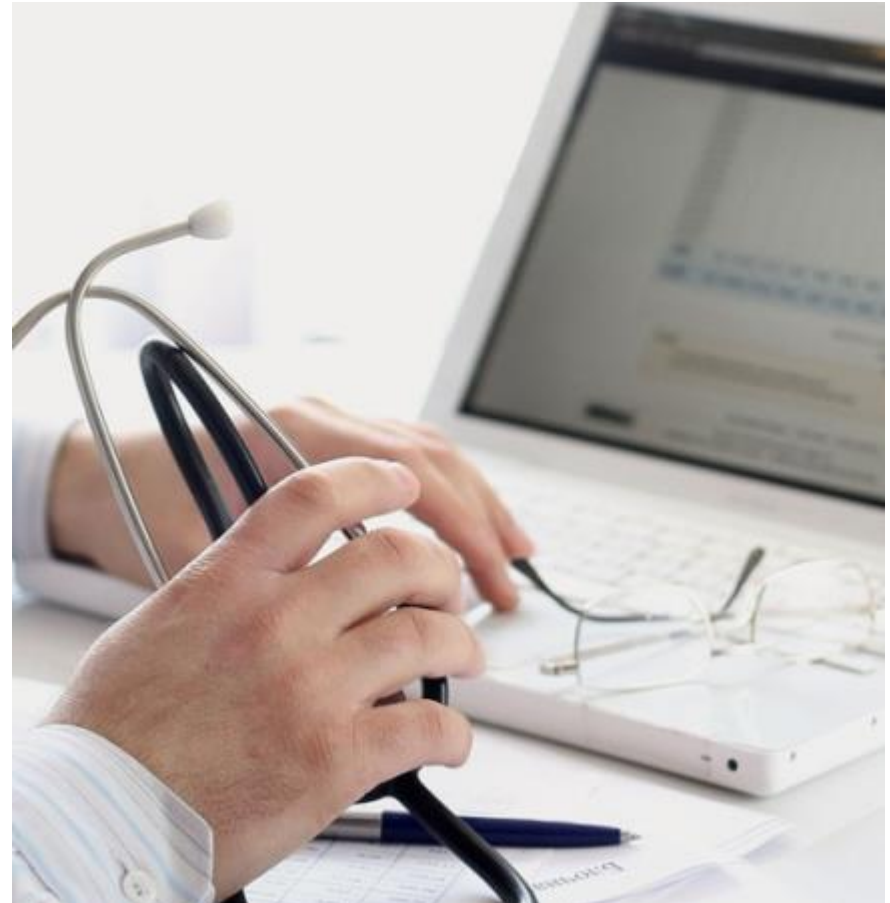


# Optimizing the Use of HIT to Improve Safety

Tejal Gandhi



# FREE FROM HARM:

## ACCELERATING PATIENT SAFETY IMPROVEMENT FIFTEEN YEARS AFTER TO ERR IS HUMAN

Report of an expert panel convened by the National Patient Safety Foundation argues for looking at morbidity as well as mortality caused by medical errors and going beyond hospitals to improve safety across the continuum of care.



### TO ERR IS HUMAN FRAMED PATIENT SAFETY AS A SERIOUS PUBLIC HEALTH ISSUE (1999 ESTIMATES)

44,000 - 98,000

Annual deaths from medical error among hospitalized patients.<sup>(a)</sup>



43,458

Annual deaths from car crashes.<sup>(a)</sup>

42,297

Annual deaths from breast cancer.<sup>(a)</sup>

16,516

Annual deaths from AIDS.<sup>(a)</sup>

### TO UNDERSTAND THE FULL IMPACT OF PATIENT SAFETY PROBLEMS, WE MUST LOOK AT BOTH MORTALITY AND MORBIDITY



1 in 10

patients develops a health care acquired condition (such as infection, pressure ulcer, fall, adverse drug event) during hospitalization.<sup>(b)</sup>

### BY SOME MEASURES, HEALTH CARE HAS GOTTEN SAFER SINCE TO ERR IS HUMAN



1.3 Million

Estimated reduction in hospital-acquired conditions (2011-2013) as a result of the federal Partnership for Patients initiative.<sup>(b)</sup>

### BUT WE MUST LOOK BEYOND HOSPITALS TO THE FULL CARE CONTINUUM



Roughly 1 billion ambulatory visits occur in the US each year.<sup>(c)</sup>



About 35 million hospital admissions occur annually.<sup>(c)</sup>

### ADVANCEMENT IN PATIENT SAFETY REQUIRES AN OVERARCHING SHIFT FROM REACTIVE, PIECEMEAL INTERVENTIONS TO A TOTAL SYSTEMS APPROACH TO SAFETY<sup>(d)</sup>

- 1 Ensure that leaders establish and sustain a safety culture.
- 2 Create centralized and coordinated oversight of patient safety.
- 3 Create a common set of safety metrics that reflect meaningful outcomes.
- 4 Increase funding for research in patient safety and implementation science.
- 5 Address safety across the entire care continuum.
- 6 Support the health care workforce.
- 7 Partner with patients and families for the safest care.
- 8 Ensure that technology is safe and optimized to improve patient safety.



To read the full report and detailed set of recommendations, visit [www.npsf.org/free-from-harm](http://www.npsf.org/free-from-harm)



This project was made possible in part through a generous grant from AIG in support of the advancement of the patient safety mission. AIG had no influence whatsoever on report direction or its content. The views and opinions expressed herein are those of the authors and do not necessarily reflect those of American International Group, Inc. (AIG) or its subsidiaries, business units or affiliates. Sources: (a) Institute of Medicine, *To Err is Human: Building a Safer Health System*, Washington, DC: The National Academies Press, 2000. (b) 2013 Annual Hospital-Acquired Condition Rate and Estimates of Cost Savings and Deaths Averted From 2010 to 2013, Rockville, MD: Agency for Healthcare Research and Quality, October 2015. AHRQ Publication No. 16-0006-EE. <http://www.ahrq.gov/professionals/quality-patient-safety/psf/index.html>. (c) National Center for Health Statistics, *Facets A-2, Ambulatory Care and Hospital Utilization*, Available at: <http://www.cdc.gov/nchs/data/ahc>. (d) National Patient Safety Foundation, *Free from Harm: Accelerating Patient Safety Improvement Fifteen Years after To Err is Human*, Boston, MA: National Patient Safety Foundation, 2015. Available at: <http://www.npsf.org/free-from-harm>.



TOGETHER FOR SAFER CARE

# EIGHT RECOMMENDATIONS FOR ACHIEVING TOTAL SYSTEMS SAFETY

From the report of an expert panel convened by the National Patient Safety Foundation:  
*Free from Harm: Accelerating Patient Safety Improvement  
Fifteen Years After To Err Is Human*



## 1. ENSURE THAT LEADERS ESTABLISH AND SUSTAIN A SAFETY CULTURE

Improving safety requires an organizational culture that enables and prioritizes safety. The importance of culture change needs to be brought to the forefront, rather than taking a backseat to other safety activities.



## 2. CREATE CENTRALIZED AND COORDINATED OVERSIGHT OF PATIENT SAFETY

Optimization of patient safety efforts requires the involvement, coordination, and oversight of national governing bodies and other safety organizations.



## 3. CREATE A COMMON SET OF SAFETY METRICS THAT REFLECT MEANINGFUL OUTCOMES

Measurement is foundational to advancing improvement. To advance safety, we need to establish standard metrics across the care continuum and create ways to identify and measure risks and hazards proactively.



## 4. INCREASE FUNDING FOR RESEARCH IN PATIENT SAFETY AND IMPLEMENTATION SCIENCE

To make substantial advances in patient safety, both safety science and implementation science should be advanced, to more completely understand safety hazards and the best ways to prevent them.



## 5. ADDRESS SAFETY ACROSS THE ENTIRE CARE CONTINUUM

Patients deserve safe care in and across every setting. Health care organizations need better tools, processes, and structures to deliver care safely and to evaluate the safety of care in various settings.



## 6. SUPPORT THE HEALTH CARE WORKFORCE

Workforce safety, morale, and wellness are absolutely necessary to providing safe care. Nurses, physicians, medical assistants, pharmacists, technicians, and others need support to fulfill their highest potential as healers.



## 7. PARTNER WITH PATIENTS AND FAMILIES FOR THE SAFEST CARE

Patients and families need to be actively engaged at all levels of health care. At its core, patient engagement is about the free flow of information to and from the patient.



## 8. ENSURE THAT TECHNOLOGY IS SAFE AND OPTIMIZED TO IMPROVE PATIENT SAFETY

Optimizing the safety benefits and minimizing the unintended consequences of health IT is critical.



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# Handwriting

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# Ways IT Can Improve Safety

- Prevent errors and adverse events
- Facilitating a more rapid response after an adverse event has occurred
- Tracking and providing feedback about adverse events

Bates, Gawande 2003

# Main Strategies for Preventing Errors and AEs Using IT

- Tools to improve communication
- Making knowledge more readily accessible
- Requiring key pieces of information
- Assisting with calculations
- Performing checks in real time
- Assisting with monitoring
- Providing decision support

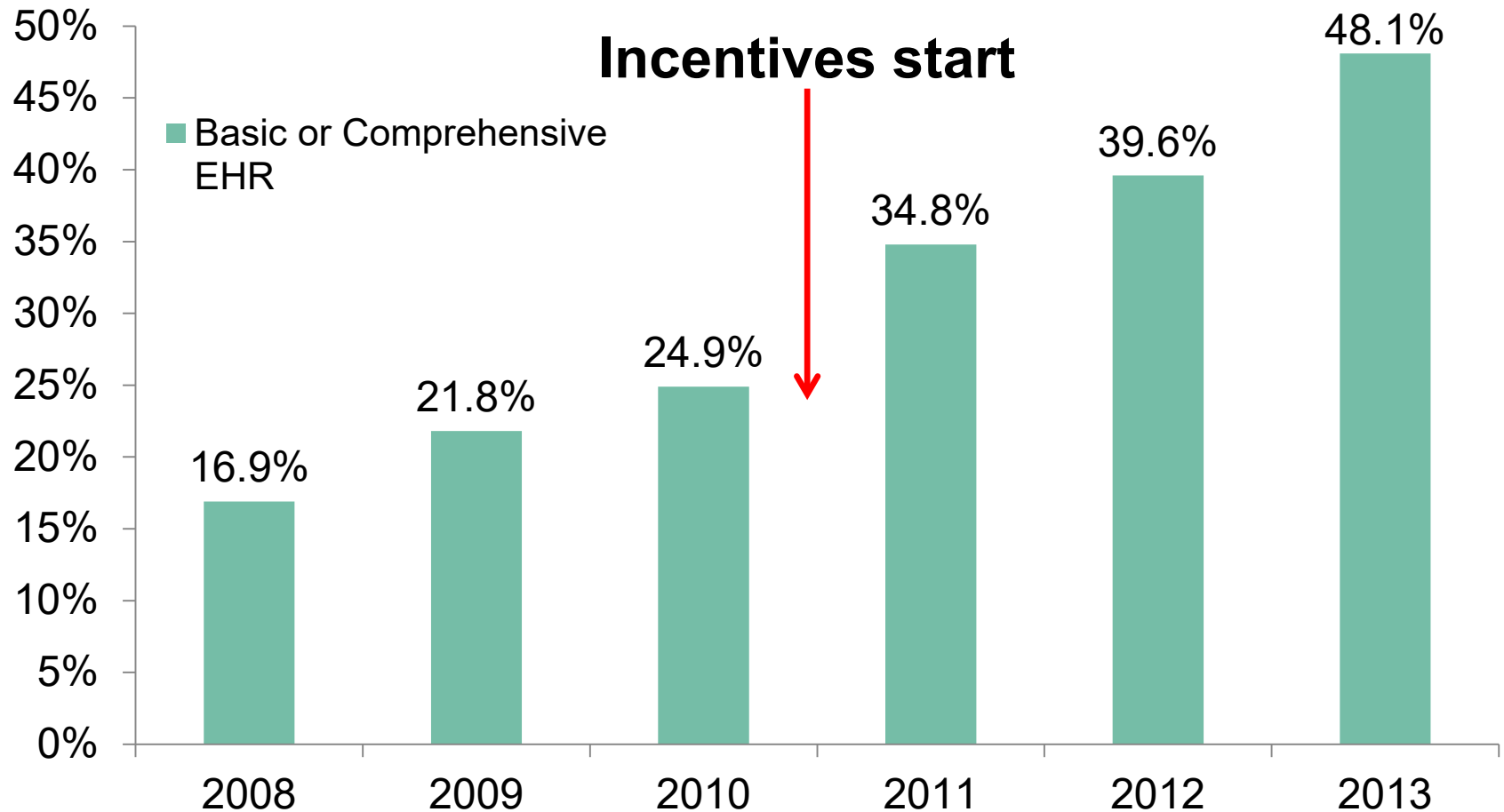
Bates, Gawande 2003



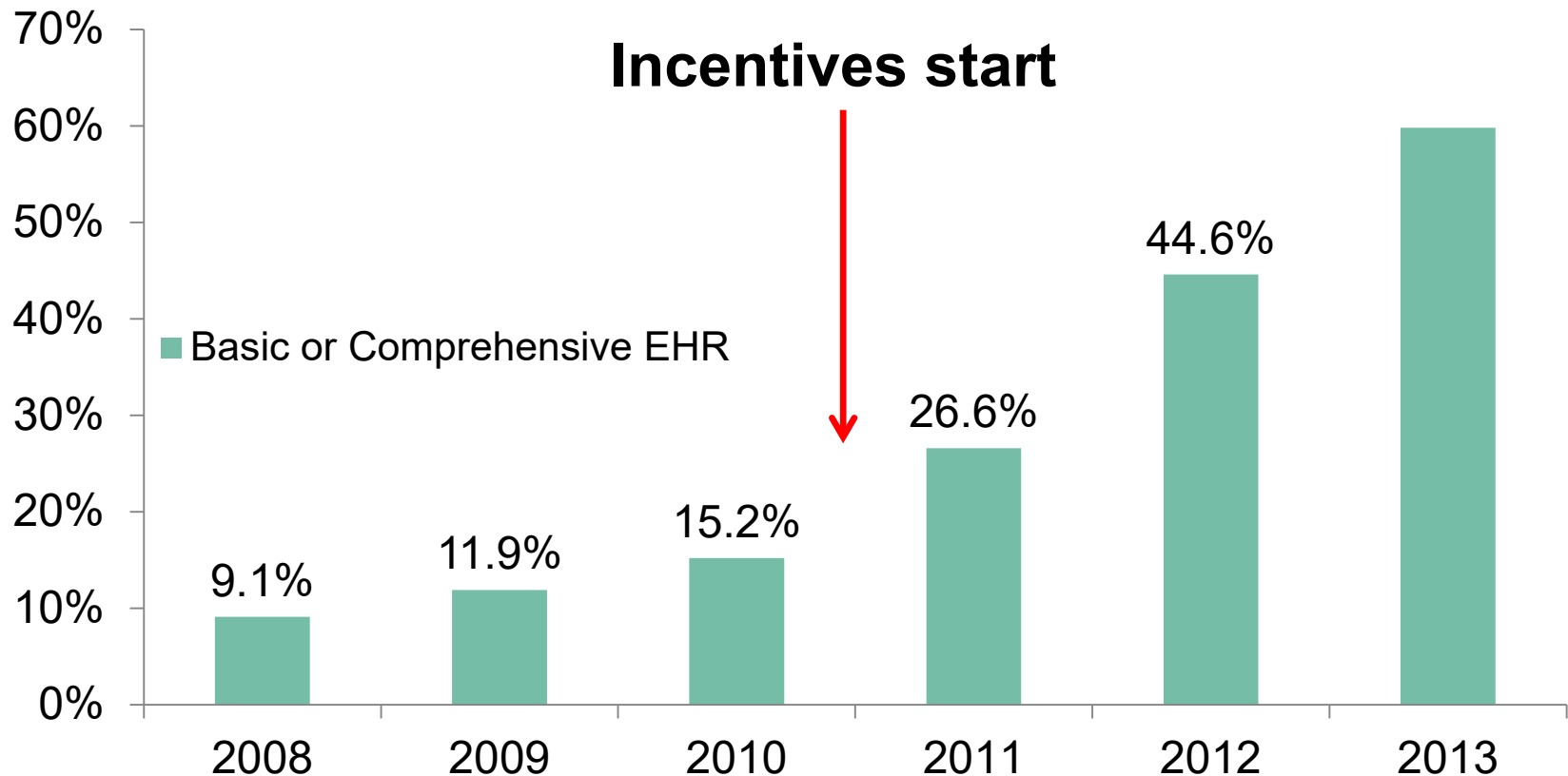
# Optimize the Use of HIT

- We know that some technologies reduce errors significantly
  - Computerized provider order entry (CPOE)
  - Barcoding
  - Electronic prescribing
  - Handoff tools
  - Test result management systems
  - Referral management systems

# Use of EHRs in Ambulatory Care



# Use of EHRs Among U.S. Hospitals



Slides courtesy of A. Jha; DesRoches et al. Health Affairs 2013

# Optimize the use of HIT

- Need to optimize these EHR and device systems
  - Reduce over-alerting
  - Variability across vendors
  - Improve interoperability (devices)
- Improve implementation
  - 42% of hospitals are failing to scan both the patient and the medication for at least 95% of administrations (Leapfrog 2018)
- Also, we know there can be unintended consequences
  - Clinical documentation/cut and paste
  - Accurate medication and problem lists

# Unintended Consequences: Inpatient CPOE

- Workflow/work-arounds
- More work/new work
- Communication
- Overdependence on technology
- Shift in power
- Never-ending technology demands
- Emotions
- New errors
- Cost creep

Ash JS, Sittig DF, Poon EG, et al. JAMIA 2007

# EHR as a Source of Burnout

- Primary care physicians using an EMR with a moderate number of functions report more stress and less job satisfaction than physicians with a low number of EMR functions (Babbott S, et al. JAMIA 2014)
- For many physicians, the current state of EHR technology worsened professional satisfaction in multiple ways (Rand study, 2013)
  - Poor usability
  - Time consuming data entry
  - Interference with face to face patient care
  - Inefficient and less fulfilling work
  - Degradation of clinical documentation



# Sociotechnical Model

- 8 components for successful implementation
  - Hardware and software
  - Clinical content
  - Human computer interface
  - **People**
  - **Workflow and communication**
  - Policies and procedures, **Culture** (internal)
  - Rules, regulations (external)
  - Measurement and monitoring

# HIT culture is critical to HIT success

- Creating a culture of HIT safety is a critical foundation to improving safety using technology
  - Is the organization open to hearing about HIT safety issues?
  - Is there feedback about safety issues?
  - Is there punishment and blame?
- Many strategies exist to make culture change that are relevant to HIT
  - Reporting systems
  - Walkrounds
- Need tools to measure where your HIT culture is