Measuring what matters: how can we know we are delivering prudent healthcare?

Mary Dixon-Woods,
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Improving patient safety and quality

Intelligence

Culture and behaviour

Systems
Most health care organisations at present have very little capacity to analyse, monitor, or learn from safety and quality information. This gap is costly and should be closed.
William Petty 1623-1687
17th century performance management

• Mortality 1678-1679, Paris and London
  – L’Hotel Dieu: 28%
  – La Charité: 14%
  – St Bart’s and St Thomas’s: 12%

• Petty concluded that 3,000 of those who died in L’Hotel Dieu
  – ‘did not die by natural necessity, but by the evil administration of that Hospital’

  • http://www.theactuary.com/archive/old-articles/part-6/the-works-of-william-petty/
Francis Clifton (1732)

the less we refine and philosophize in physick, the better it will be for the Patient, whatever it may be for the Physician.

In order therefore to procure this valuable collection, I humbly propose,

First of all, that three or four persons of proper qualifications should be employ'd in the Hospitals, (and that without any ways interfering with the Gentlemen now concern'd) to set down the cases of the Patients there from day to day, candidly and judiciously, without any regard to private opinions or publick systems, and at the year's end publish these facts just as they are, leaving every one to make the best use of 'em he can for himself. Wou'd not some such method as this let us more
Ignaz Semmelweiss 1818-1865
Vienna Maternity Institution: rates of puerperal fever 1841-1849
Codman’s outcomes management

• Use of end-result cards
use of hospice care for Medicare patients with advanced cancer is increasing, many patients do not receive hospice care until they are literally on their deathbeds; and, despite increases in the use of hospice care, more patients were treated in intensive care units in their last month of life in 2010 than in the period from 2003 to 2007. Where patients with advanced cancer live continues to play an important role in the care they receive. Read the brief, press release or download data tables.

MEASURING UP? END-OF-LIFE CANCER CARE IN CALIFORNIA

This report on treatment of cancer...
Need for measurement

• So measurement is really important if we want to know about quality and safety of care
• But it is not easy
• And it is not the only way of knowing
Challenges in determining whether care is safe

- Safety is not a simple dichotomy of safe or unsafe
- Outcomes are often hard to measure and serious events are rare
- Structures and processes have complex pathways to outcomes
Technical challenges

• Very easy to underestimate the technical difficulties of measurement
• Instrumentation is poor and difficult to use
How do you count a bed?

https://annadixon.blog.gov.uk/2014/05/30/how-do-we-compare/
Adding social to technical

- Classification, counting and measurement are all inherently social practices
How do you count an infection?
What Counts? An Ethnographic Study of Infection Data Reported to a Patient Safety Program

MARY DIXON-WOODS, MYLES LESLIE, JULIAN BION, AND CAROLYN TARRANT
What is preventable?

• Many harms are in principle preventable
• But boundaries of preventability are often unclear
• And involve difficult trade-offs
How do you count a preventable death?
• 44,000 to 98,000 preventable deaths
• Based on one study from 1984 and another from 1992 using case note review
• Extrapolated figures using number of hospitalisations
• GTT estimated 210,000 preventable adverse events annually that contribute to death of patients in US hospitals (34.4m hospitalisations)

• But we don’t know how many are actually preventable

A New, Evidence-based Estimate of Patient Harms Associated with Hospital Care

John T. James, PhD

Objectives: Based on 1984 data developed from reviews of medical records of patients treated in New York hospitals, the Institute of Medicine estimated that up to 98,000 Americans die each year from medical errors. The basis of this estimate is nearly 3 decades old; herein, an updated estimate is developed from modern studies published from 2008 to 2011.

Methods: A literature review identified 4 limited studies that used primarily the Global Trigger Tool to flag specific evidence in medical...
• Marked differences in GTT harm rates in 5 Danish hospitals
• Training, experience, procedures
• 5% of deaths deemed preventable
• Most problems related to basic processes of care
• Most patients whose death was preventable were older people
How do you count wrong-site surgery?
Beyond blame: cultural barriers to medical incident reporting

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Available online 18 November 2004

Abstract

The paper explores the attitudes of medical physicians towards adverse incident reporting in health care, with particular focus on the inhibiting factors or barriers to participation. It is recognised that there are major barriers to medical reporting, such as the 'culture of blame'. There are, however, few detailed qualitative accounts of medical culture as it relates to incident reporting. Drawing on a 2-year qualitative case study in the UK, this paper presents data gathered from 28 semi-structured interviews with specialist physicians. The findings suggest that blame certainly inhibits medical reporting, but other cultural issues were also significant. It was commonly accepted by doctors that errors are an 'inevitable' and potentially unmanageable feature of medical work and incident reporting was therefore 'pointless'. It was also found that reporting was discouraged by an anti-bureaucratic sentiment and rejection of excessive administrative duties. Doctors were also apprehensive about the increased potential for managers and non-doctors to engage in the regulation of medical quality through the use of incident data. The paper argues that the promotion of incident reporting must engage with more than the ubiquitous 'culture of blame' and instead address the 'culture of medicine', especially as it relates to the collegial and professional control of quality.
How do you measure improvement?

- Insufficient data points
- Lack of sufficient baseline periods
- Changing samples and sampling strategies
- Inadequate annotations of changes
Judging quality and safety

• Three major rankings of US hospitals

• MGH gets A from Leapfrog, ranked top by US News and Word report, but gets 45 out of 100 from Consumer Reports

• Bottom six in the CR ranking all got A from Leapfrog

Only a handful of consistently high performing hospitals, and may be a chance finding
The story of one UK hospital

• Regulator rated this hospital as one of four “most improved” hospitals in 2006/7
• Based on self-assessment against core indicators, provisionally rated “good” in 2007/8
• Dr Foster’s Good Hospital Guide (2009) identified it as among 5 most improved over last three years
• November 2009 – ranked in best 10 in league tables for HSMR
The story of one UK hospital

Sir Robert Francis said care was “appalling”
The Inquiry

“Some of the treatment of elderly patients could properly be characterised as abuse of vulnerable persons.”
“It soon became clear that the real position of the hospital in the national league of awfulness did not matter. What did matter was that many patients had received poor care and, for some, their treatment was appalling.”

• Dr Paul Woodmansey
  http://www.hospitaldr.co.uk/blogs/tag/mid-staffordshire
Culture and behaviour in the English National Health Service: overview of lessons from a large multimethod study

Mary Dixon-Woods,1 Richard Baker,1 Kathryn Charles,2 Jeremy Dawson,3 Gabi Jerzembek,4 Graham Martin,1 Imelda McCarthy,4 Lorna McKee,5 Joel Minion,1 Piotr Ozieranski,6 Janet Willars,1 Patricia Wilkie,7 Michael West8

ABSTRACT

Background Problems of quality and safety and high-quality care. Organisations need to put the patient at the centre of all they do. Get smart...
Intelligence

• Variability in quality of intelligence available to and used by boards
• Extent to which data converted into actionable knowledge and then effective response varied
• Problem-sensing versus comfort-seeking behaviours
Priority thickets

• Too many externally imposed priorities that conflict, compete or fail to cohere
• Same information required in different forms at great cost
• Distraction, frustration, loss of focus and energy
Sense of confusion, frustration and powerlessness

“Yes, I think the trust genuinely does have quality at its core but sometimes we lose our way. ... Because there are sometimes lots and lots of different targets, lots of imperatives. Lots of those can conflict with each other.”
Problem-sensing

“One of our values is honesty. We should know how good our outcomes are: not say ‘Well, we think they’re quite good,’ we should actually know. It’s warts and all. It’s very uncomfortable, but hugely illuminating as to what is actually going on.”
Comfort-seeking and blind-spots

She said it was really just a check, that they didn’t disturb patients. They just sort of looked around and ticked off the sheet.
“The story of Mid Staffordshire is in large part a story of leaders, supervisors and regulators interpreting data in a way that confirmed and supported existing beliefs and assumptions about safety, discounting or overlooking data that conflicted with those beliefs, and failing to actively seek out and explore disconfirming cases. The effective monitoring of safety and quality depends on the exact opposite.”
Measurement done badly

- Illusion of control
- Blindsight
The reactivity of measurement

• Not just a problem of finding the right measures
• Measurement does not simply describe: it also acts on what it measures
• Measurement in healthcare is often deliberately performative
Measurement as discipline

- Organisations and individuals orient themselves to what is measured
- Hard governance: rewards and penalties tied to performance
- Soft governance: people internalise what it means to be “good” as defined by the measures
- Status regimes are created: elites and losers
Some adverse effects of performance measurement

- Kelman and Friedman (2009):
  - Effort substitution
  - Gaming
Effort substitution

• When people direct their attention to the thing being measured at the expense of other valuable activities that are not measured
Gaming: deliberate attempts at manipulation

Under-counting of plague deaths to appease municipal authorities
Intelligence

• If you’re not measuring, you’re not managing
• If you’re measuring stupidly, you’re not managing
• If you’re only measuring, you’re not managing
The puzzle of measurement is that numbers are powerful and fragile, simple and qualified, trusted and distrusted simultaneously. (Power, 2004)
Staff and patients are among the very best sources of intelligence

- Data on staff morale, wellbeing and teamwork
- Evidence from staff and patients about what concerns them and what they value
- Whether staff and patients would recommend the service to others
Fugitive knowledge

- Normalised so not readily visible
- May be hard to distinguish usual moans from serious concerns
- May be forbidden knowledge
- May be dangerous to reveal
- Its quality as evidence uncertain
Normalization of deviance

- Poorly designed systems
- Workarounds and short-cuts
- No harm, no foul mentality makes it hard to challenge

http://30yearoldninja.com/10-absurd-cartoons-inspire-disturb/
Fugitive knowledge

- Relationships, tensions, constipators, bad apples
When following the leader can lead into the jaws of death

13 May 2008

International study of animal behaviour has important implications for human decision-making.

For animals that live in social groups, and that includes humans, blindly following a leader could place them in danger.

To avoid this, animals have developed simple but effective behaviour to follow where at least a few of them dare to tread - rather than follow a single group member.

This pattern of behaviour reduces the risk of imitating maverick behaviour of an individual as the group recognise that consensus is better than following someone that goes it alone.

The study was carried out at the University of Leicester, by Ashley J W Ward, now at the University of Sydney, in collaboration with David J T Sumpter of Uppsala University; Jan D Couzin of Princeton University; Paul J D Hart of the University of Leicester and John Krause of the University of Leeds. It is published in the Proceedings of the National Academy of Sciences (PNAS). The research was funded by the Natural Environment Research Council.
The Trunchbull principle

"Never do anything by halves if you want to get away with it. Be outrageous. Go the whole hog. Make sure everything you do is so completely crazy it's unbelievable. No parent is going to believe this pigtail story.”
For prudent healthcare

You need to sweat the small stuff
Poor reliability of systems

- Reliability of 81% to 87%
- Availability of equipment in theatres ranges from 63% to 88%
- In outpatient clinics, 15% of patients lack some type of relevant clinical information
Healthcare systems

- Piecemeal systems – nobody has ever designed them
- How they function in practice is often poorly understood
- Ad hoc improvisations and adaptations are the norm
- The blunt end often has very poor grasp of the operational detail at the sharp end
dropping paper.”

We designed the next studies to include a variety of norms in order to address two questions. We wanted to determine whether the cross-norm inhibition effect was restricted to generally accepted social norms or whether, as expected by the goal-framing theory, it also extended to local ordinances by the police or even to normative requests set up by private companies. We also wanted to determine how far the influence would go. In other words, would a norm violation just affect relatively light infractions, such as littering, or would it go so far as to affect the willingness to violate such serious norms as “thou shalt not steal”?

For study 2, we used a police ordinance as a contextual norm and “no trespassing” (as ordered by the police) as the target norm in the setting of a car park. Thus, both contextual and target norms were not general social norms but rules set up by the local police for a particular local situation. A temporary fence (set up by us) closed off the main entrance for people who came to pick up their car, but a gap of about 50 cm was left open in the fence (Fig. 2). We attached two signs to the temporary fence just 60 cm apart and directly next to the gap. The right sign (our contextual norm) indicated that it was prohibited to lock bicycles to the fence. The left sign (our target norm) made clear that it was prohibited to use this entrance and that people had to use an alternative entrance to the car park, which required walking a 200-m detour. In the order condition, four bicycles standing 1 m before the fence were ostensibly not locked to the fence.

In the disorder condition, four bicycles were locked to the fence for everyone to see. The dependent variable was whether pedestrians conformed to the “no throughway” sign (the target
Applying the lessons of high risk industries to health care

P Hudson

High risk industries such as commercial aviation and the oil and gas industry have achieved exemplary safety performance. This paper reviews how they have managed to do that. The primary reasons are the positive attitudes towards safety and the operation of effective formal safety management systems. The safety culture provides an important explanation of why such organisations perform well. An evolutionary model of safety culture is provided in which there is a range of cultures from the pathological through the reactive to the calculative. Later, the proactive culture can evolve towards the generative organisation, an alternative description of the high reliability organisation. The current status of health care is reviewed, arguing that it has a much higher level of accidents and has a reactive culture, lagging behind both high risk industries studied in both attitude and systematic management of patient risks.

require considerable effort to progress past its current stage.

This paper first describes how two different high risk industries have developed in their approach to safety. It will then examine how they regard safety and will review the attitudes, mechanisms, and processes put in place. The current status of health care, as seen from this industrial point of view, will then serve as the basis for a discussion about how health care might be developed to create, within the profession, a culture of safety more comparable with the highly hazardous industries described.

COMMERCIAL AVIATION

From the first flights of the Wright brothers in 1903, aviation has always been dangerous. Even today, although it is one of the safest activities people participate in, many people still feel that it is extremely dangerous, and even refuse to fly. While the hazards remain real, their effective
Practices of listening: must be authentic and followed by action
Walkrounds in Practice: Corrupting or Enhancing a Quality Improvement Intervention? A Qualitative Study

Graham P. Martin, Piotr Ozieranski, Janet Willars, Lorna McKee, Kathryn Charles, Joel T. Minion, Mary Dixon-Woods
Only 40% of staff say employers listen to their concerns about the working environment.
Only 36% say they are able to contribute towards improvements at work.
• Many of the issues underlying unreliable processes are BIG and HAIRY
Get better at matching problems to solutions

• Small improvement projects and PDSA cycles have a very important role

• But not all problems are tractable to this approach
#hello my name is...

Peter Pronovost
Conclusions

• No single indicator will tell you whether care is safe
• Measurement is performative
• Need multiple methods for problem-sensing
• Need ways of discovering fugitive knowledge in organisations
• For prudent healthcare: listen and act