Patient Safety Matters

How Does The Patient Safety Research Center See and deal with these matters and why are others, such as, Interested in our work?
Our Vision

International Champion of Patient safety
We are about Placing Patient Safety at the heart of Medical Education and Practice
CONTENT OF THIS AND THE OTHER THREE PRESENTATIONS

- **Our Mission**, Driving principles, Premises, and Implications
- **The Burden** of Lack of Safety on the Nation
- **The Opportunity**

- **Our approach to lightening the Burden**

Main Areas of our Activity

- Education/training
- Safety Practice Enhancement
Mission

Pursuit of excellence in patient safety in the various domains of healthcare by applying systems-safety science, systems-engineering principles and systems-management strategies for building adaptive learning practices with self-empowered teams providing care with highest professionalism and integrity.
Driving Principles

Holism  
Natures way of creating wholes that are more than the sum of the parts Aristotle  through creative evolution Singh 1987

This is the inspiration behind Systems Approach and complexity science
Holism

Natures way of creating wholes that are more than the sum of the parts

This is the inspiration behind Systems Approach and complexity science

Cybernetics

Science of observed systems + Science of observing systems
Driving Principles

Holism
Natures way of creating wholes that are more than the sum of the parts
Aristotle through creative evolution
Singh 1987
This is the inspiration behind Systems Approach and complexity science

Cybernetics
Science of observed systems
+ Science of observing systems
Art Of
1940

Supremacy of Relevance over Rigor
Reductionism gives rigorous answers, but to wrong questions
Better an approximate answer to a right question
Singh 1987
Driving Principles

Not succumbing to the prevailing “Hegemony” and “Greedy Reductionism”

So that we can broaden the view of EBM

Reductionism gives rigorous answers, but to wrong questions
Better an approximate answer to a right question

Singh 1987
Patient Safety

Is

“freedom from accidental injury due to medical care or medical error” (US IOM)

UN: WHO is working towards declaring it a Basic HUMAN RIGHT

There is already a “London Declaration” by WHO
Safety is a fundamental system property.

Without safety there can be no quality of care.

*Patient Safety*

*Is*

“freedom from accidental injury due to medical care or medical error”
The Burden
This constitutes nearly 50% of the surgical “Never Events”

Wrong body part: 30%
Wrong procedure: 16%
Wrong patient: 4%

CMS press release 2006 (Minnesota Study)
The US National Burden of Systemic Errors in the Health Care

More than 3-6 Jumbo jets of the Health Care Industry drop out of the sky every day! (Analogy after Leape: the Safety Guru of USA)

And then there are other adverse Events!!
And then there are other adverse Events!!

Geriatrics carry the maximum share of this burden
And then there are other adverse Events!!

There is little or no understanding of the incidence rates, costs and prevention strategies of medication errors

IOM 2006
In 2001 there were 4.3 million ambulatory visits for treating Adverse Drug Events

Zhan et al 2005
7.75 million office visits by the elderly resulted in the prescribing of at least one medication from the list of 20 drugs judged potentially inappropriate in the elderly.

Aparasu 1997
Morbidity and mortality as a result of drug-related problems in the ambulatory settings may cost more than $177 Billion/yr

Cooper 1996
One of the costlier outcomes of drug related morbidity is hospitalization. Gurwitz 1995
59% are preventable

In ambulatory care of just Medicare patients- over half a million preventable ADE’s due to errors of commission alone  Gurwitz et.al 2003

1.7 million infections per year in US hospitals i.e. 4.5 infections for every 100 admissions

And then there are other adverse Events!!
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US Healthcare Geriatrics carry the maximum share of this burden.

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The National Burden of Systemic Errors in the Health Care Industry drop out of the sky every day! (Analogy after Leape: the Safety Guru of USA).

In ambulatory care of just Medicare patients—half a million preventable ADEs (Gurwitz et al., 2003).

1.5 Million/year Incidents of Harm (IHI/IOM).

1.5 million medication errors occur in hospitals each year. One in five elderly patients is given medicines that may not be good for them (Clancy, 2007).

1.7 million infections per year in US hospitals, i.e., 4.5 infections for every 100 admissions (Clancy, 2007).
# International Rankings and National Health Expenditure (Through Patient’s Lens)

<table>
<thead>
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<th>AUS</th>
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<th>GER</th>
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Jan. 2008
Commonwealth Fund
reveals interesting picture of effectiveness
Amenable mortality - deaths from certain causes before age 75 that are potentially preventable with timely and effective health care
Healthcare Safety Comparison with Civil Aviation

Adverse Events Per Million Opportunities

Not a fair but a telling comparison
Hazard Comparisons (rough)

(AHRQ)

Encounters (opportunities) for Each Fatality

Lives Lost per year

Health Care

Bungee Jumping

Chartered Flights

Driving

Scheduled Flights

Nuclear Power

Dangerous

More than 1 in a thousand

Very Safe

Less than 1 in 1000 thousand

After AHRQ

A R G Singh: 2004/7
Split of $2.6 trillion US National Budget of a fragmented and decentralized HC System

Cost of Hospitalization 31%

30-40% includes costs of other settings and costs of harm to patients!

30-40% is the Cost of Admin. Wastage

R and G Singh
Payers of $2.6 trillion US HC Costs

Public Funds:
- Medicare
- Medicaid
- Other 45%

Consumer
- Out of pocket
- Private 19%

Employer-Provided Insurance 36%
Payers of $2.6 trillion US HC Costs

Public Funds:
- Medicare
- Medicaid
- Other

45%

Please see this in the context of the fact that every 30 seconds an American is driven to bankruptcy due to health care costs (Obama)
The chasm between what is done and what can be done is about 50%

30 - 40% of the huge Health Budget is wasted

35% of $2.6 trillion HB >> $700 Billion/yr!
Money vs. Health. No relationship

Better health

Worse health

Individual U.S. states

Less state spending

More state spending

Congressional Budget Office Head, Peter Orszag: Times Nov 08
If this is not a MAJOR National Disaster our name is not Singh!
The total cost of medical injury in the health care system is estimated to be $200 billion per year which is about one fifth of the national health budget. 

(AARP 1998 Research Report)
Take Home:

We must create and ride a health machine that will “change the world”

We want a “Toyota of Health Care”

Provided we do not forget that the pursuit of safety is a NEVER Ending Journey

We can all play a role in making this a reality
Take Home:

We must create an innovative health machine that will change the world.

We want a "Toyota of Health Care." Without forgetting that pursuit of safety is a NEVER ending journey.

Or live with outsourcing:

"Health tourism" and "Health refugees"

We can all play a role in making this a reality.

R & G Singh: Aug. 2002
In >0.5 in 2007 were and in 2010 6 million/year are outsourced. These numbers are on a ‘steep climb’

AARP Sep.2007/The Economist April 2010
‘This was quite a shocking idea for me. I’ve never traveled really; I’ve always been a small-town girl.’

Patricia Hansen, 91, at the Taj Mahal, after hip surgery in New Delhi.
Importance of Patient Safety

Formidable and Compelling Pressures:

Federal Government
Institute of Medicine (IOM)
Professional Bodies
Accreditation Authorities

If we do not heed they will make errors
“expensive for us”
Importance of Patient Safety

In year 2000
Inst. Of Medicine was seeking 50% reduction in errors by 2005 !!!!!!

Progress so far has been only modest and highly variable!
Medicare says it won’t cover hospital errors

“Never Events”  Aug 2007
Our Vision of Patient-Centered Health Care
PATIENT Centered Cost Effective Quality Care with Team Resource Management
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PATIENT Centered Cost Effective Quality Care with Team Resource Management

Assessment

Review & Learn

Plan

Feedback

Implementation

Quality Management

Diagno. Imaging

Physician

Lab/PaThol.

Surgery

Pharmacy

Resp. Serv.

Nursing

Cardio-Pulm

Rehab Serv.

Clerk

Infect. Control

Nutri. Serv.

©R Singh 2007
This Patient-Centeredness has to be informed by awareness of possible outcomes and actions required as well as of interplay between quality and cost.
No error occurs

Patient’s Encounter with Health Care System

IF

Opportunities for system redesign and improvement – commonly go unnoticed

Beneficial outcome may occur

©A R G Singh: 2001
Advances in medical knowledge required to prevent recurrence

Patient's Encounter with Health Care System

No error occurs

IF

Unavoidable adverse event occurs

IF

Beneficial outcome may occur

Advances in medical knowledge required to prevent recurrence

Opportunities for system redesign and improvement – commonly go unnoticed

©A R G Singh: 2001
Patient's Encounter with Health Care System

IF Error occurs

IF Preventable adverse event occurs

Consequential

System redesign and improvement required to prevent recurrence

ACTION

OUTCOME

©A R G Singh: 2001
Opportunities for system redesign and improvement – commonly go unnoticed

Patient’s Encounter with Health Care System

IF

Error occurs

IF

Inconsequential on its own

IF

Beneficial outcome may occur

Opportunities for system redesign and improvement – commonly go unnoticed

ACTION

RQD

OUTCOME

©A R G Singh: 2001
Patient’s Encounter with Health Care System

Error occurs

IF

Inconsequential on its own

IF

Undetected (may cause cascade of errors)

IF

Preventable adverse event occurs

System redesign and improvement required to prevent recurrence

© A R G Singh: 2001
Patient’s Encounter with Health Care System

No error occurs
IF

Error occurs
IF

Inconsequential on its own
IF

Consequential

Detected and corrected

Undetected (may cause cascade of errors)

Beneficial outcome may occur

Preventable adverse event occurs

Advances in medical knowledge required to prevent recurrence

Opportunities for system redesign and improvement – commonly go unnoticed

System redesign and improvement required to prevent recurrence

©A R G Singh: 2003/7
C_p = Tangible and intangible costs of harm to patients and staff in the system

Achieved through communication, patient education and stress management

INTERPLAY BETWEEN SAFETY-BASED QUALITY AND COSTS IN THE WHOLE SYSTEM UNDER STUDY
$C_s =$ Costs of safety investments and maintenance of the system

Achieved through prioritized cost-effective interventions in the system

INTERPLAY BETWEEN SAFETY-BASED QUALITY AND COSTS IN THE WHOLE SYSTEM UNDER STUDY
OBJECTIVE

TOTAL COST = $C_p + C_s$

$C_p$ = Tangible and intangible costs of harm to patients and staff in the system

$C_s$ = Costs of safety investments and maintenance of the system

Achieved through prioritized cost-effective interventions in the system

Achieved through communication, patient education and stress management

DECREASING RISK/HAZARD RATING

INTERPLAY BETWEEN SAFETY-BASED QUALITY AND COSTS IN THE SYSTEM UNDER STUDY

©G and R Singh 2001
Patient Safety Improvements are Likely to provide the biggest FOR About 2.6 trillion