

Improving Hospital Performance – the necessary ingredients

Research
Clinical Care
Education

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- Can we define performance?
 - Are there agreed attributes for a performing healthcare institution?

Starting right:

Our patients

The Six Care Quality Attributes

- Safe
- Timely
- Effective
- Patient centred
- Efficient
- Equitable

CROSSING THE QUALITY CHASM:

A NEW HEALTH SYSTEM FOR THE 21ST CENTURY

- **Safe:** avoiding injuries to patients from the care that is intended to help them.
- **Effective:** providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit.
- **Patient-centred:** providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions.
- **Timely:** reducing waits and sometimes harmful delays for both those who receive and those who give care.
- **Efficient:** avoiding waste, including waste of equipment, supplies, ideas, and energy.
- **Equitable:** providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

Ensuring Safe Care

- when mistakes occur

- 44,000 to 98,000 people die in hospitals each year as a result of preventable medical errors
- Estimated to result in total costs of \$17-\$29 billion per year in US hospitals nationwide
- Physical and psychological impact
- Healthcare worker morale

Types of Errors

Diagnostic

- Error or delay in diagnosis
- Failure to employ indicated tests
- Use of outmoded tests or therapy
- Failure to act on results of monitoring or testing

Treatment

- Error in the performance of an operation, procedure, or test
- Error in administering the treatment
- Error in the dose or method of using a drug
- Avoidable delay in treatment or in responding to an abnormal test
- Inappropriate (not indicated) care

Preventive

- Failure to provide prophylactic treatment
- Inadequate monitoring or follow-up of treatment

Other

- Failure of communication
- Equipment failure
- Other system failure

SOURCE: Leape, Lucian; Lawthers, Ann G.; Brennan, Troyen A., et al. Preventing Medical Injury. Qual Rev Bull. 19(5):144–149, 1993.

More commonly, errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them.

What hampers performance?

- Wrong “business” model?
 - Patients are not central
- Clinician behavior or intent misaligned?
- Insufficient funding?
- Insufficient or poor infrastructure?
- Poor operational processes?
- Poor leadership?

ENSURE WE HAVE THE DATA

How safe our patients are under our care should be the start point of performance.

Tracking Adverse Events

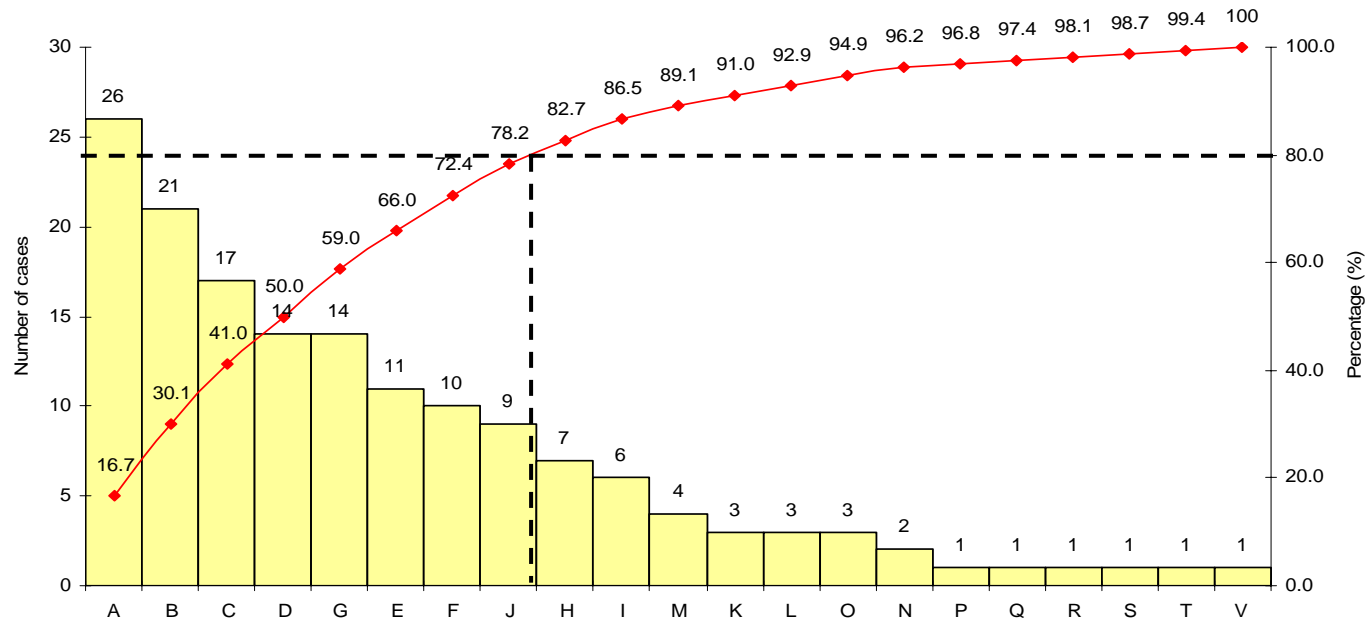
- Only when an obvious case occurs
 - Older method
- No fault reporting system
 - Sentinel event reporting
- Doing retrospective surveys
- Using information technology

Sentinel Event Root Causes

May 2002 to June 2006

Root Causes	NUH (Rank)	MOH (Rank) as on June 2004
Inadequate communication / <u>coordination</u> among healthcare team members*	1	2
Non-adherence to procedural protocol	2	5
Inadequate training	3	4
Lack of procedural protocol	4	3
Wrong or inadequate documentation	5	7
Inadequate supervision of junior staff	6	11
Inadequate procedural protocol	4	6
Inadequate/incomplete patient assessment	7	1
Inadequate communication to patient*	8	13
Lack of nece. equipment, equipment malfunction or poor maintenance	9	9

Pareto Chart of Root Causes



A - Inadequate communication / coordination

B - Non-adherence to procedural protocol

C - Inadequate training

D - Lack of procedural protocol

E - Wrong or inadequate documentation

F - Inadequate supervision of junior staff
Inadequate supervision of junior staff

G - Inadequate procedural protocol

H - Inadequate/incomplete patient assessment

I - Inadequate communication to patient

J - Lack of equipment, equipment malfunction or poor maintenance

K - Poor physical environment

L - Inadequate staffing level

M - Wrong clinical judgement

N - Lack of required clinical service

O - Human factor

P - Patient factors/conditions

Q - Wrong or inadequate patient monitoring

R - Poor organisational culture

S - Information retrieval problem

Adverse events and potentially preventable deaths in Dutch hospitals: results of a retrospective patient record review study

Methods: Using a three-stage retrospective record review process, trained nurses and doctors reviewed 7926 admissions: 3983 admissions of deceased hospital patients and 3943 admissions of discharged patients in 2004, in a random sample of 21 hospitals in the Netherlands (4 university, 6 tertiary teaching and 11 general hospitals). A large sample of deceased patients was included to determine the occurrence of potentially preventable deaths in hospitals more precisely.

Results of Dutch Study?

- ≥ 1 AEs were found in 5.7% of all admissions and a preventable AE in 2.3%
- 12.8% of all AEs resulted in permanent disability/contributed to death
- Proportion of AEs and impact increased with age
- >50% of the AEs were related to surgical procedures
- Among deceased hospital patients, 10.7% had experienced an AE
- Preventable AEs that contributed to death occurred in 4.1% of all hospital deaths
- Extrapolating to a national level, between 1482-2032 potentially preventable deaths occurred in Dutch hospitals in 2004

Other Ways of Detection?

Active surveillance using electronic triggers to detect adverse events in hospitalized patients

M K Szekendi, C Sullivan, A Bobb, J Feinglass, D Rooney, C Barnard, G A Noskin

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Qual Saf Health Care 2006;15:184–190. doi: 10.1136/qshc.2005.014589

MediClass: A System for Detecting and Classifying Encounter-based Clinical Events in Any Electronic Medical Record

BRIAN HAZLEHURST, PhD, H. ROBERT FROST, MS, DEAN F. SITTIG, PhD, VICTOR J. STEVENS, PhD

Abstract MediClass is a knowledge-based system that processes both free-text and coded data to automatically detect clinical events in electronic medical records (EMRs). This technology aims to optimize both clinical practice and process control by automatically coding EMR contents regardless of data input method (e.g., dictation, structured templates, typed narrative). We report on the design goals, implemented functionality, generalizability, and current status of the system. MediClass could aid both clinical operations and health services research through enhancing care quality assessment, disease surveillance, and adverse event detection.

■ J Am Med Inform Assoc. 2005;12:517–529. DOI 10.1197/jamia.M1771.

Triggers in Kaiser-Permanente Study

Table 1 Triggers and their yield

Trigger	Threshold value	No triggered	No reviewed (% triggered)	% with AE	% with error, no harm
High risk medications					
Dalteparin	Exclude prophylactic doses (5000 units daily)	13	5 (38)	20	40
Enoxaparin	Exclude prophylactic doses (30 mg twice daily or 40 mg daily)	319	30 (9)	20	27
Warfarin	Exclude doses 5 mg and under	211	17 (8)	24	12
Antidote medications					
Sodium polystyrene		78	20 (26)	25	20
Phytonadione	Exclude 1 mg doses given in obstetrics	247	27 (11)	33	0
Flumazenil		11	3 (27)	33	0
Naloxone		123	22 (18)	27	5
Protamine		5	2 (40)	0	0
Laboratory values					
Glucose	<50 or >350	335	46 (14)	57	28
Creatinine	Change of ≥ 0.5 mg/dl	3526	138 (4)	24	2
INR	>5	155	26 (17)	96	4
PTT	>100 s	321	39 (12)	59	21
Digoxin	>2 μ g/ml	41	9 (22)	56	44
Amikacin	>10 μ g/ml	65	7 (11)	14	29
Gentamicin	>2 μ g/ml	116	10 (9)	10	30
Tobramycin	>2 μ g/ml	106	11 (10)	9	9
Vancomycin	>15 μ g/ml	120	16 (13)	6	31
Phenytoin	Free level >2 μ g/ml	84	9 (11)	22	44
Blood/other					
Positive blood cultures		337	39 (12)	95	5
Fresh frozen plasma		105	17 (16)	6	6
Total		6318	493 (8)	39	13

INR, international normalized ratio; PTT, partial thromboplastin time.

Requirements for use of IT?

- Actively utilised electronic medical records
- Electronic order entry systems
 - Medication orders
 - Laboratory and imaging orders

DOCUMENTATION AND PROTOCOLS

Examples - JCI, ISO certification

We need to do this.

Why do these fail and why are they insufficient in themselves?

The Quality of Health Care Delivered to Adults in the United States

Table 3. Adherence to Quality Indicators, Overall and According to Type of Care and Function.

Variable	No. of Indicators	No. of Participants Eligible	Total No. of Times Indicator Eligibility Was Met	Percentage of Recommended Care Received (95% CI)*
Overall care	439	6712	98,649	54.9 (54.3–55.5)
Type of care				
Preventive	38	6711	55,268	54.9 (54.2–55.6)
Acute	153	2318	19,815	53.5 (52.0–55.0)
Chronic	248	3387	23,566	56.1 (55.0–57.3)
Function				
Screening	41	6711	39,486	52.2 (51.3–53.2)
Diagnosis	178	6217	29,679	55.7 (54.5–56.8)
Treatment	173	6707	23,019	57.5 (56.5–58.4)
Follow-up	47	2413	6,465	58.5 (56.6–60.4)

* CI denotes confidence interval.

Table 5. Adherence to Quality Indicators, According to Condition.*

Condition	No. of Indicators	No. of Participants Eligible	Total No. of Times Indicator Eligibility Was Met	Percentage of Recommended Care Received (95% CI)
Senile cataract	10	159	602	78.7 (73.3–84.2)
Breast cancer	9	192	202	75.7 (69.9–81.4)
Prenatal care	39	134	2920	73.0 (69.5–76.6)
Low back pain	6	489	3391	68.5 (66.4–70.5)
Coronary artery disease	37	410	2083	68.0 (64.2–71.8)
Hypertension	27	1973	6643	64.7 (62.6–66.7)
Congestive heart failure	36	104	1438	63.9 (55.4–72.4)
Cerebrovascular disease	10	101	210	59.1 (49.7–68.4)
Chronic obstructive pulmonary disease	20	169	1340	58.0 (51.7–64.4)
Depression	14	770	3011	57.7 (55.2–60.2)
Orthopedic conditions	10	302	590	57.2 (50.8–63.7)
Osteoarthritis	3	598	648	57.3 (53.9–60.7)
Colorectal cancer	12	231	329	53.9 (47.5–60.4)
Asthma	25	260	2332	53.5 (50.0–57.0)
Benign prostatic hyperplasia	5	138	147	53.0 (43.6–62.5)
Hyperlipidemia	7	519	643	48.6 (44.1–53.2)
Diabetes mellitus	13	488	2952	45.4 (42.7–48.3)
Headache	21	712	8125	45.2 (43.1–47.2)
Urinary tract infection	13	459	1216	40.7 (37.3–44.1)

← Significant Variation



Community-acquired pneumonia	5	144	291	39.0 (32.1–45.8)
Sexually transmitted diseases or vaginitis	26	410	2146	36.7 (33.8–39.6)
Dyspepsia and peptic ulcer disease	8	278	287	32.7 (26.4–39.1)
Atrial fibrillation	10	100	407	24.7 (18.4–30.9)
Hip fracture	9	110	167	22.8 (6.2–39.5)
Alcohol dependence	5	280	1036	10.5 (6.8–14.6)

* Condition-specific scores are not reported for management of pain due to cancer and its palliation, management of symptoms of menopause, hysterectomy, prostate cancer, and cesarean section, because fewer than 100 people were eligible for analysis of these categories. CI denotes confidence interval.

Causes of Protocol Violations

- Low likelihood of detection
- Inconvenient to perform
- Authority figure requests violation
- Copying behaviour
- No authority figure present to disapprove
- Others
 - Gender
 - Group or peer pressure

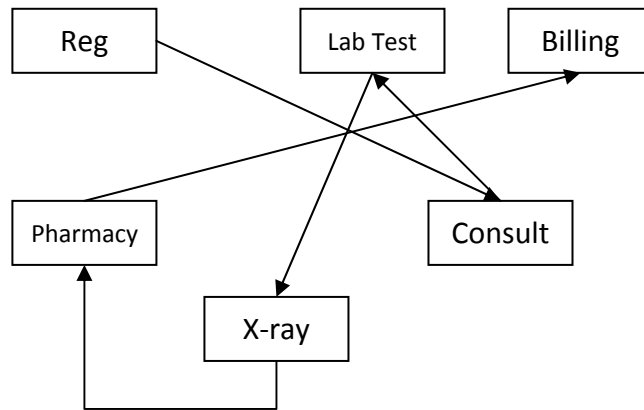
PROTOCOLS ARE TOUGH TO FOLLOW

Process Re-Design

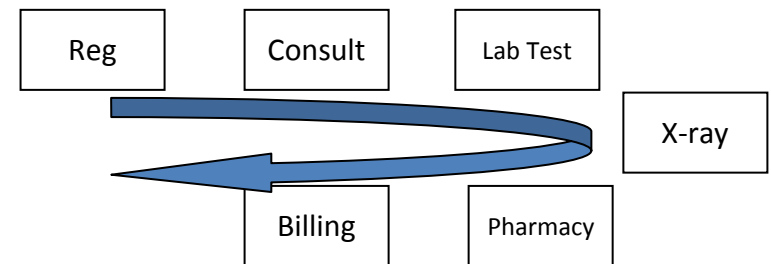
Identifying the value in the system

The Concept of (Continuous) Flow

OLD WAY

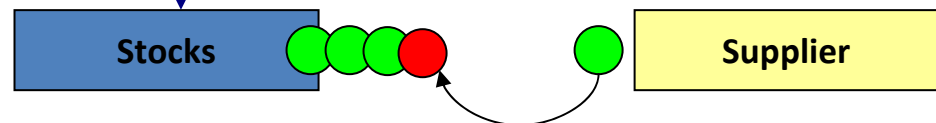


NEW WAY



Uneven Workload	Mon	Tues	Wed	Thurs	Total
10 Consult Rooms	10 sessions	2 sessions	10 sessions	2 sessions	24 sessions

Even Workload	Mon	Tues	Wed	Thurs	Total
7 Consult Rooms	7 sessions	7 sessions	7 sessions	7 sessions	28 sessions



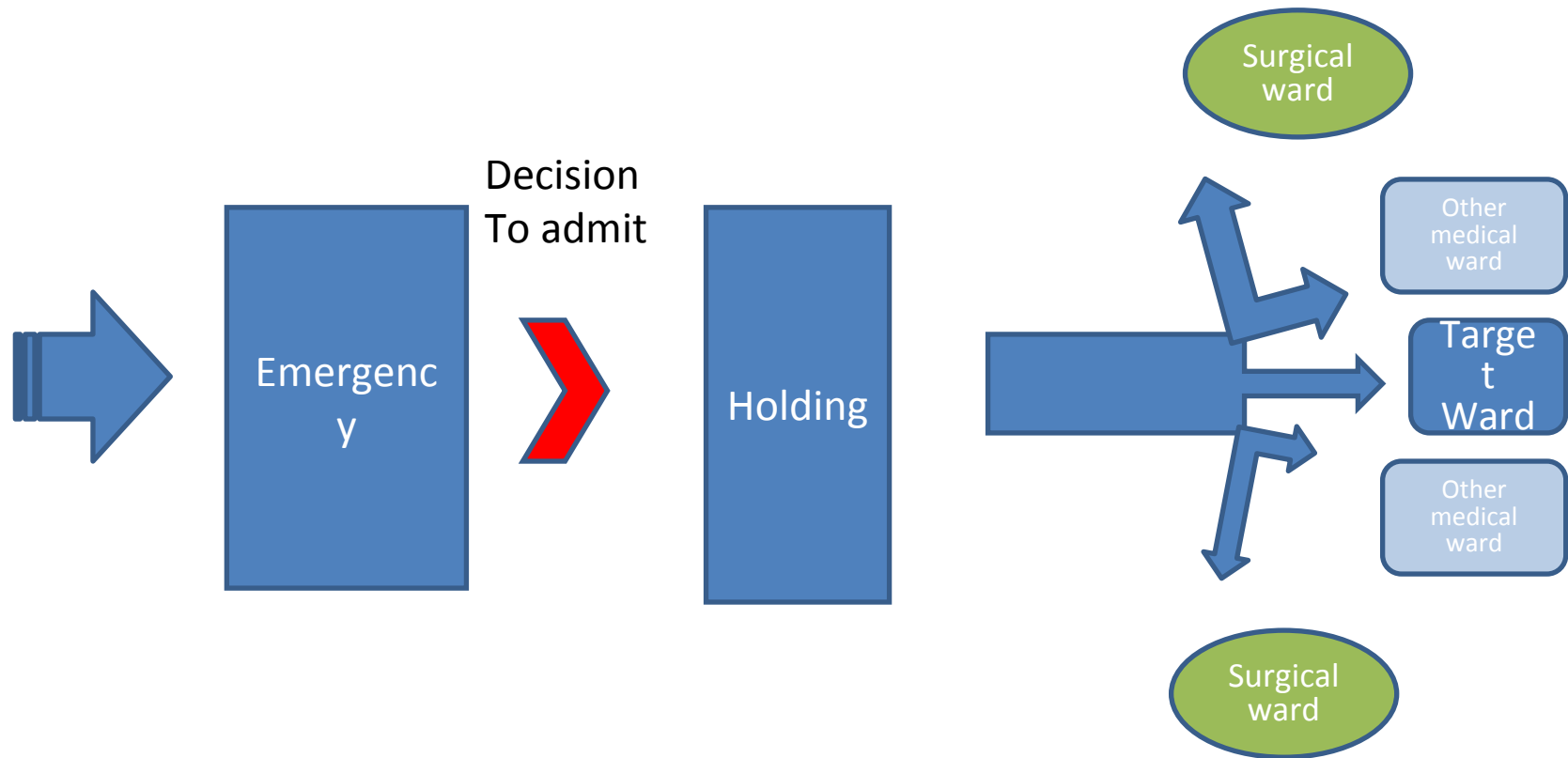
Achieving continuous flow

Patient Centred Teams, Quick Setup, Get rid of waste, bring cycle time to takt time, Workload Leveling, Match Supply to Demand, Pull systems

- So this builds in efficiency
 - From the administrators' perspective
 - Probably from the patients' perspective

But is there any benefit to healthcare professionals?

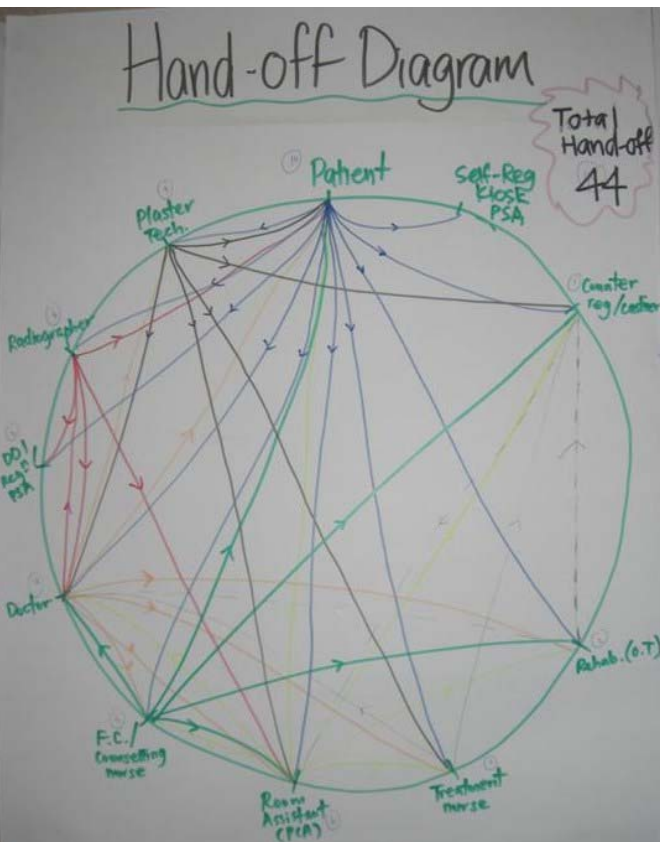
Admissions to General Medicine



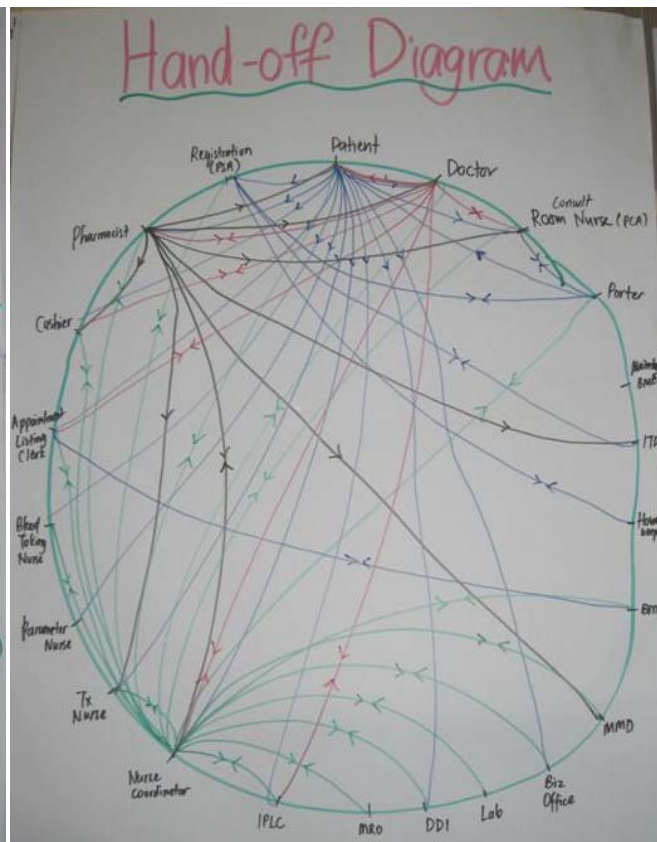
Implications?

- Patient scatter
 - Protracted ward rounds
 - Different nursing teams
 - Care by some nursing teams outside specialty
 - Coordination and communications suboptimal
- Admissions occur late in afternoon to night
 - Long waits at ED for admission
 - Definitive treatment delay
 - Staffing levels compromised at night
 - Care by more junior on call staff
 - Deferred definitive care solutions

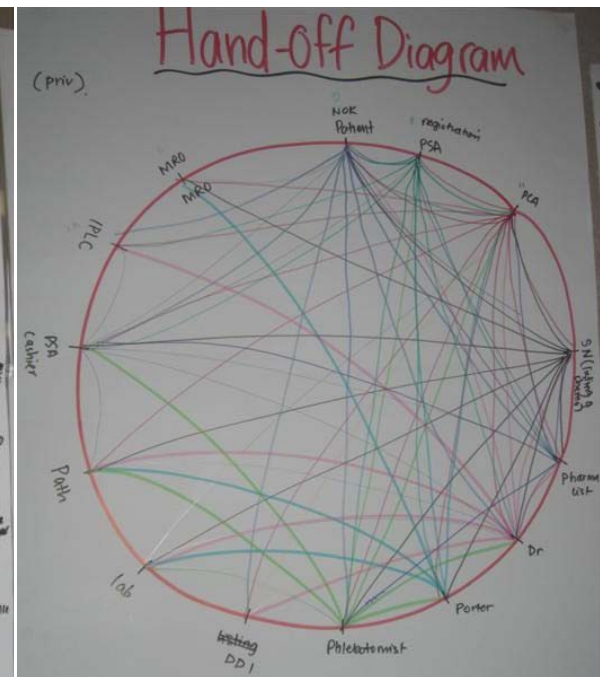
CURRENT STATE ANALYSIS HAND-OFF DIAGRAMS



Ortho
Team



Clinical
Team 1



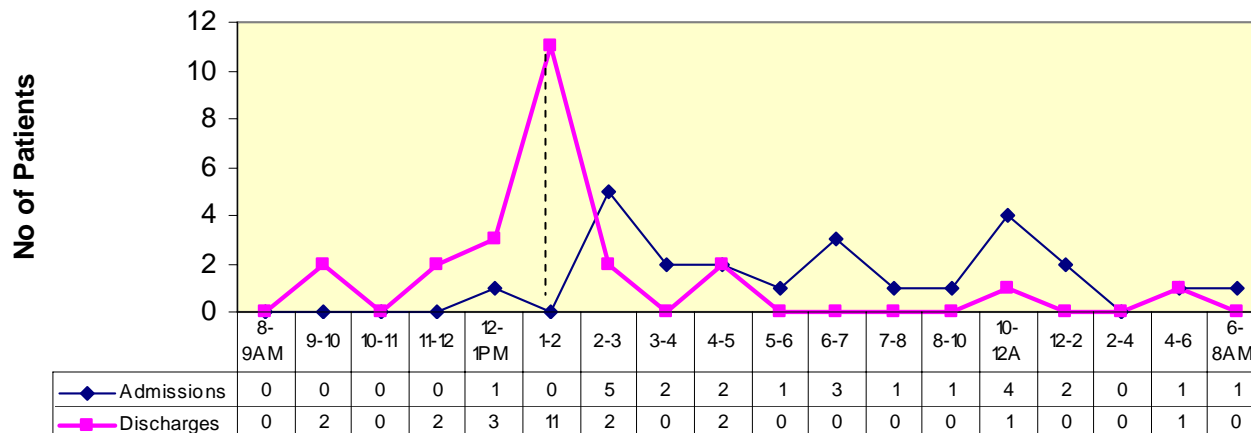
Clinical
Team 2

Partially re-engineered Process

Admission & Discharge Trend

10-15Jul 08

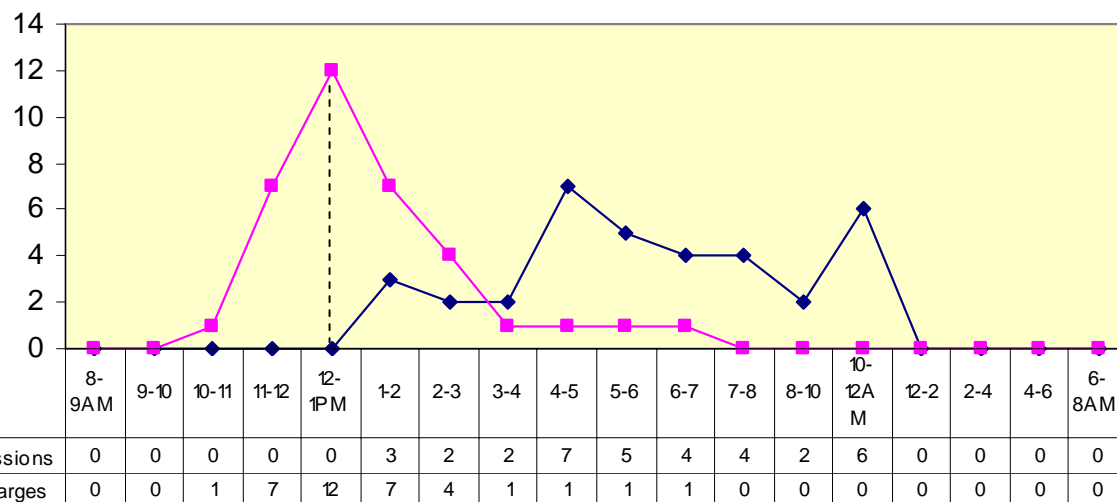
Ward 5x



Discharge & Admission Trend

16-22 Jul

Number fo patients



Discharge peak shifted

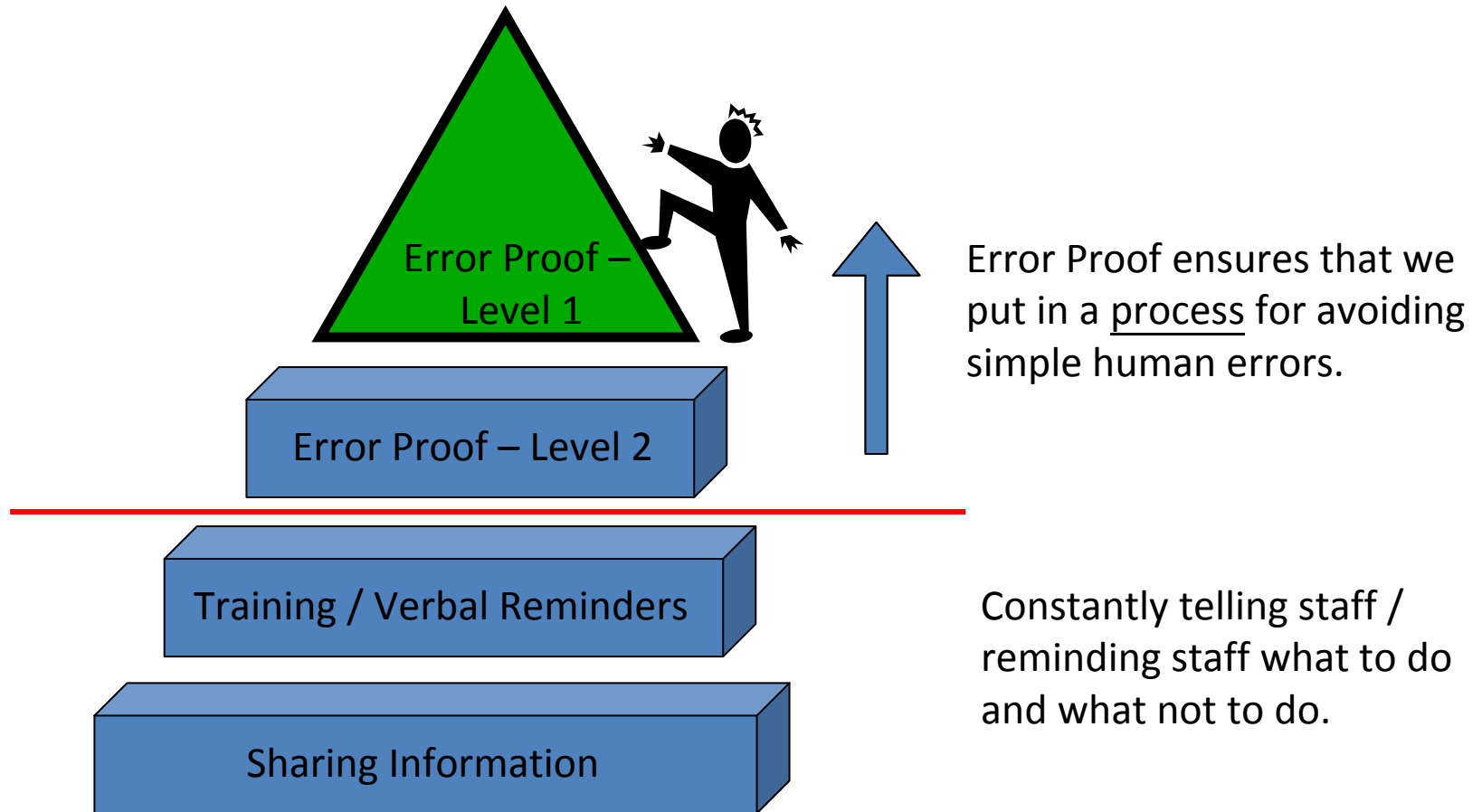
Impact of earlier discharges

- To patient
 - Shortened wait time to admission
 - Simpler discharge process
- To doctors and nurses
 - Rounds in fewer wards
 - Better coordination with familiar teams
 - Most work done during office hours**
 - Quieter night calls for juniors
- To system
 - Improved bed turnover and utilization rates
 - Cost savings for hospital**

But wait

HAVE WE IMPROVED SAFETY?

Can we error proof by design? – Built in Quality



Built in Quality

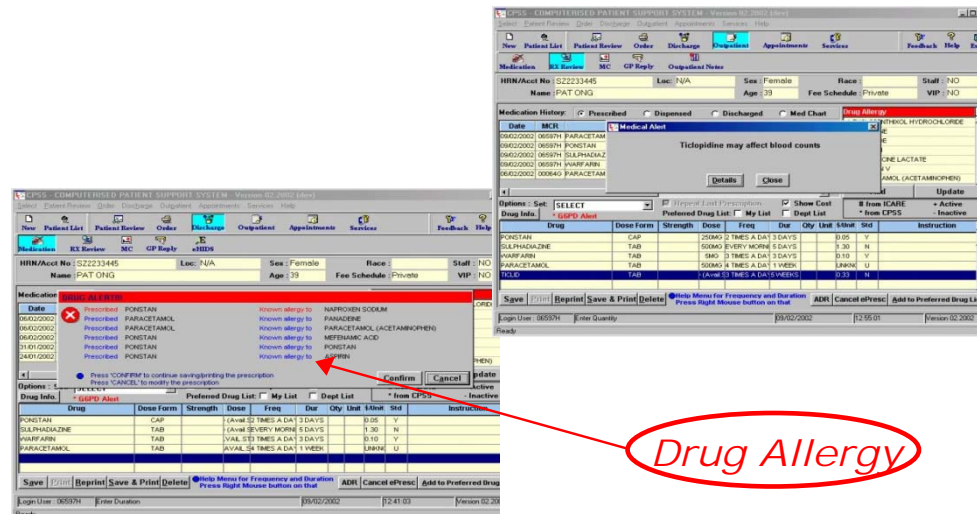
Error Proofing, Visible Controls to Identify Errors, Systems for us to respond to and solve staff needs

Error Proofing

Two Levels of Error Proofing :

Level 1: Put in place a system whereby *errors cannot be made*.

Eg. Diluted KCl, NRIC check digit in SAP, Drug allergy check in EMR



Level 2: Use Visual Controls

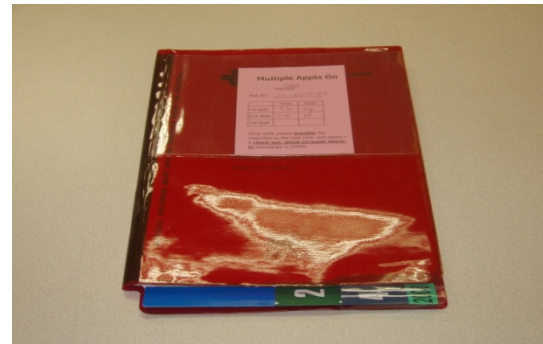
Built in Quality

Error Proofing, Visible Controls to Identify Errors, Systems for us to respond to and solve staff needs

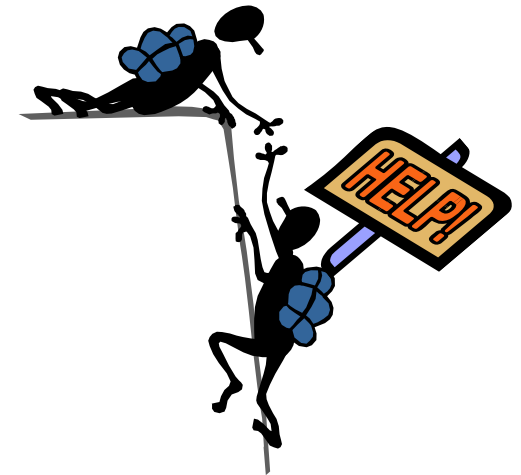
Visible Controls to Identify Errors

(Lower level of error proofing)

- Create system to bring immediate attention to an error or trigger action to prevent errors.



- Being there for our staff when they need help or pull the Andon Cord.



Built in Quality

Error Proofing, **Visible Controls to Identify Errors, Systems for us to respond to and solve staff needs**

Design out error



Outlet can Only fit oxygen flow meter

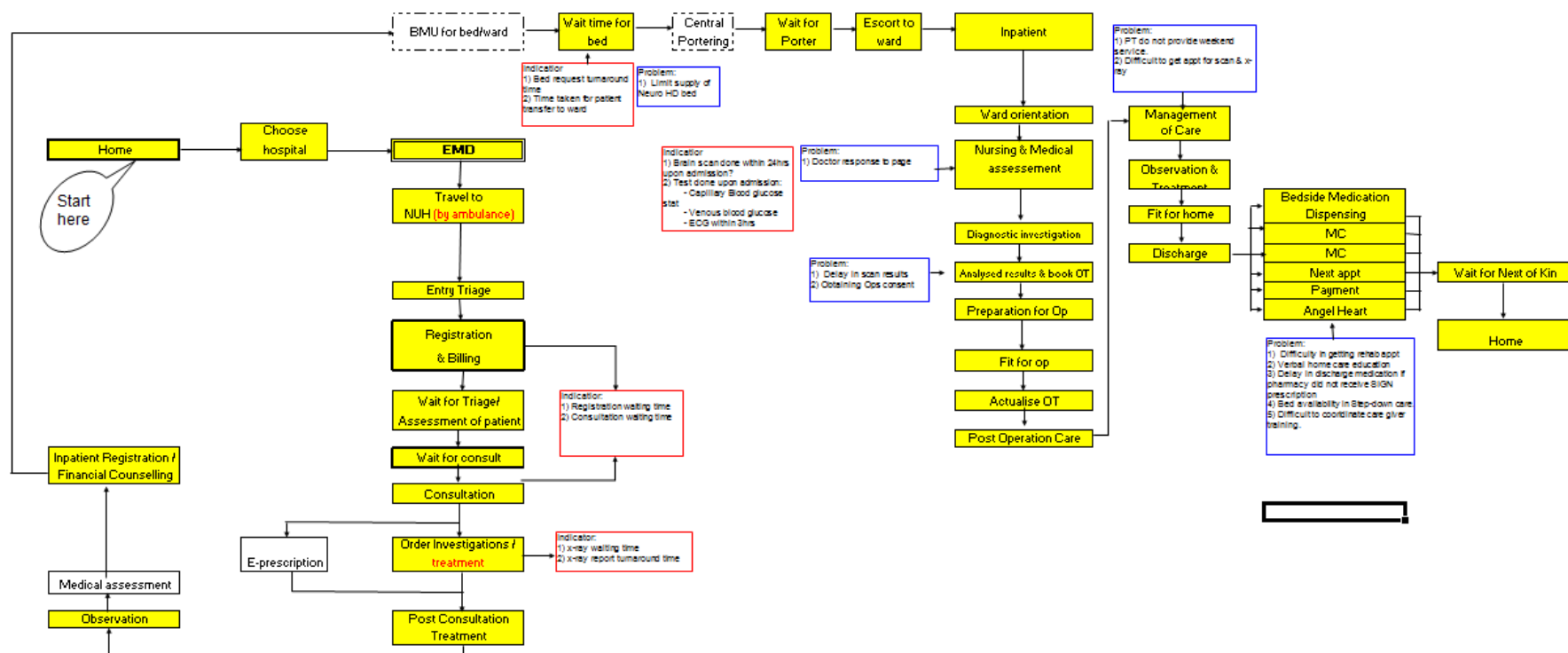
2-tiered system in Safe Care

- Tier 1
 - Ultra safety is achievable
- Tier 2
 - “Safer” attainable
 - Need for aggressive efforts to rescue patients means audacity and greater risk inherent in the process

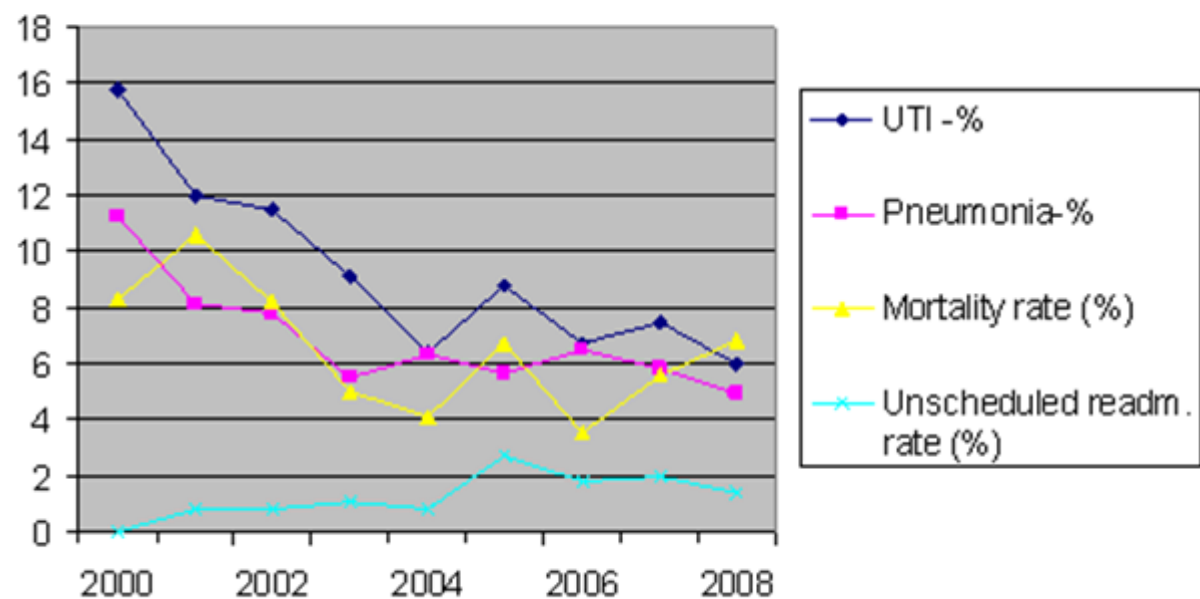
Why don't we apply evidence to care?

WE HAVE PLENTY OF GUIDELINES!

NUH Patient Process Flow



Stroke Outcomes



Applying known evidence to care ensures we
provide appropriate care

Appropriate care should be provided
consistently

Reality check...

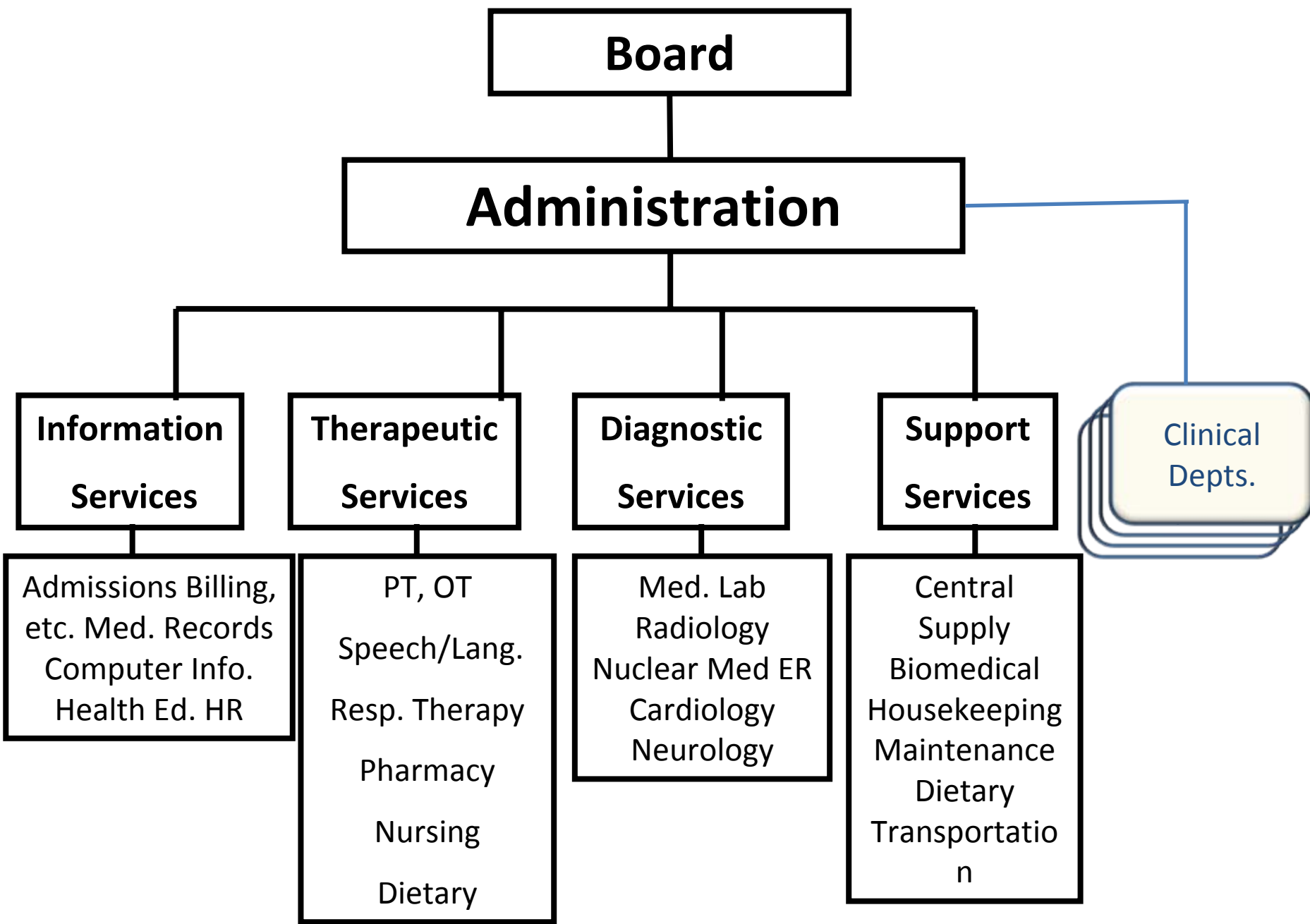
BURDEN OF ILLNESS

Stroke remains the third leading cause of death in the United States. However, hospital care has a relatively modest impact on patient survival, and most stroke deaths occur after the initial acute hospitalization. According to the literature, only 10-15% of stroke patients die during hospitalization.

AHRQ

We only tackle a small part of the process – real impact?

CARE CO-ORDINATION



Organization is into departmental or
“functional” silos

We are “comfortable” in this paradigm

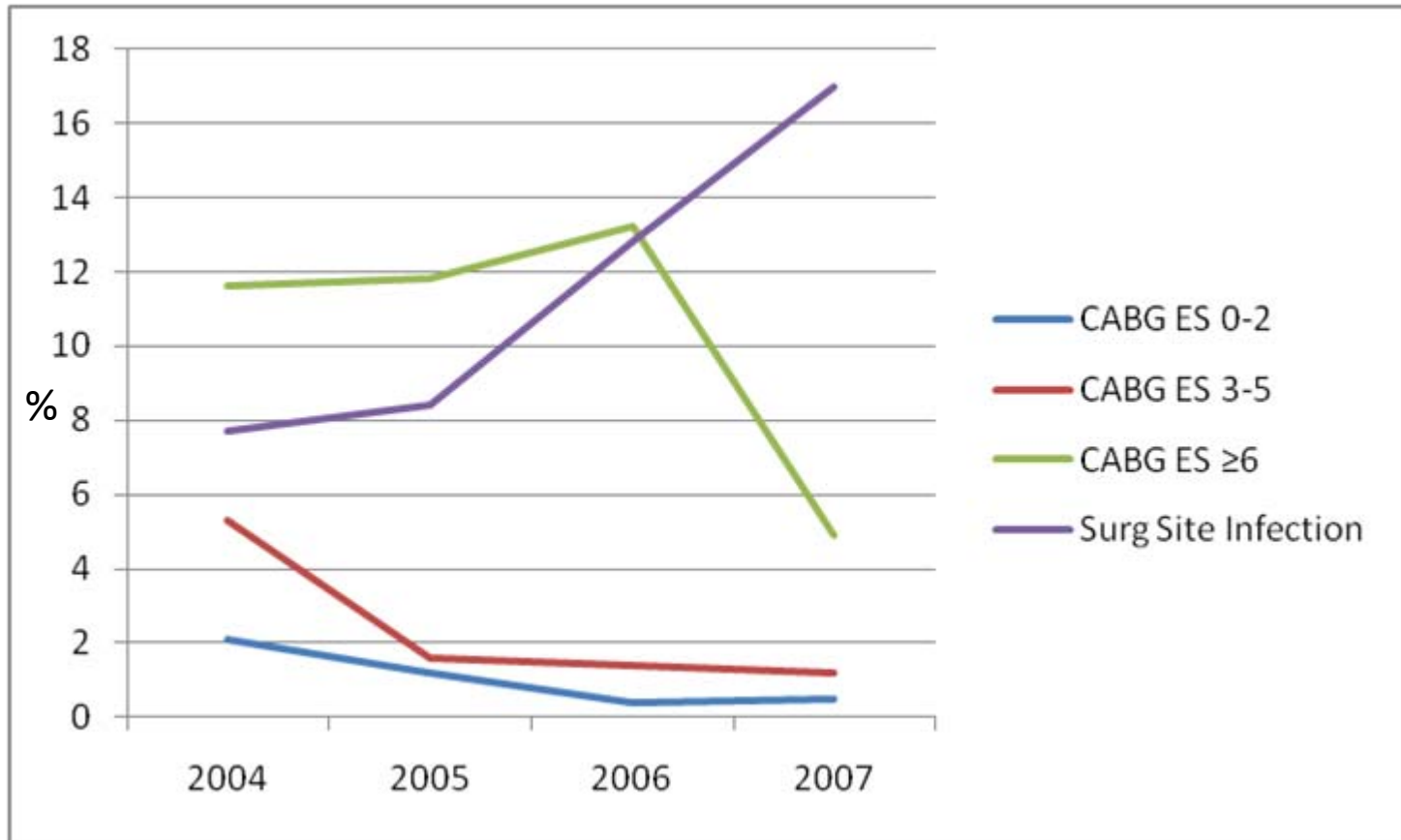
- *but this is where we need to think again &
where some of the fault lies!*

GET THE STRUCTURE RIGHT!

It is important that our healthcare is
structurally organised to optimise
performance!

Our structure is not mission directed

What's Wrong with this Chart?



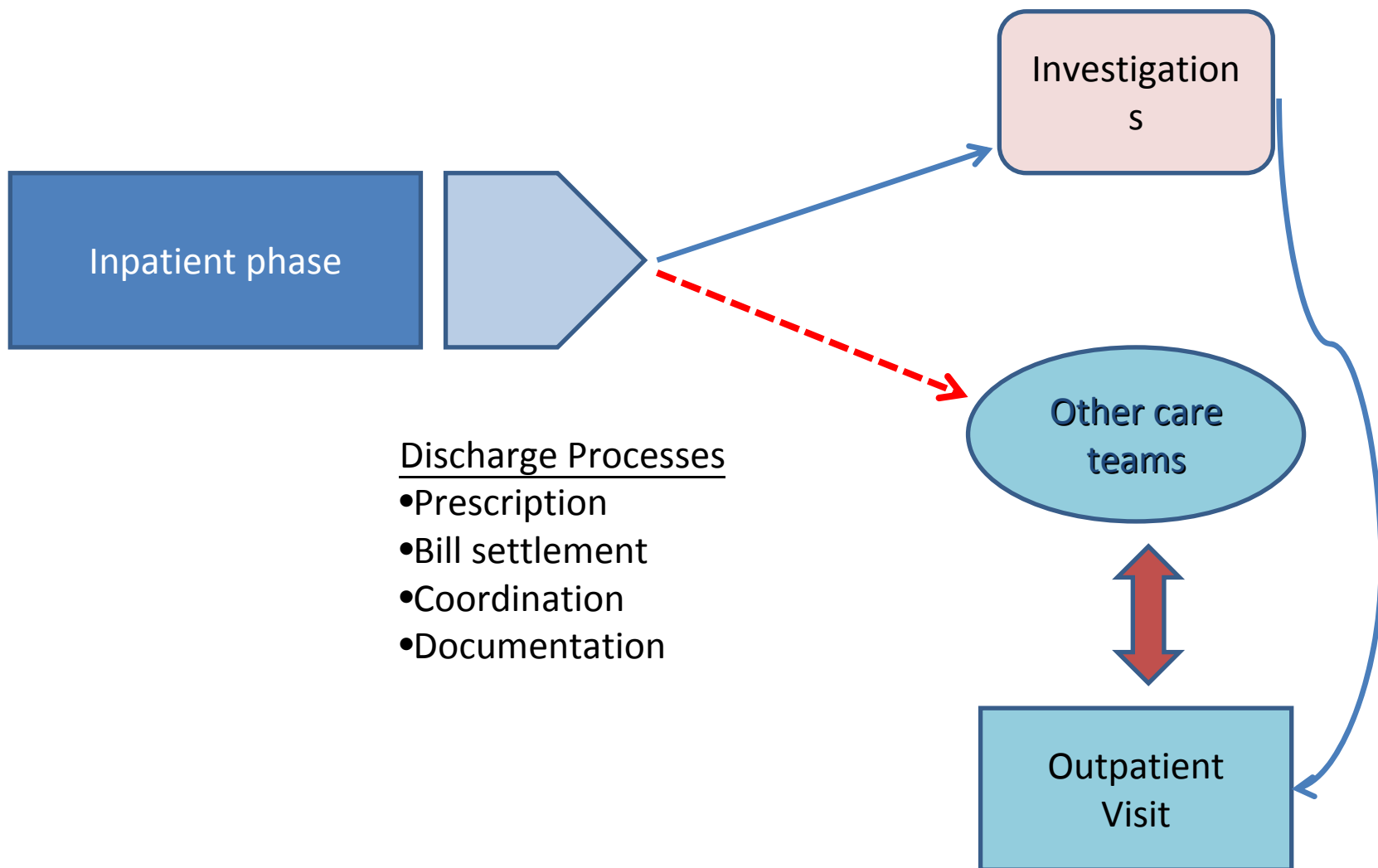
We also sometime track measures in silos

Surgical “wizardry” is admired

- But surgery is only part of the care process

Choose the right metrics to concentrate on

Watch the interfaces



Hospital Discharge is very complex

- 1 in 5 hospitalizations is complicated by post-discharge adverse events*
 - Some lead to preventable emergency department visits, readmissions or mortality
- Despite this hospital discharge procedures not usually standardized
- Communications to subsequent ambulatory and primary care providers (PCPs) deficient
 - Patient data not/inadequately transferred to subsequent caregivers

*Forster AJ et al. The incidence and severity of adverse events affecting patients after discharge from the hospital. Ann Intern Med. 2003;138:161-7.

Discharge Issues

- Coordination
 - Arrangements for appointments and placement
 - Pending results and actions
 - Post procedure care issues
- Communication
 - To outpatient care teams – primary, SOC, step-down
 - To relatives
- Medication management
 - Reconciliation does not stop at discharge meds
- Patient education
 - Oft neglected – multiple touch points!
- Discharge administration
 - Necessary but not central to care

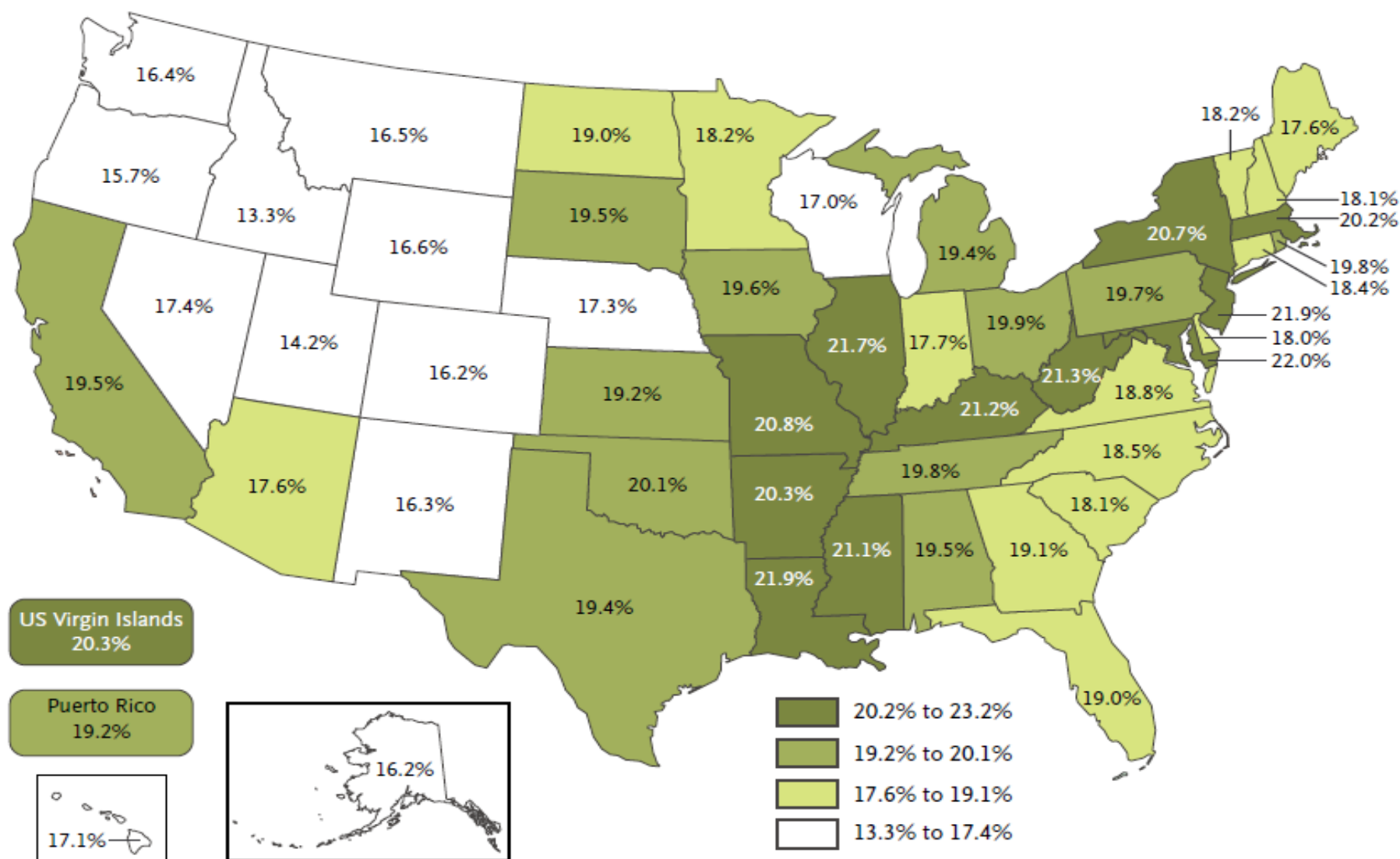


Figure 1. Rates of Rehospitalization within 30 Days after Hospital Discharge.

The rates include all patients in fee-for-service Medicare programs who were discharged between October 1, 2003, and September 30, 2004. The rate for Washington, DC, which does not appear on the map, was 23.2%.

Frequency of Failure to Inform Patients of Clinically Significant Outpatient Test Results

Lawrence P. Casalino, MD, PhD; Daniel Dunham, MD, MPH; Marshall H. Chin, MD, MPH; Rebecca Bielang, MD; Emily O. Kistner, PhD; Theodore G. Karrison, PhD; Michael K. Ong, MD, PhD; Urmimala Sarkar, MD, MPH; Margaret A. McLaughlin, MD; David O. Meltzer, MD, PhD

Table 1. Results by Practice Site

Primary Care Practice No.	Type/Size of Practice	No. of Primary Care MDs	Medical Records Reviewed/Excluded ^a	Abnormal Results	Failures to Inform	Failures to Document	Failure Rate, % ^b	Process Score (Range, 0-5) ^c	EMR ^d	MD Satisfaction Score (Range, 1-4) ^e
1	Small site of large practice	6	198/6	59	0	0	0	4.5	No	3.6
2	Small	2	151/3	38	0	0	0	4.5	No	3.0
3	Small	8	205/4	26	0	0	0	4.4	Yes	3.4
4	Small	5	150/3	73	1	0	1.4	4.1	No	3.0
5	Small	6	186/7	56	1	0	1.8	3.0	No	3.0
6	Large	28	169/8	247 ^f	7	0	2.8	3.8	Yes	3.2
7	Small	2	149/2	61	0	2	3.3	4.4	No	3.0
8	Small	3	151/0	29	0	1	3.4	5.0	No	3.8
9	Small	1	131/3	42	2	0	4.8	3.4	0	2.0
10	AMC	47	402/19	98	5	0	5.1	4.4	Yes	3.6
11	Small	5	149/3	57	3	0	5.3	4.1	No	2.8
12	Large	44	346/1	74	4	0	5.4	4.6	Partial	3.2
13	Small	7	198/3	54	3	0	5.6	3.3	No	3.6
14	Large	17	489/18	234	11	2	5.6	3.5	Yes	3.3
15	Small site of large practice	13	320/5	126	6	2	6.3	4.5	Yes	4.0
16	Small	4	150/6	35	3	0	8.6	4.4	No	4.0
17	Large	13	346/2	103	8	1	8.7	4.5	Partial	3.7
18	Small	3	151/0	34	3	0	8.8	3.9	No	4.0
19	AMC	23	369/9	158	13	2	9.5	3.1	No	3.1
20	Small	6	150/1	64	5	2	10.9	4.3	No	3.7
21	Small	4	196/1	39	5	1	15.4	3.1	No	3.3
22	AMC	47	349/14	121	24	2	21.5	0.9	Partial	1.7
23	AMC	33	329/11	61	13	3	26.2	2.0	Partial	2.2
Total or mean			5434/129	1889	117	18	7.1	3.8		3.2

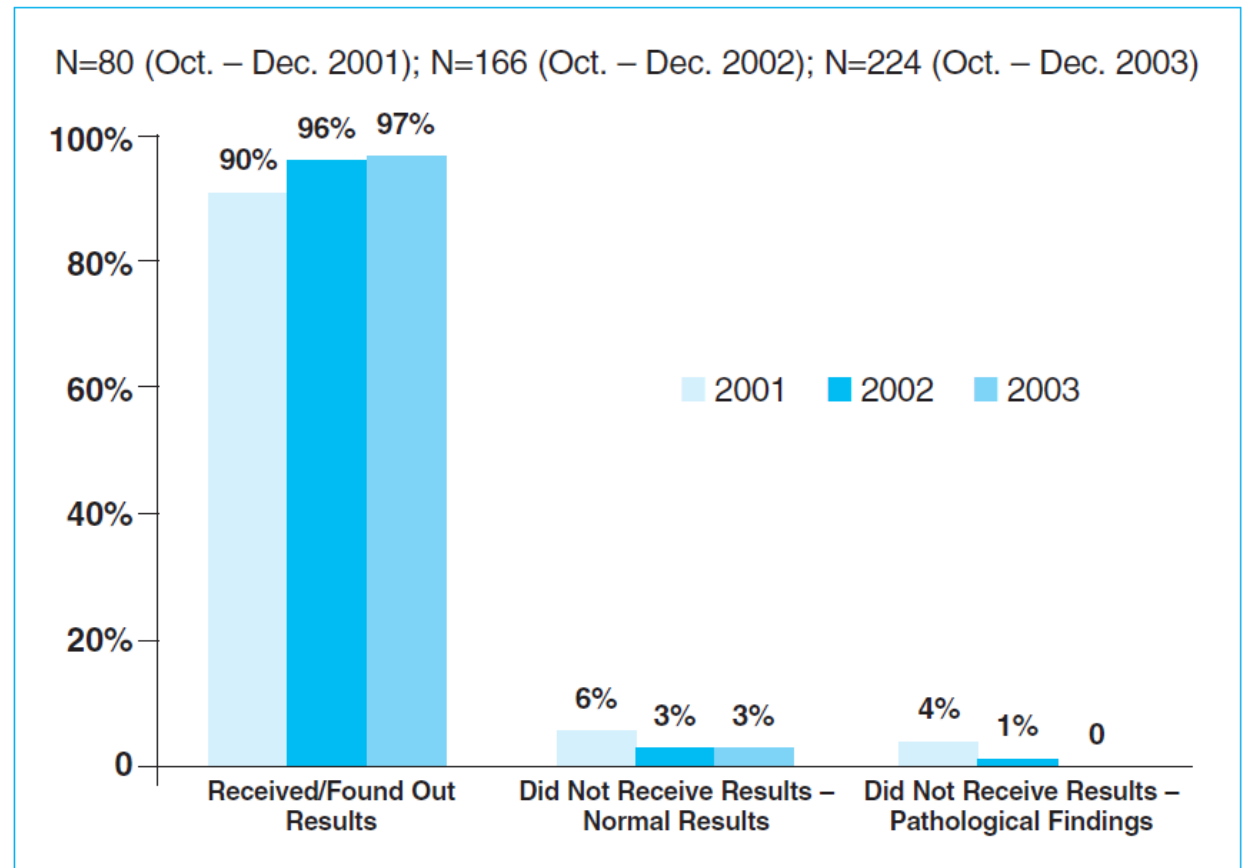
In re-designing processes, existing organizational structures need to be “broken down” and functional cross departmental teams formed.

Fixing only one component of the inter-connected system is not enough

Quality Improvement Program to Assure the Delivery of Pathology Test Results: A Systemic Intervention in a Large General Hospital

The study revealed that the surveyed physicians were unaware of almost two-thirds of the potentially actionable test results. The authors concluded that a better designed follow-up system for test results return is needed to notify physicians as well as patients (Roy et al., 2005).

Figure 1.
Breakdown by How Patients Received Test Results

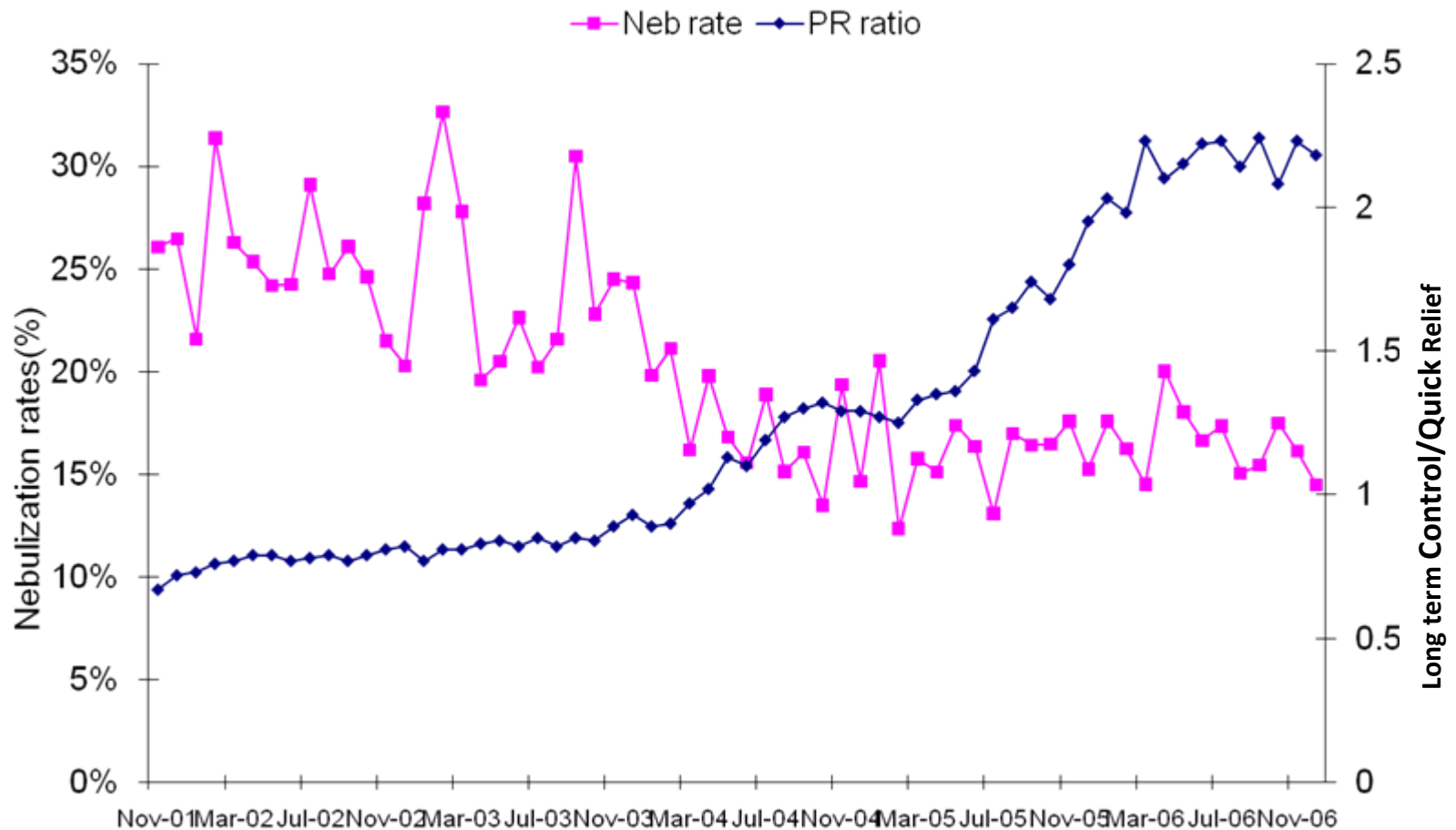


Why the whole system needs to change

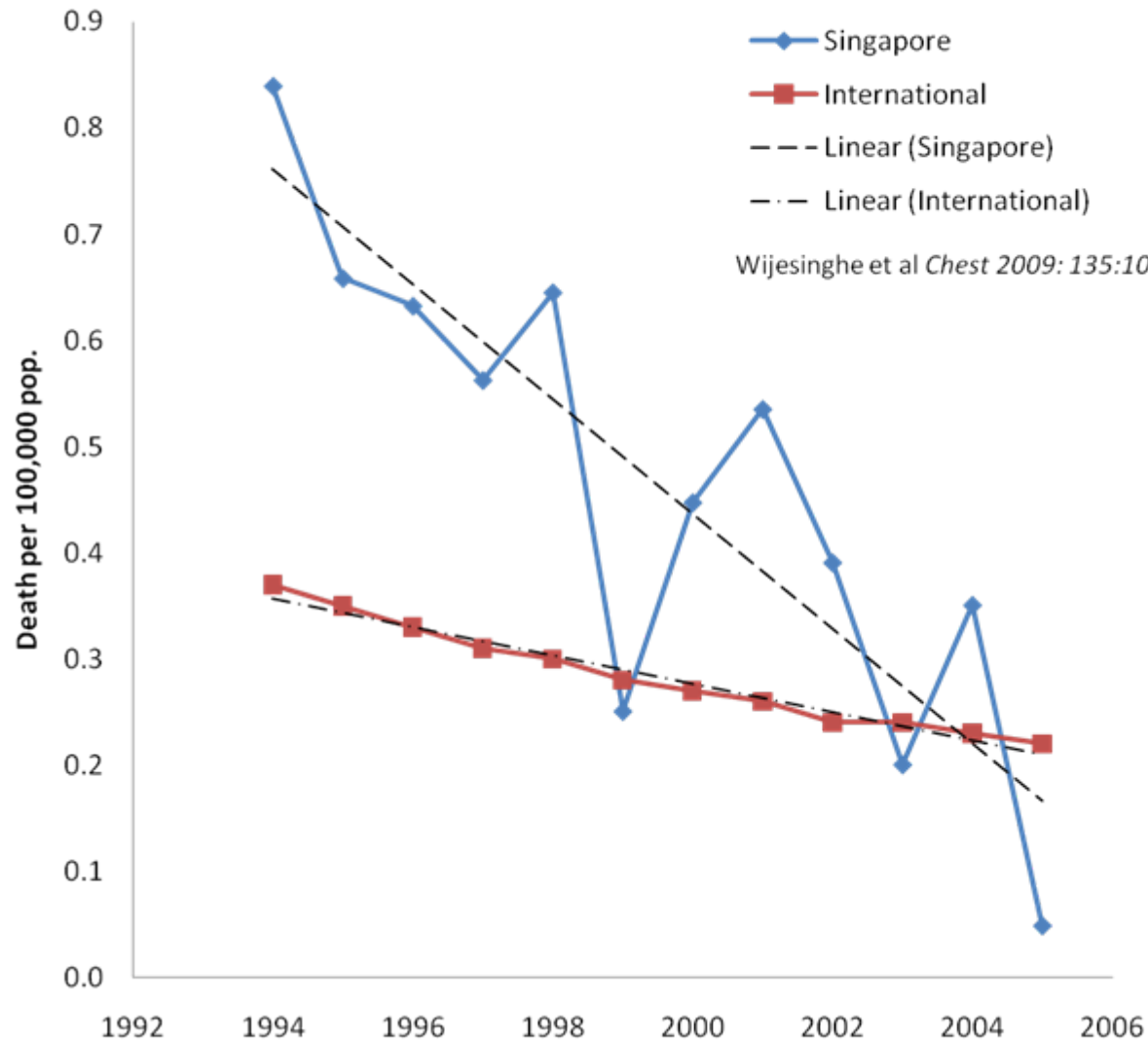
- The Asthma Story
 - Apply best evidence
 - Expected impact
 - Reduced mortality
 - Reduced morbidity
 - ED attendances
 - Hospital admissions
 - Clinic visits
 - Conserved resources for patients and healthcare

Asthma Control in Polyclinics

Polyclinics Asthma Treatment Vs Outcome



Trends in Asthma Mortality 5-34yrs of age



In asthma care, effective and consistent
application of evidence in treatment has
system wide effects

PROCESS CHANGE NEEDS TO BREACH INSTITUTIONAL BOUNDARIES

- to really impact patient outcomes at multiple points

Table 1. International Comparisons of Key Health Care Statistics*

Variable	United States	Australia	Belgium	Canada	Denmark	France	Germany	Japan
Infant mortality per 1000 births (2004)	6.8†	5	3.7	5.3†	4.4	3.6	3.9	2.8
Life expectancy at birth (2004)	77.8†	80.9	79.4†	80.2†	77.9	80.3	79	82
Population age >65 y (2007), %‡	12.5	13.1	17.4	13.3	15.2	16.4	19.4	20.0
Obesity rate	32.2†	20.4†	12.7†	18	11.4	9.5†	13.6	3†
Adult smoking rate	16.9	17.7†	20	17.3	26†	23†	24.3§	26.3 (2006)
Practicing physicians per 1000 persons	2.4	2.7†	4	2.2†	3.6	3.4	3.4†	2
Generalists of practicing physicians (2000), %¶	43.6	51.9	NA	47.5	19.1**	48.8	32.7	NA
Inpatient beds per 1000 persons	2.7	3.6†	4.4	2.9†	3.1†	3.7	6.4	8.2
MRI units per 1 million persons	26.6†	4.2	6.8	5.5	10.2†	3.2	7.1	40.1
Per capita health spending, \$	6401	3128†	3389	3326	3108	3374	3287	2358†
Prescription drug spending per capita, \$	792	383	344	559	270	NA	438	425
Drug spending as % of total health, \$	12.4	13.3	11.3	17.8 (2006)	8.9	16.4	15.2	19†

* Data are for 2005 (unless otherwise noted) from: World Health Organization. World Health Statistics 2007. Accessed at www.who.int/whosis/whostat2007.pdf on 22 May 2007 and Organization for Economic Co-operation and Development (OECD). OECD Health Data 2007. Accessed at www.oecd.org/document/30/0,3343,en_2649_37407_12968734_1_1_1_37407,00.html on 23 July 2007. MRI = magnetic resonance imaging; NA = not available.

† Latest available data: 2004.

‡ CIA World Factbook. Age Structure 65 Years and Over (%) 2007. Accessed at www.photius.com/rankings/population/age_structure_65_years_and_over_2007_0.html on 10 May 2007.

§ Latest available data: 2003.

¶ Latest available data: 2002.

¶ Colombo F, Tapay N. Private Health Insurance in OECD Countries: The Benefits and Costs for Individual and Health Systems. OECD, 2006.

** The low percentages of generalist physicians reported for Denmark and the Netherlands compared with other countries may be due to different methods for collecting and reporting workforce data. Further research is needed to better understand these apparent discrepancies.

Figure 5. Commonwealth Fund overall rankings of 6 countries, according to key indicators of performance.

Country Rankings

	1.00–2.66
	2.67–4.33
	4.34–6.00

	Australia	Canada	Germany	New Zealand	United Kingdom	United States
Overall Ranking (2007)	3.5	5	2	3.5	1	6
Quality Care	4	6	2.5	2.5	1	5
Right Care	5	6	3	4	2	1
Safe Care	4	5	1	3	2	6
Coordinated Care	3	6	4	2	1	5
Patient-Centered Care	3	6	2	1	4	5
Access	3	5	1	2	4	6
Efficiency	4	5	3	2	1	6
Equity	2	5	4	3	1	6
Healthy Lives	1	3	2	4.5	4.5	6
Health Expenditures per Capita, 2004	\$2876*	\$3165	\$3005*	\$2083	\$2546	\$6102

Source: Calculated by the Commonwealth Fund based on the Commonwealth Fund 2004 International Health Policy Survey, the Commonwealth Fund 2005 International Health Policy Survey of Sicker Adults, the 2006 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, and the Commonwealth Fund Commission on a High Performance Health System National Scorecard (65) (www.commonwealthfund.org).

*Data from 2003.

ENSURE STAFF STAY MOTIVATED

Getting the Best Staff Performance?

- Competency
 - Hire well qualified staff
 - Train well
- Autonomy
- Relatedness
 - Good peer groups and belonging
 - Collegiality and team work

Concluding Remarks

- We are human so we do and will make mistakes
 - Errors can be minimized
 - Not a single fix
 - But we need to start with our area of influence
 - IT can be an enabler to reduce errors
 - But care needed to map “to be” process 1st!
 - Aim for “closed loop systems”

Ingredients for Better Performance?

- People
- Processes
 - Whole system change needed
 - Reduce variability
 - Apply evidence
- Structure
- Measurement & benchmarking
 - Ensure the right parameters are used
 - Learn from the best
 - Look outside healthcare as well for leading practises

Thank you