



Patient Safety in Resource Poor Settings

Global Opportunities (MIT April 8, 2011)

*Pedro Delgado, Executive Director
Institute for Healthcare Improvement
www.ihl.org*

Safe, Timely, Effective, Efficient, Equitable, Patient-Centred

- No needless deaths, harm or suffering
- No delays
- No waste
- No feelings of helplessness

*“we cannot change the human condition,
but we can change the conditions
under which humans work”*

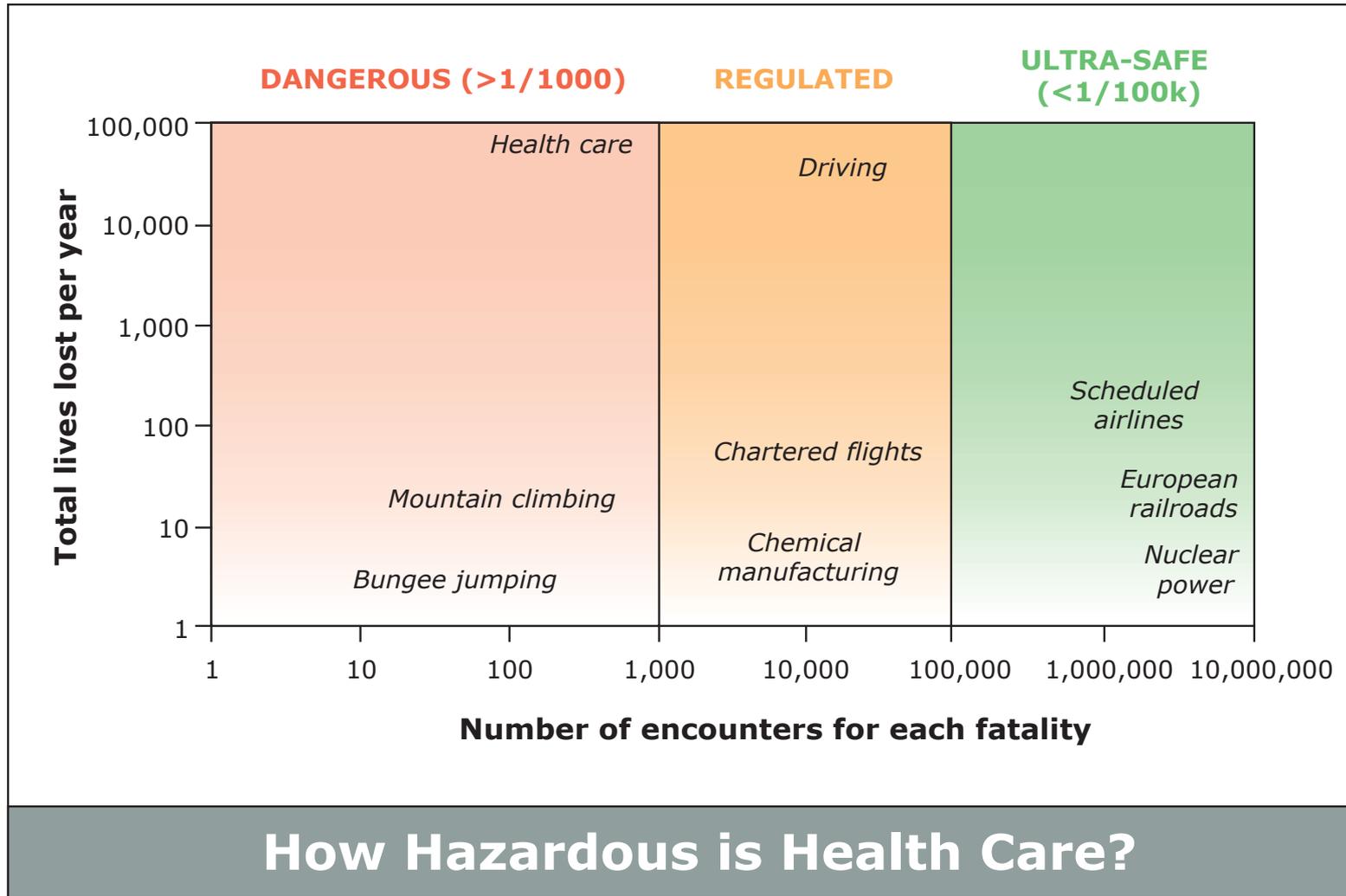
(James Reason)



I. Context

*„Global Trigger Tool’ Shows That
Adverse Events In Hospitals May
Be Ten Times Greater Than
Previously Measured*

The reality in the developed world...



How Hazardous is Health Care?

Image by MIT OpenCourseWare. After L. Leape, Harvard School of Public Health.

Latin America

| PAIS | Pacientes incluidos | Pacientes estudiados | Prevalencia |
|--------|---------------------|----------------------|--------------|
| País 1 | 2405 | 2373 | 312 (13,1%) |
| País 2 | 2897 | 2897 | 224 (7,7%) |
| País 3 | 1643 | 1632 | 198 (12,1%) |
| País 4 | 2003 | 2003 | 171 (8,5%) |
| País 5 | 2478 | 2474 | 286 (11,6%) |
| Total | 11426 | 11379 | 1191 (10,5%) |

WHO 2008 – Africa (Dr Sambo)

- Development of a national policy for patient safety;
- raising awareness of all stakeholders on the importance of patient safety;
- ensuring safe surgical care;
- minimizing healthcare-associated infections;
- ensuring adequate funding for patient safety activities.
- improving knowledge and learning in patient safety;
- re-orienting health systems to make patient safety an integral part of quality care;
- ensuring appropriate use, quality and safety of medicines; and
- strengthening surveillance and capacity for research.

Key facts

- Healthcare-associated infection is a global problem: over 1.4 million at any given time.
- 5% to 10% of patients acquire one or more infections in health facilities, the risk being two to 20 times higher in developing countries, with patients undergoing surgery being the most affected.

High rate of healthcare-associated infections

- weak health care delivery systems;
- poor infrastructure to support basic but essential procedures such as hand hygiene;
- weak management capacity;
- under-equipped health facilities;
- poor injection and blood safety procedures;
- overcrowding; and
- limited microbiological information.

Map showing population per doctor by country removed due to copyright restrictions. See www.doctorsoftheworld.org.



II. What? How?

2 Examples

WORLD ALLIANCE
for
PATIENT SAFETY

*Safe Surgery
Saves Lives*

World Health Organization

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Surgical safety is a public health issue

- About 234 million operations are done globally each year
- A rate of 0.4-0.8% deaths and 3-16% complications means that at least 1 million deaths and 7 million disabling complications occur each year worldwide

SPECIAL ARTICLE

A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population

Alex B. Haynes, M.D., M.P.H., Thomas G. Weiser, M.D., M.P.H.,
William R. Berry, M.D., M.P.H., Stuart R. Lipsitz, Sc.D.,
Abdel-Hadi S. Breizat, M.D., Ph.D., E. Patchen Dellinger, M.D.,
Teodoro Herbosa, M.D., Sudhir Joseph, M.S., Pascience L. Kibatata, M.D.,
Marie Carmela M. Lapitan, M.D., Alan F. Merry, M.B., Ch.B., F.A.N.Z.C.A., F.R.C.A.,
Krishna Moorthy, M.D., F.R.C.S., Richard K. Reznick, M.D., M.Ed., Bryce Taylor, M.D.,
and Atul A. Gawande, M.D., M.P.H., for the Safe Surgery Saves Lives Study Group*

N ENGL J MED 360:5 NEJM.ORG JANUARY 29, 2009

The Checklist



SURGICAL SAFETY CHECKLIST (FIRST EDITION)

Before induction of anaesthesia ▶▶▶▶▶▶▶▶▶▶ Before skin incision ▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶ Before patient leaves operating room

| SIGN IN |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> PATIENT HAS CONFIRMED <ul style="list-style-type: none"> • IDENTITY • SITE • PROCEDURE • CONSENT |
| <input type="checkbox"/> SITE MARKED/NOT APPLICABLE |
| <input type="checkbox"/> ANAESTHESIA SAFETY CHECK COMPLETED |
| <input type="checkbox"/> PULSE OXIMETER ON PATIENT AND FUNCTIONING |
| DOES PATIENT HAVE A: |
| KNOWN ALLERGY? |
| <input type="checkbox"/> NO |
| <input type="checkbox"/> YES |
| DIFFICULT AIRWAY/ASPIRATION RISK? |
| <input type="checkbox"/> NO |
| <input type="checkbox"/> YES, AND EQUIPMENT/ASSISTANCE AVAILABLE |
| RISK OF >500ML BLOOD LOSS (7ML/KG IN CHILDREN)? |
| <input type="checkbox"/> NO |
| <input type="checkbox"/> YES, AND ADEQUATE INTRAVENOUS ACCESS AND FLUIDS PLANNED |

| TIME OUT |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE |
| <input type="checkbox"/> SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM <ul style="list-style-type: none"> • PATIENT • SITE • PROCEDURE |
| ANTICIPATED CRITICAL EVENTS |
| <input type="checkbox"/> SURGEON REVIEWS: WHAT ARE THE CRITICAL OR UNEXPECTED STEPS, OPERATIVE DURATION, ANTICIPATED BLOOD LOSS? |
| <input type="checkbox"/> ANAESTHESIA TEAM REVIEWS: ARE THERE ANY PATIENT-SPECIFIC CONCERNS? |
| <input type="checkbox"/> NURSING TEAM REVIEWS: HAS STERILITY (INCLUDING INDICATOR RESULTS) BEEN CONFIRMED? ARE THERE EQUIPMENT ISSUES OR ANY CONCERNS? |
| HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES? |
| <input type="checkbox"/> YES |
| <input type="checkbox"/> NOT APPLICABLE |
| IS ESSENTIAL IMAGING DISPLAYED? |
| <input type="checkbox"/> YES |
| <input type="checkbox"/> NOT APPLICABLE |

| SIGN OUT |
|------------------------------------------------------------------------------------------------------------------------------------------|
| NURSE VERBALLY CONFIRMS WITH THE TEAM: |
| <input type="checkbox"/> THE NAME OF THE PROCEDURE RECORDED |
| <input type="checkbox"/> THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT (OR NOT APPLICABLE) |
| <input type="checkbox"/> HOW THE SPECIMEN IS LABELLED (INCLUDING PATIENT NAME) |
| <input type="checkbox"/> WHETHER THERE ARE ANY EQUIPMENT PROBLEMS TO BE ADDRESSED |
| <input type="checkbox"/> SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE REVIEW THE KEY CONCERNS FOR RECOVERY AND MANAGEMENT OF THIS PATIENT |

THIS CHECKLIST IS NOT INTENDED TO BE COMPREHENSIVE. ADDITIONS AND MODIFICATIONS TO FIT LOCAL PRACTICE ARE ENCOURAGED.

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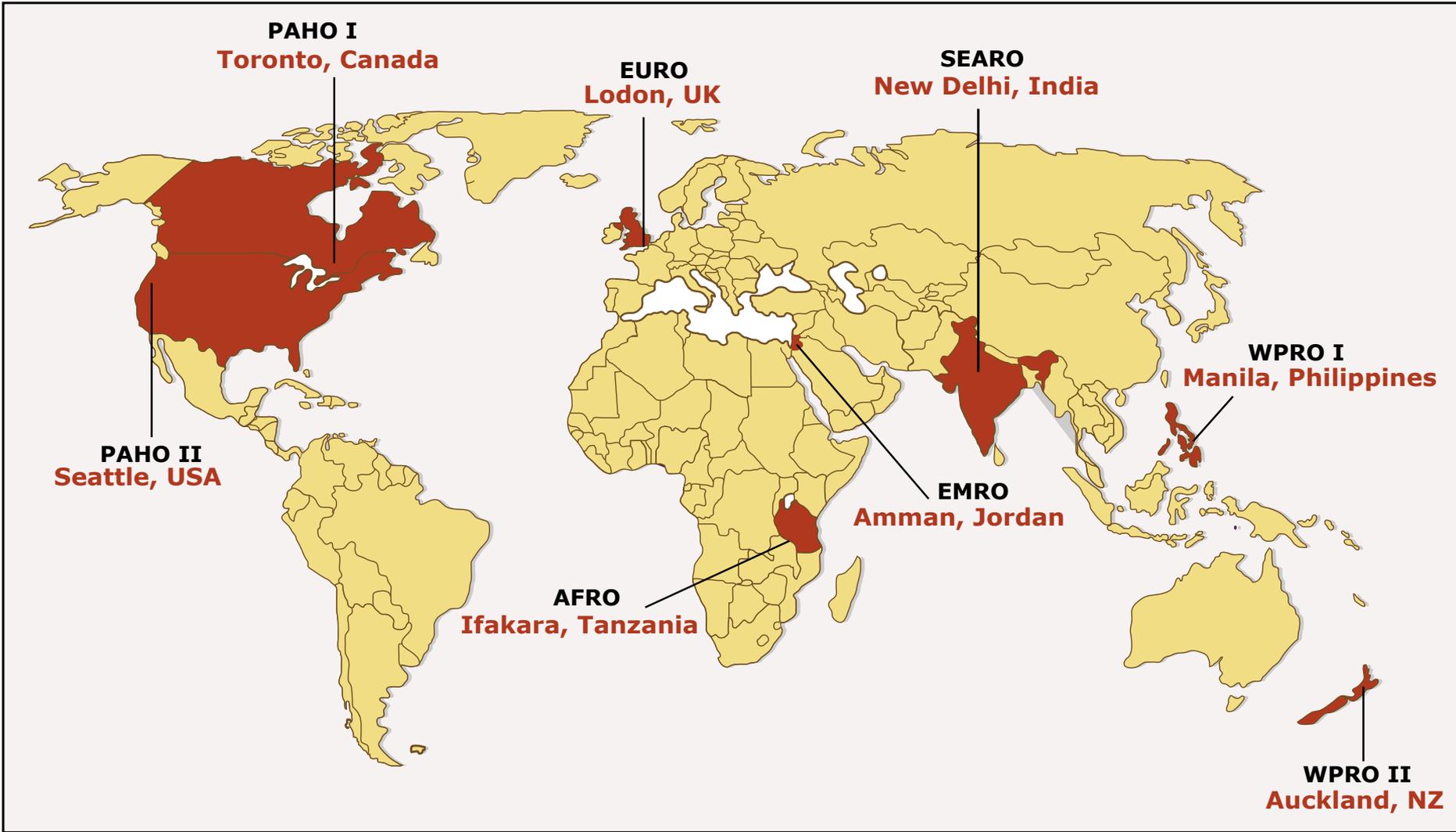


Image by MIT OpenCourseWare.

...was found to reduce the rate of postoperative complications and death by more than one-third!

Haynes et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. *New England Journal of Medicine* 360:491-9. (2009)

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Results – All Sites

| | Baseline | Checklist | P value |
|-----------------------|----------|-----------|---------|
| Cases | 3733 | 3955 | - |
| Death | 1.5% | 0.8% | 0.003 |
| Any Complication | 11.0% | 7.0% | <0.001 |
| SSI | 6.2% | 3.4% | <0.001 |
| Unplanned Reoperation | 2.4% | 1.8% | 0.047 |

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| | Change in Complications | Change in Death |
|-----------------------|-------------------------|-----------------|
| High Income | 10.3% -> 7.1%* | 0.9% -> 0.6% |
| Low and Middle Income | 11.7% -> 6.8%* | 2.1% -> 1.0%* |

* $p < 0.05$

What problems does this checklist address?

- **Correct patient, operation and operative site**
 - There are between 1500 and 2500 wrong site surgery incidents every year in the United States.¹
 - In a survey of 1050 hand surgeons, 21% reported having performed wrong-site surgery at least once during their careers.²

¹ Seiden, Archives of Surgery, 2006.

² Joint Commission, Sentinel Event Statistics, 2006.

What problems does this checklist address? (cont.)

- **Safe Anaesthesia and Resuscitation**

- An analysis of 1256 incidents involving general anaesthesia in Australia showed that pulse oximetry on its own would have detected 82% of them.¹

¹ Webb, Anaesthesia and Intensive Care, 1993.

What problems does this checklist address? (cont.)

- **Minimizing risk of infection**
 - Giving antibiotics within one hour before incision can cut the risk of surgical site infection by 50%^{1, 2}
 - In the eight evaluation sites, failure to give antibiotics on time occurred in almost one half of surgical patients who would otherwise benefit from timely administration

¹ Bratzler, The American Journal of Surgery, 2005.

² Classen, New England Journal of Medicine, 1992.

What problems does this checklist address?

- **Effective Teamwork**

- Communication is a root cause of nearly 70% of the events reported to the Joint Commission from 1995-2005.¹
- A preoperative team briefing was associated with enhanced prophylactic antibiotic choice and timing, and appropriate maintenance of intraoperative temperature and glycemia.^{2, 3}

¹ Joint Commission, Sentinel Event Statistics, 2006.

² Makary, Joint Commission Journal on Quality and Patient Safety, 2006.

³ Altpeter, Journal of the American College of Surgeons, 2007.

Survey of Attitudes Among Clinicians at Study Sites/ (n=229)

| | |
|----------------------------------------------------------------------|-------|
| The checklist was easy to use | 78.6% |
| The checklist improved operating room safety | 79.0% |
| The checklist took a long time to complete | 18.3% |
| Communication was improved through use of the checklist | 84.3% |
| The checklist helped prevent errors in the operating room | 78.2% |
| If I were having an operation, I would want the checklist to be used | 92.6% |

Advantages of Using a Checklist

- **Customizable** to local setting and needs
- **Deployable** in an incremental fashion
- **Supported** by scientific evidence and expert consensus
- **Evaluated** in diverse settings around the world
- **Ensures** adherence to established safety practices
- **Minimal resources** required to implement a far-reaching safety intervention

Worldwide

WORLD ALLIANCE
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*Safe Surgery
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Surgical Safety Web Map

Contact us
[About these maps...](#)

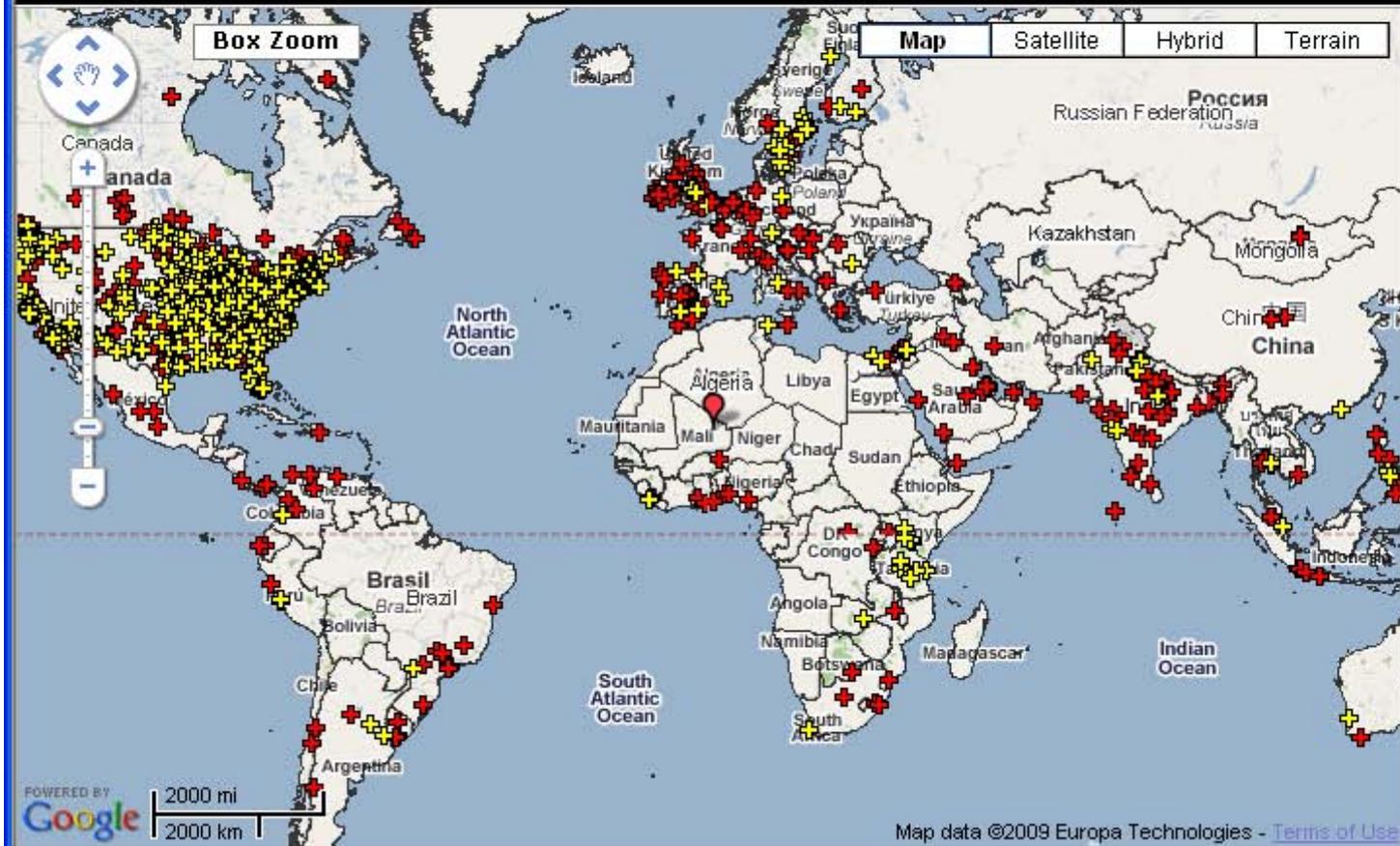
+ Actively using the checklist: 744

• + Total Registrants: 1542 5-18-09

Enter Hospital or place...

Go!

Hide M



Layer List

- [Endorsing Organizations](#)
- [International Endorsing Organizations](#)
- [Hospitals](#)
- [Pilot Sites](#)
- [Nationwide Implementation](#)
- [Surgical Rates](#)

Hospital List

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IMPROVEMENT



II. What?, How?: Some Principles

Principles

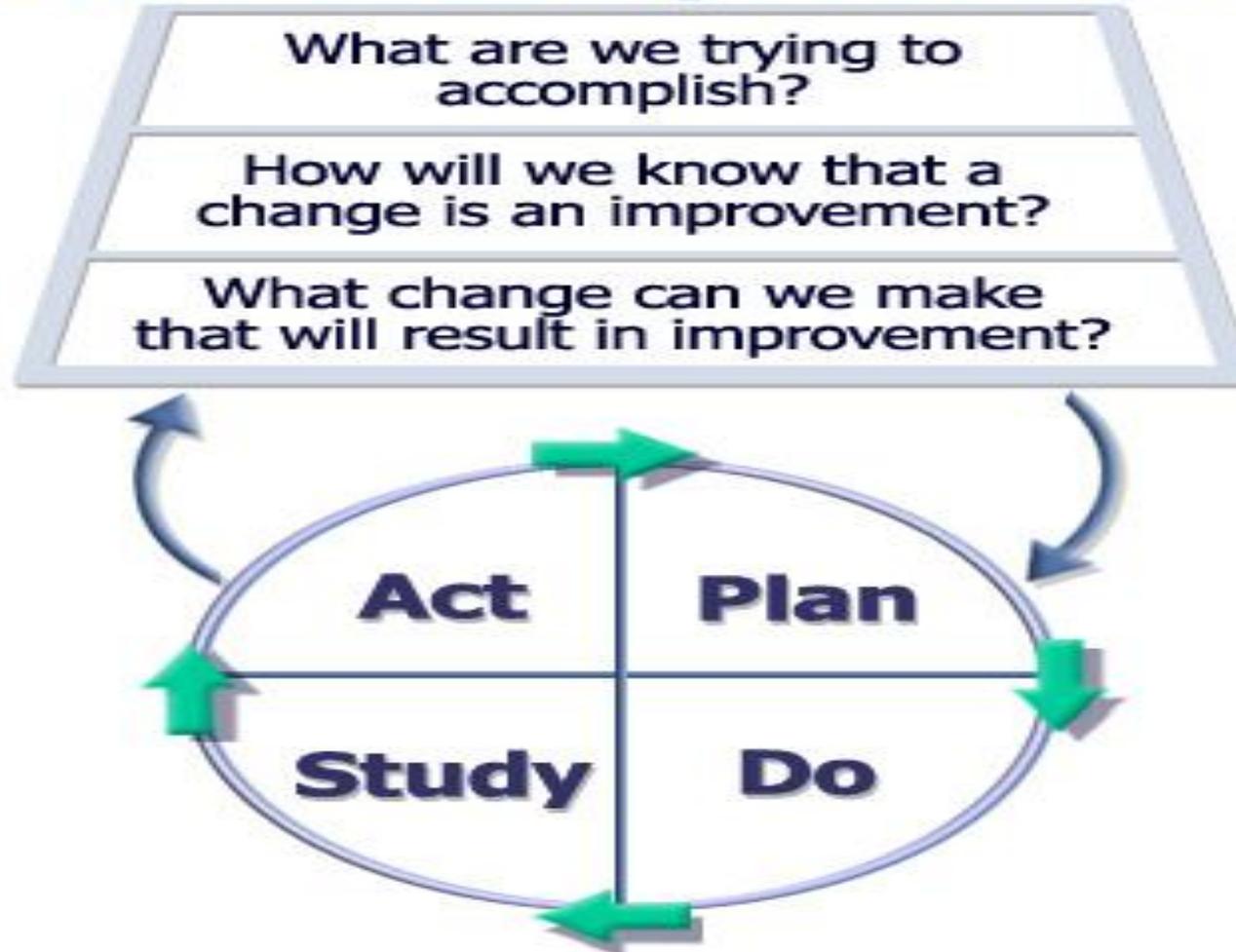
- $S + P = O$
- Reliability
- Introducing a 'new way' (Rogers, 1995):
 - Relative advantage
 - Compatibility
 - Complexity
 - Trialability
 - Observability

The Model for Improvement

- ‘Pragmatic science’ (James)
- Data for improvement
- Learning (sequential, cumulative)
- Engagement
- **Implementation focus**

The Model for Improvement

Model for Improvement



Adopter Categories

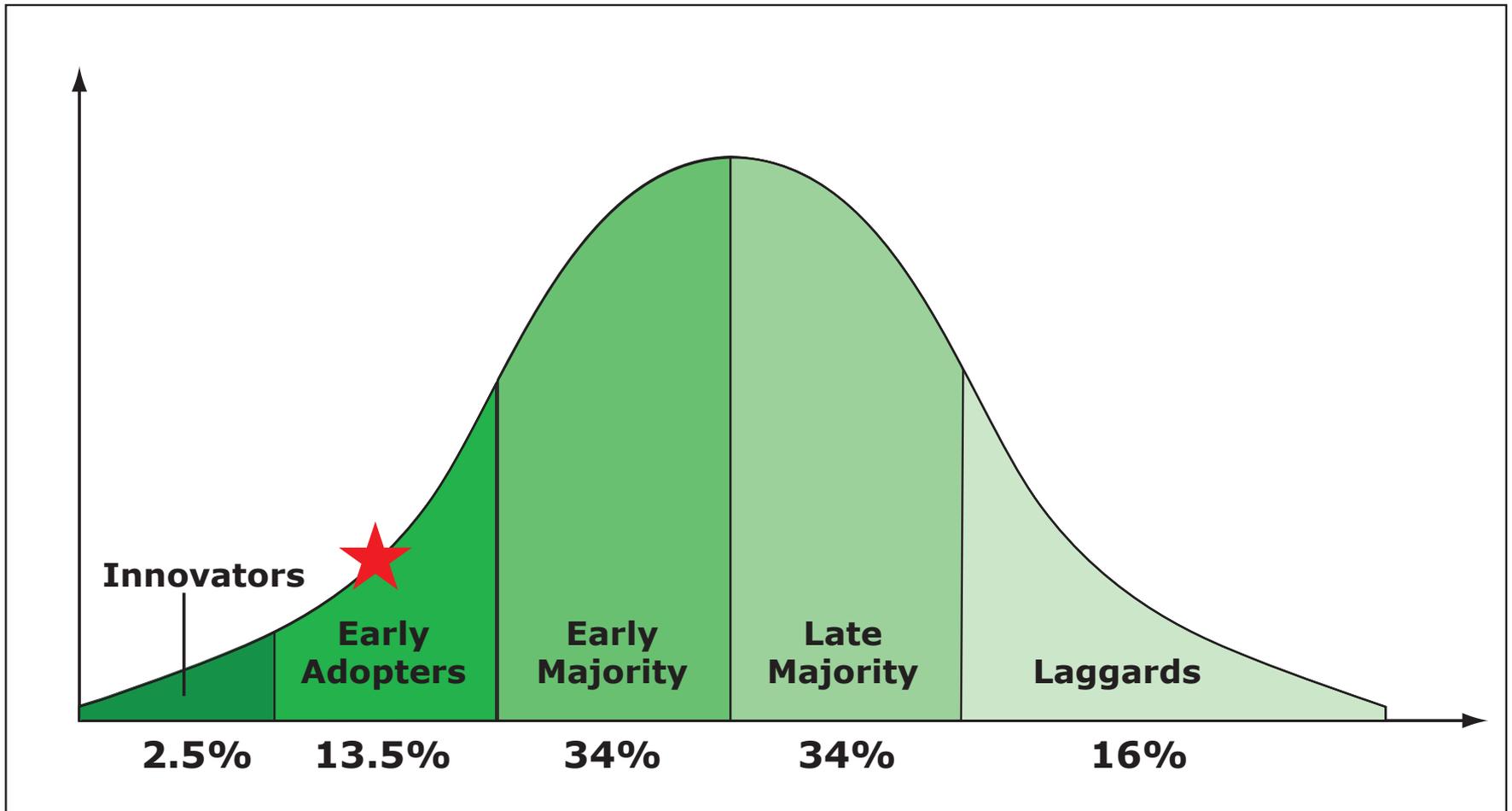
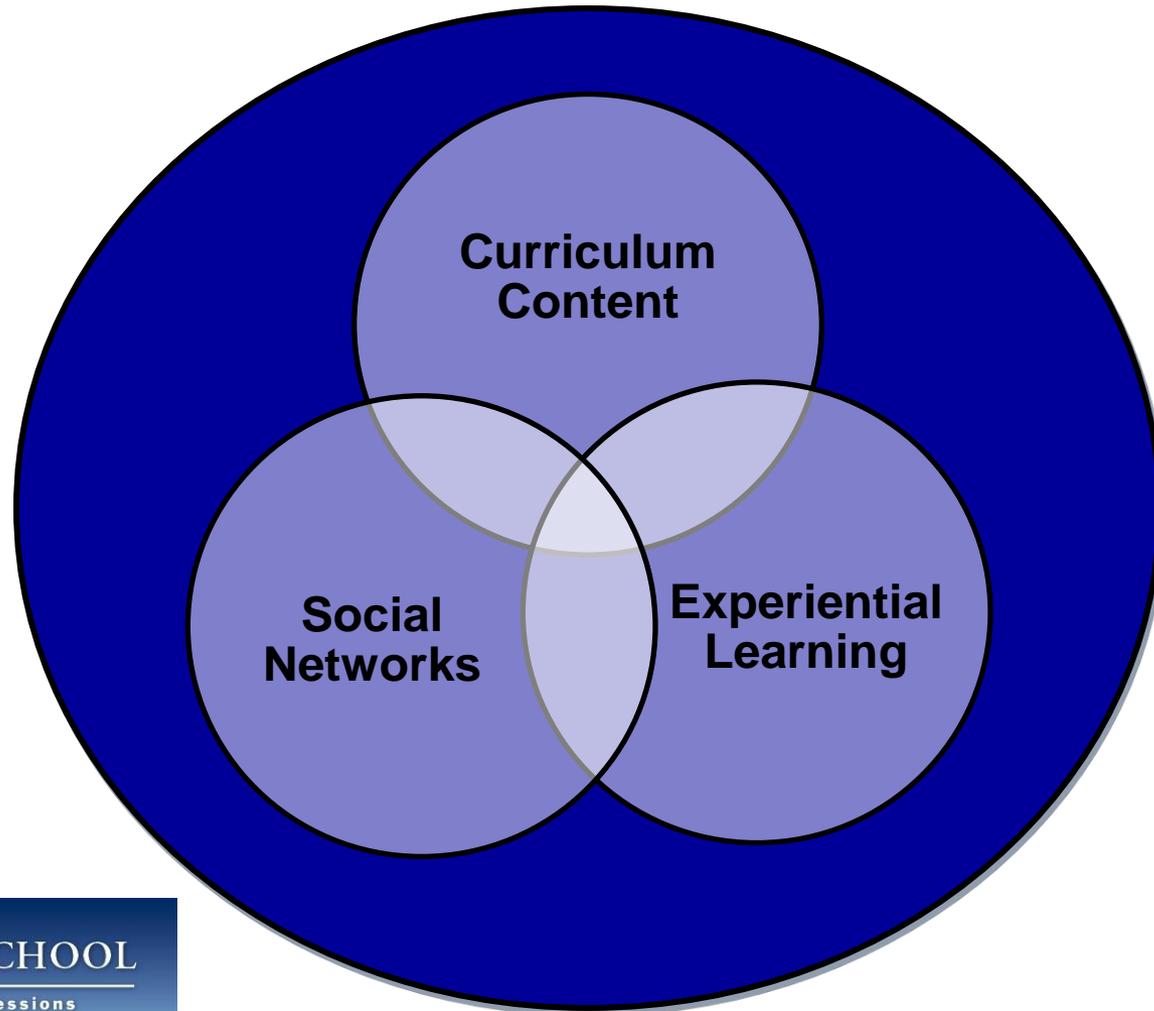


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New Stuff



[How to Get a Job at Cincinnati Children's Hospital](#)

Uma Kotagal, senior vice president for quality and transformation at this improvement-focused hospital, explains what she's looking for in new hires.



[How to Write Titles and Abstracts](#)

David Stevens, editor-in-chief of the journal *Quality and Safety in Health Care*, walks you through writing a great title and abstract.



[The Writer's Corner](#)

Inside tips on writing for journals and the popular press.



[On Call: Get Your Work Published](#)

Mystified by the publication process? Frank Davidoff, IHI's executive editor, and David Stevens, editor-in-chief of the journal *Quality and Safety in Health Care*, explain it all for you.



[Chapter Stories: Spring 2009 Chapter Progress Report Results](#)

[See more resources >>](#)

Events

[Research to Reform: Achieving Health System Change: September 13-16, Bethesda, MD](#)

AHRQ presents its third annual conference at the Bethesda North Marriott Convention Center in Bethesda, Maryland.

[Transform: A Collaborative Symposium on Innovations in Health Care Experience and Delivery: September 13-15, Rochester, MN](#)

The Mayo Clinic presents a symposium on innovative ways to deliver health care in the 21st century.

[The Student Experience - Service Improvement in Pre-registration Education: September 17, Birmingham, UK](#)

The NHS Institute is hosting a conference to showcase students' achievements in the area of service improvement.

[Training Tomorrow's Doctors: Graduate Medical Education and Patient and Family Centered Care: September 25-26, Chicago, Illinois](#)

An opportunity to meet and learn from leaders in graduate medical education and patient- and family-centered care.

[IHI National Forum on Quality Improvement in Health Care: December 6-9 - Orlando, FL](#)

Scholarships available for students, faculty, and residents.

[See all events >>](#)

interprofessional educational community giving you the skills to become the agent in health care. [Read more >>](#)



[What's the IHI Open School?](#)

Donald Berwick, IHI's president and CEO, explains.

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globalwide network of campus chapters at like-minded students, faculty, and professionals

LEARN MORE >>

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- Video
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- Podcasts
- Audio
- Contests

Textbooks aside, where do you turn to learn more about health care?

- Academic journals
- Blogs
- Magazines
- Newspapers
- TV specials
- the Web

IHI Open School Chapters



280+
campuses





3:48

Student Perspectives: Alexi

3 months ago

165 views

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3:32

Welcome to the IHI Open School...

3 months ago

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When Improvement Isn't in the Cu...

2 months ago

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1:12:48

Bottom-Up Versus Top-Down Change



15:19

Video Tour of IHI



4:03

Reducing Global Health Disparities

Basic Info

Type:

Description:

Student Groups - Clubs & Societies

The IHI Open School for Health Professions exists to teach students beginner, intermediate, and advanced competencies in quality improvement and patient safety. It is "the other school," in which students of medicine, nursing, dentistry, pharmacy, health care administration, and other allied health professions can enroll on a voluntary basis while they attend the physical professional school of their choice.

Contact Info

Email:

Website:

openschool@ihi.org

http://www.ihi.org/IHI/Programs/IHIOpenS...

Office:

Location:

Institute for Healthcare Improvement

20 University Rd, 7th flr
Cambridge, MA

Members

Displaying 8 of 448 members

See All



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Andrew Charles Kattner



Valerie P



Erin Thompson



Jonathan Small



Reesha Shah



Markus Josephson



Robin Zachary

Discussion Board

Displaying 3 of 4 discussion topics

Start New Topic | See All

SEARCH BLOG FLAG BLOG Next Blog



IHI OPEN SCHOOL for health professions

JUN 15, 2009

What Causes a Plane to Crash?

With the crash of Air France flight 447 still fresh in many of our minds, I thought it was a coincidence that an entire chapter of Malcolm Gladwell's Outliers: The Story of Success (an audiobook I'm currently listening to) would be devoted to discuss plane crashes.

The chapter investigates the causes behind the Avianca flight 52 crash and here are some interesting points that were discussed:

Plane crashes are more likely to be a result of an accumulation of minor malfunctions and extenuating circumstances. Characteristics of a typical crash include:

- Poor weather (causing a little more stress than usual)
- Planes are behind schedule (causing pilots to be rushed)
- The pilot has been awake for over 17 hours (meaning the pilot is tired)

IHI Open School Chapters Around the World



View Open School Chapters in a larger map

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12:14 PM Aug 13th from TweetDeck

Learn from LOW COST, HIGH QUALITY Hospitals in the US (NYT) http://tinyurl.com/ne97pf #ihi

Lessons for Health Reform - Federal Employee Health Benefits Program (RWJF) http://tinyurl.com/im6rey #ihi

Respectful Care at the End of Life: http://tinyurl.com/4mo2k #ihi

Berwick, Fisher, Gawande, & McClellan- 10 Steps to Better Health Care (NYT) http://tinyurl.com/ne97pf #ihi

Name IHI Open School Location Boston, MA Web http://ihi.org/H... Bio The Institute for Healthcare Improvement is an independent not-for-profit organization helping to lead the improvement of health care throughout the world.

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HST.S14 Health Information Systems to Improve Quality of Care in Resource-Poor Settings
Spring 2012

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