University of Leicester

Hard data and soft intelligence: how can we know if care is safe?

Mary Dixon-Woods,

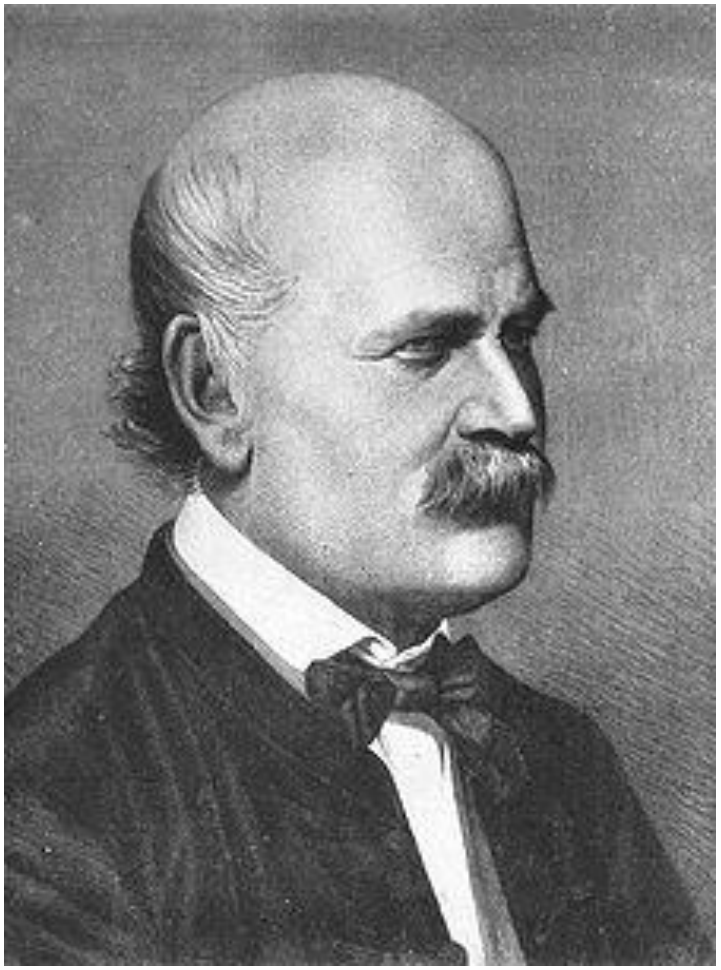
University of Leicester

William Petty 1623-1687

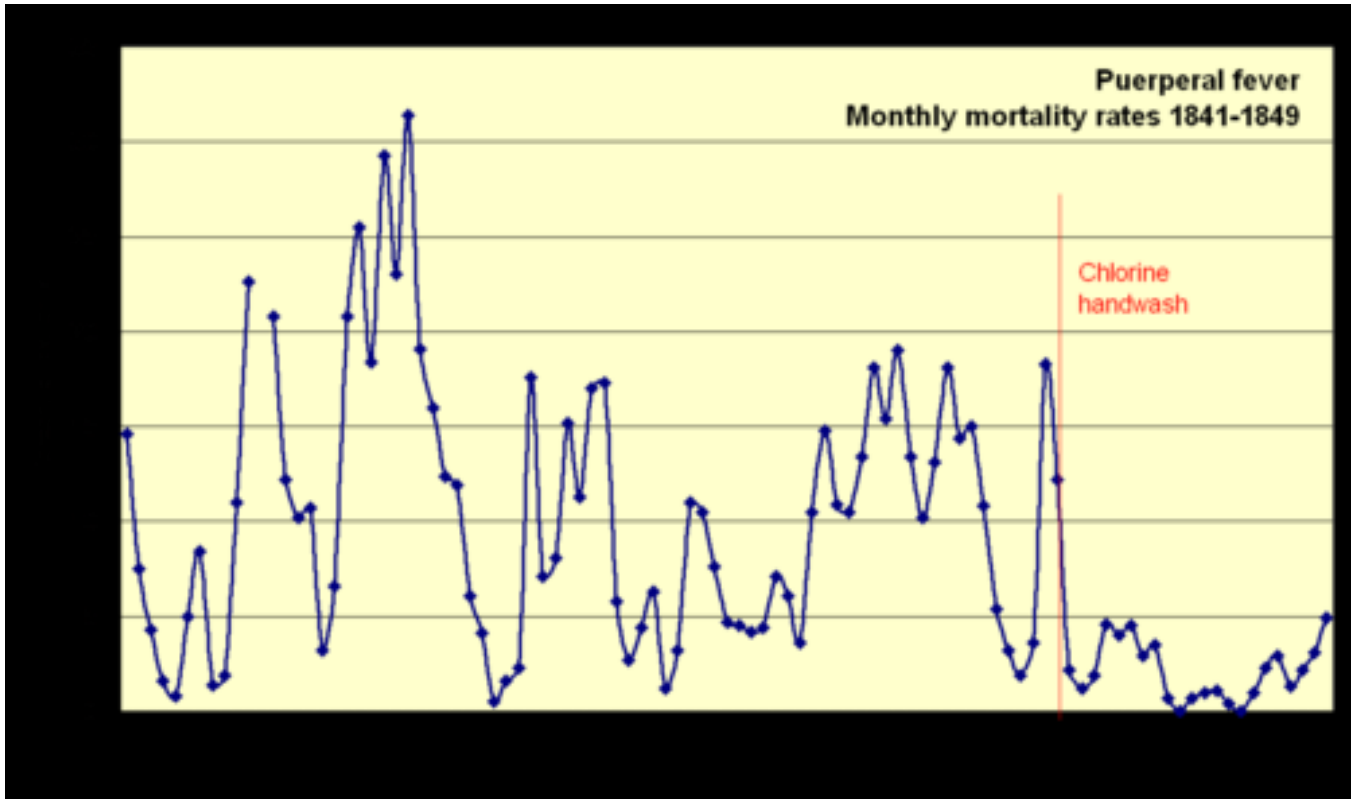
17th century performance management

- 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/

Ignaz Semmelweiss 1818-1865



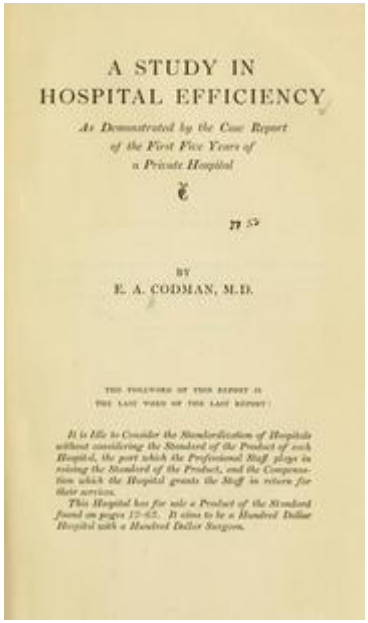
Vienna Maternity Institution: rates of puerperal fever 1841-1849



Ernest Codman 1869-1940

Codman's outcomes management

- Use of end-result cards



A STUDY IN
HOSPITAL EFFICIENCY

As Demonstrated by the Case Report of the First Five Years of a Private Hospital

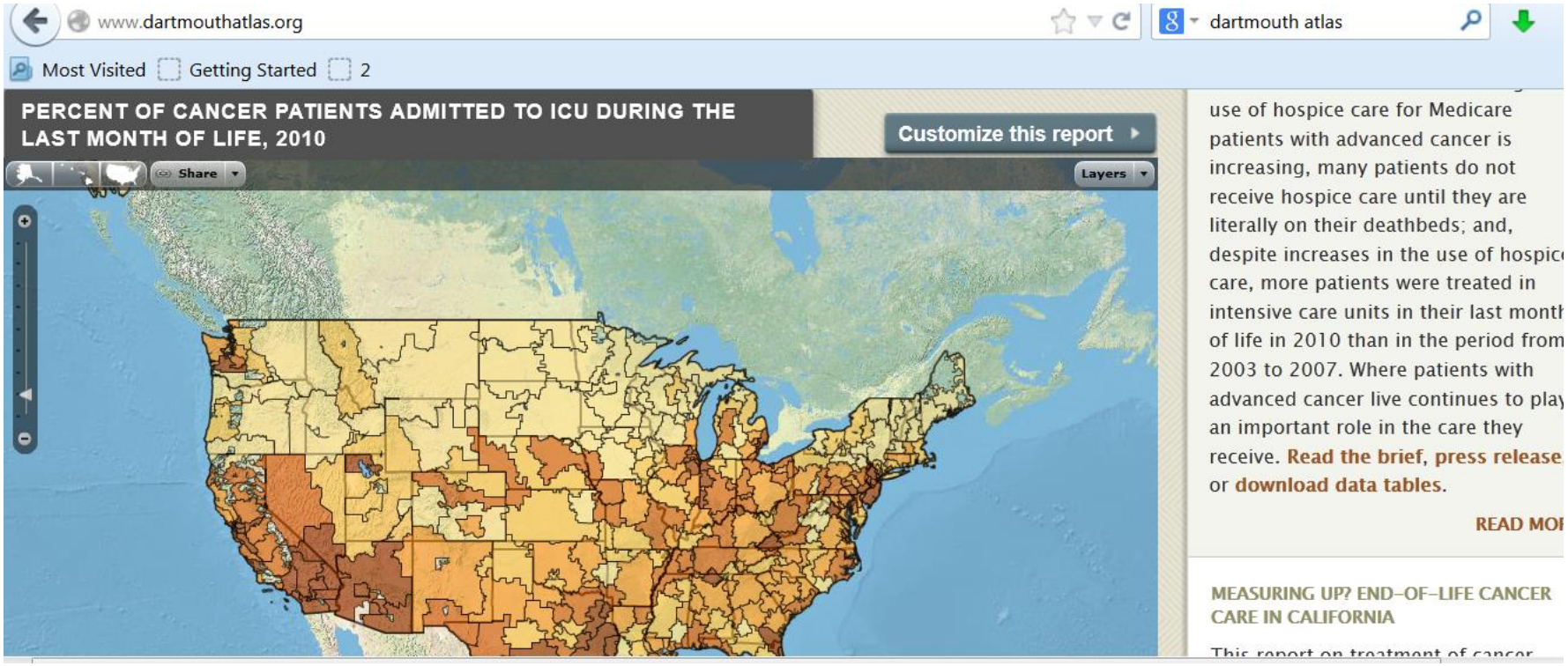
BY
E. A. CODMAN, M.D.

THE FOLLOWER OF THIS REPORT IS THE LAST WORD OF THE LAST REPORT:

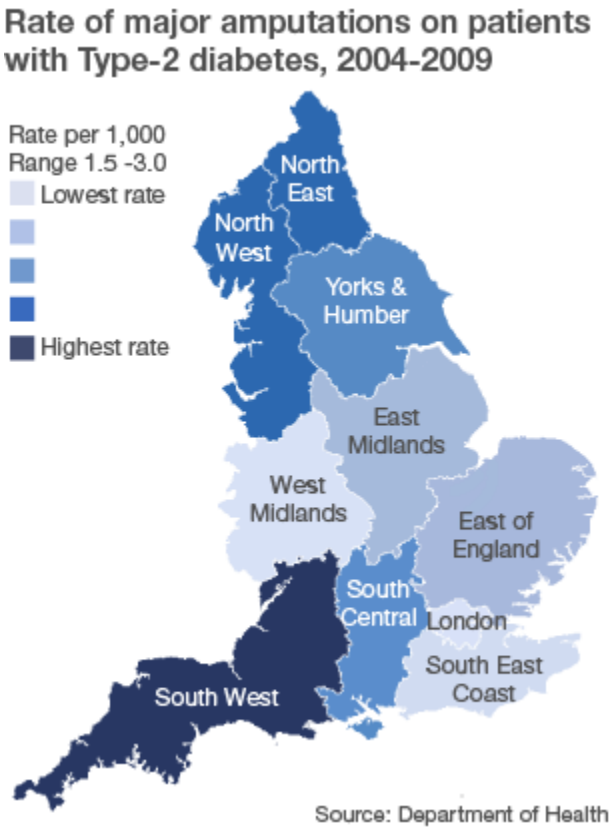
It is Idle to Consider the Standardization of Hospitals without considering the Standard of the Product of each Hospital, the part which the Professional Staff plays in raising the Standard of the Product, and the Compensation which the Hospital grants the Staff in return for their services.

This Hospital has for sale a Product of the Standard found on pages 57-67. It aims to be a Hundred Dollar Hospital with a Hundred Dollar Surgeon.

Dartmouth Atlas

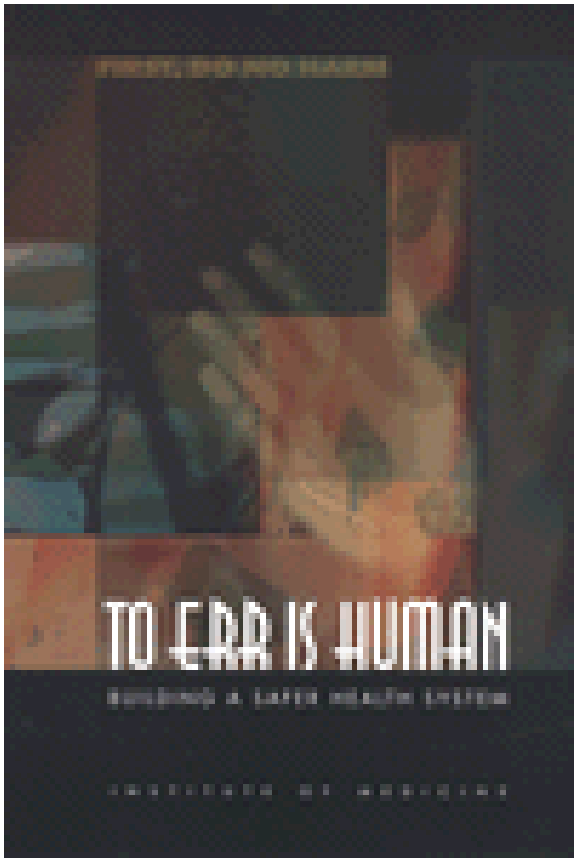


NHS Atlas


Rate of major amputations on patients with Type-2 diabetes, 2004-2009
Rate per 1,000
Range 1.5 -3.0
Lowest rate
Highest rate
North East
North West
Yorks & Humber
East Midlands
West Midlands
East of England
South Central
London
South East Coast
South West
Source: Department of Health

Need for measurement

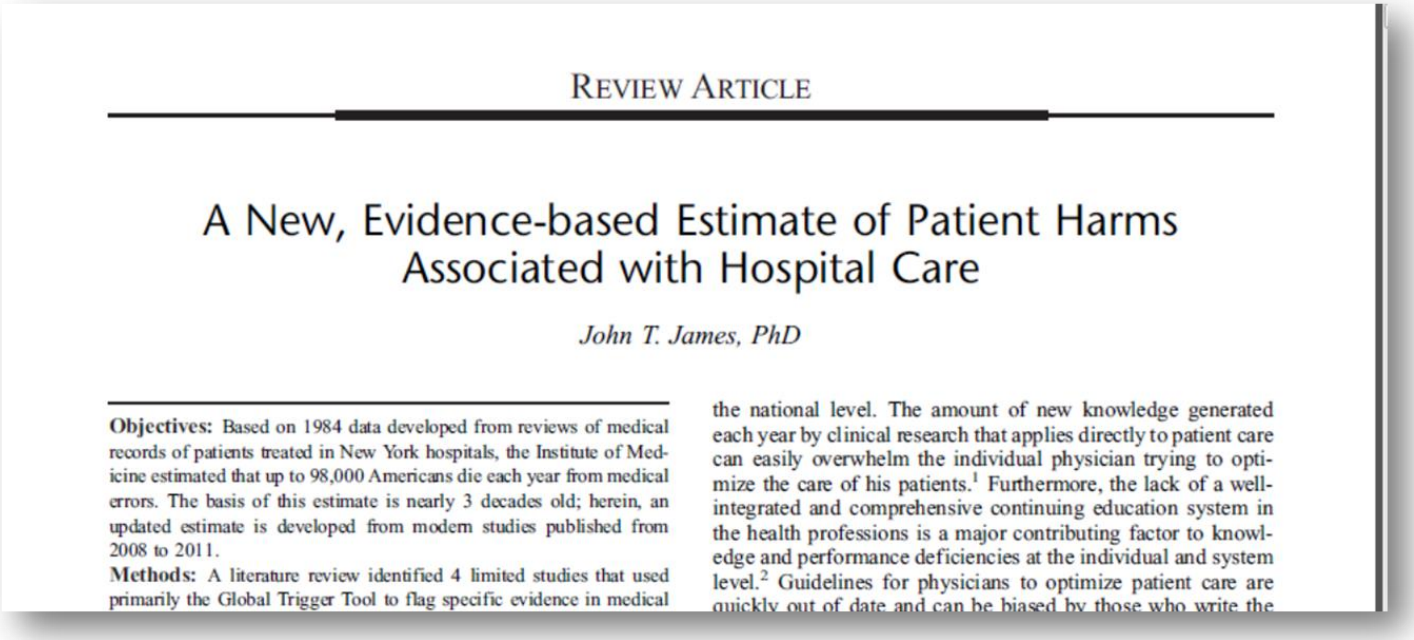
- So measurement is <u>really</u> important if we want to know about quality and safety of care
- But….



- 44,000 to 98,000 preventable deaths
- Based one study from 1984 and another from 1992 using case note review
- Extrapolated figures using number of hospitalisations

- Used Global Trigger Tool; 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



REVIEW ARTICLE

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

the national level. The amount of new knowledge generated each year by clinical research that applies directly to patient care can easily overwhelm the individual physician trying to optimize the care of his patients.[1] Furthermore, the lack of a well-integrated and comprehensive continuing education system in the health professions is a major contributing factor to knowledge and performance deficiencies at the individual and system level.[2] Guidelines for physicians to optimize patient care are quickly out of date and can be biased by those who write the

- Marked differences in GTT harm rates in 5 Danish hospitals
- Training, experience, procedures

Open Access Research

BMJ open
accessible medical research

Experiences with global trigger tool reviews in five Danish hospitals: an implementation study

Christian von Plessen,[1] Anne Marie Kodal,[2] Jacob Anhøj[3]

To cite: von Plessen C, Kodal AM, Anhøj J. Experiences with global trigger tool reviews in five

ABSTRACT

Objectives: To describe experiences with the implementation of global trigger tool (GTT) reviews in five Danish hospitals and to suggest ways to improve

ARTICLE SUMMARY

Article focus

- To describe experiences with the implementation

Original research

Preventable deaths due to problems in care in English acute hospitals: a retrospective case record review study

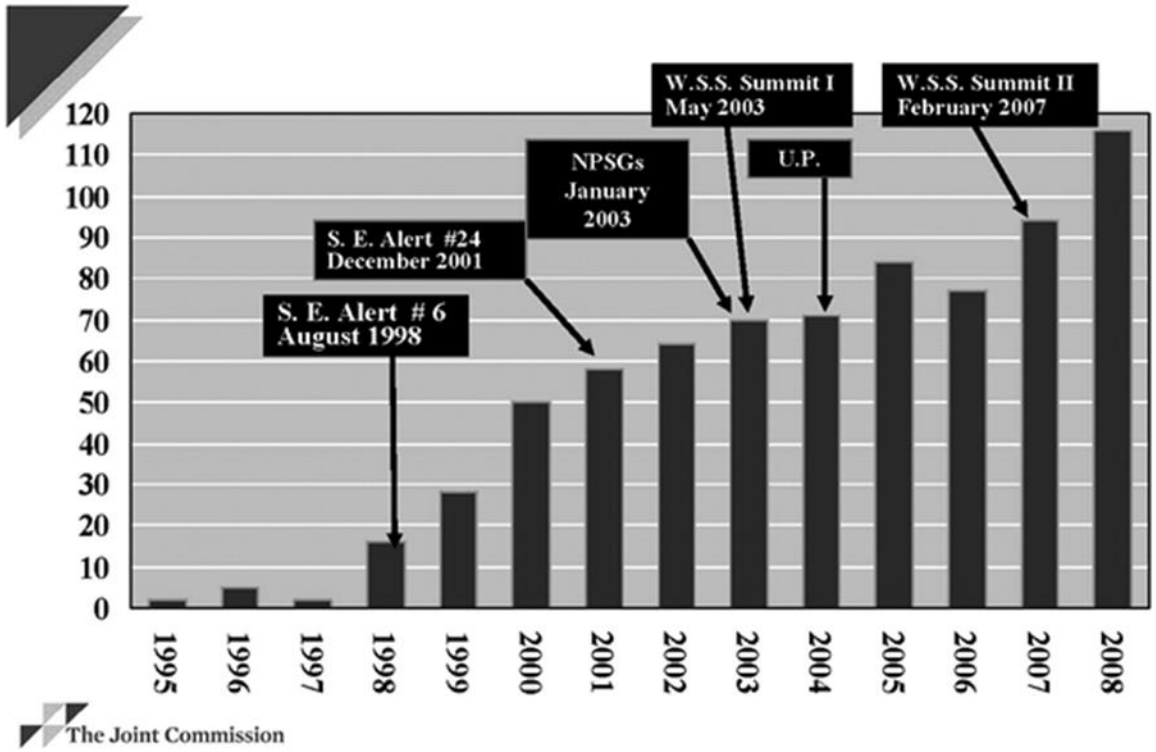
Helen Hogan,[1] Frances Healey,[2] Graham Neale,[3] Richard Thomson,[4] Charles Vincent,[3] Nick Black[1]

- 5% of deaths deemed preventable
- Most problems related to quality of clinical monitoring,
- Most patients whose death was preventable were *older people*

What about process measures instead?

- Medicare policy on tight blood glucose control in ICU patients turned out to be wrong
- Health Affairs (March 2009 issue) – conforming to quality guidelines had no impact on outcomes

Wrong-site surgeries reported by year.



The Joint Commission

Pham J C et al. Qual Saf Health Care 2010;19:446-451

BMJQS

“Data for improvement”

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Studying large-scale programmes to improve patient safety in whole care systems: Challenges for research

Jonathan Benn*, Susan Burnett, Anam Parand, Anna Pinto, Sandra Iskander, Charles Vincent

Department of Biosurgery and Surgical Technology, Imperial College London, St Mary's Campus, QEQM Building Praed Street, London W2 1NY, UK

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

The Health Foundation's Lining Up Research project

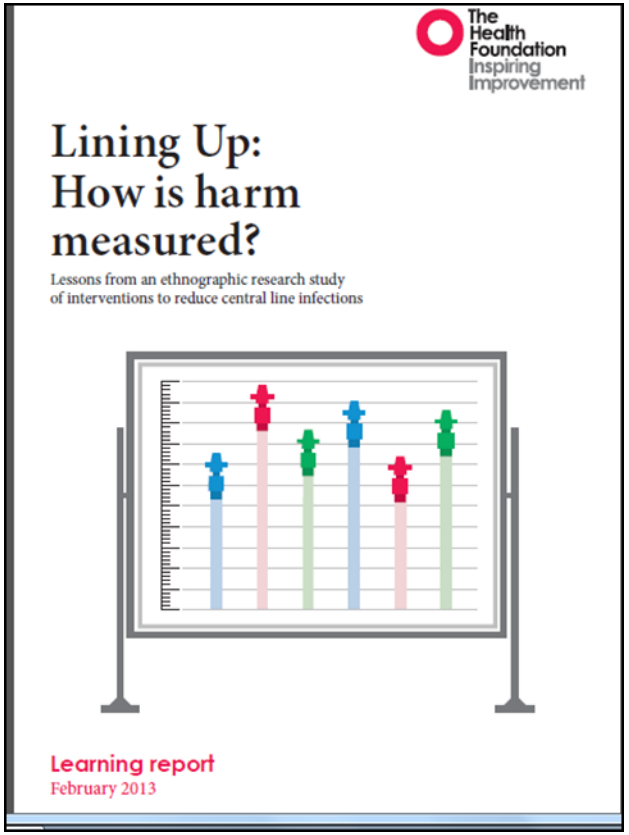
- An ethnographic study of interventions to reduce central line infections
- What happens when organisations are asked to interpret data definitions, collect data and report on CVC-BSIs?

Measurement

THE MILBANK QUARTERLY
A MULTIDISCIPLINARY JOURNAL OF POPULATION HEALTH AND HEALTH POLICY

What Counts? An Ethnographic Study of Infection Data Reported to a Patient Safety Program

MARY DIXON-WOODS,[1] MYLES LESLIE,[2] JULIAN BION,[3] AND CAROLYN TARRANT[1]



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

  - http://blogs.sph.harvard.edu/ashish-jha/hospital-rankings-get-serious/

Empirical Research

How Well Can We Identify the High-Performing Hospital?

Medical Care Research and Review
68(3) 290–310

DOI: 10.1177/1077558710386115
http://mcr.sagepub.com
SAGE

Michael Shwartz[1, 2], Alan B. Cohen[1, 2], Joseph D. Restuccia[1, 2], Z. Justin Ren[2], Alan Labonte[1,2], Carol Theokary[2], Raymond Kang[3], and Jedediah Horwitt[2]

Only a handful of consistently high performing hospitals, and may be a chance finding

The story of one UK hospital

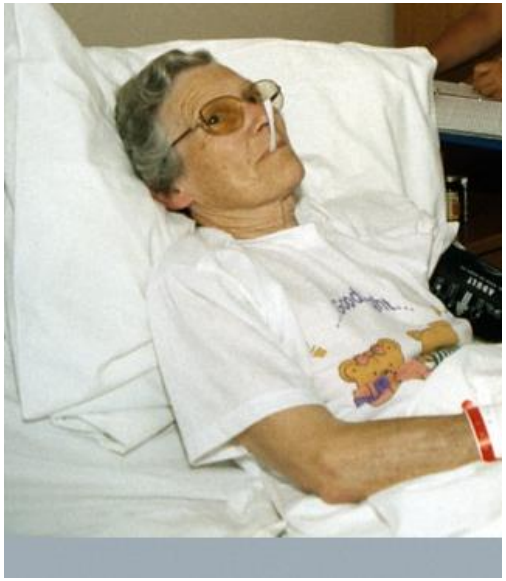
- Regulator rated this hospital as one of four “most improved” hospitals in 2006/7
- Based on self-assessment against core indicators, provisionally rated “good” in 2007/8
- Dr Foster’s Good Hospital Guide (2009) identified it as among 5 most improved over last three years
- November 2009 – ranked in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



The story of one UK hospital

"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 West[8]

[1]Department of Health Sciences, University of Leicester, Leicester,

ABSTRACT

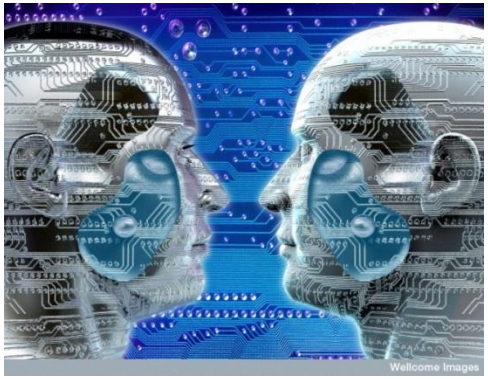
Background Problems of quality and safety

high-quality care. Organisations need to put the patient at the centre of all they do, get smart

BMJ Quality and Safety, Sept 2013 [online early]

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



Measurement done badly

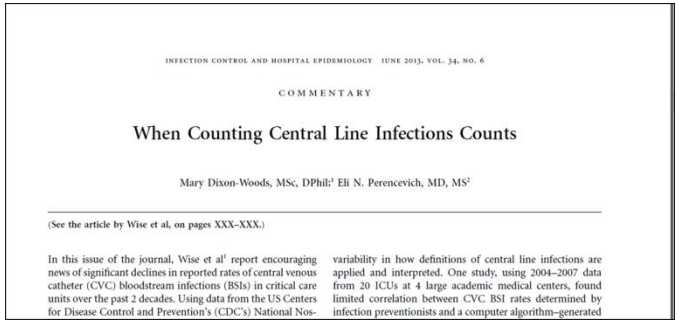
- Illusion of control
- Blindsight

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

Counting counts

- Goodhart's law – any observed statistical regularity will tend to collapse once pressure is placed on it for control purposes



INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY JUNE 2013, VOL. 34, NO. 6

COMMENTARY

When Counting Central Line Infections Counts

Mary Dixon-Woods, MSc, DPhil;[1] Eli N. Perencevich, MD, MS[2]

(See the article by Wise et al, on pages XXX–XXX.)

In this issue of the journal, Wise et al[1] report encouraging news of significant declines in reported rates of central venous catheter (CVC) bloodstream infections (BSIs) in critical care units over the past 2 decades. Using data from the US Centers for Disease Control and Prevention's (CDC's) National Nos-

variability in how definitions of central line infections are applied and interpreted. One study, using 2004–2007 data from 20 ICUs at 4 large academic medical centers, found limited correlation between CVC BSI rates determined by infection preventionists and a computer algorithm–generated

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

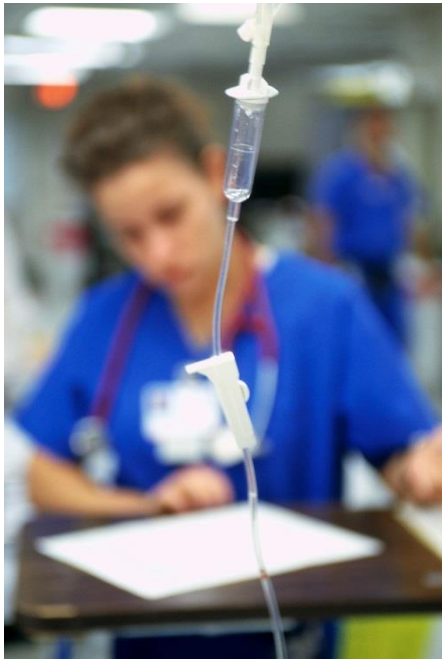
Some effects of performance measurement

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

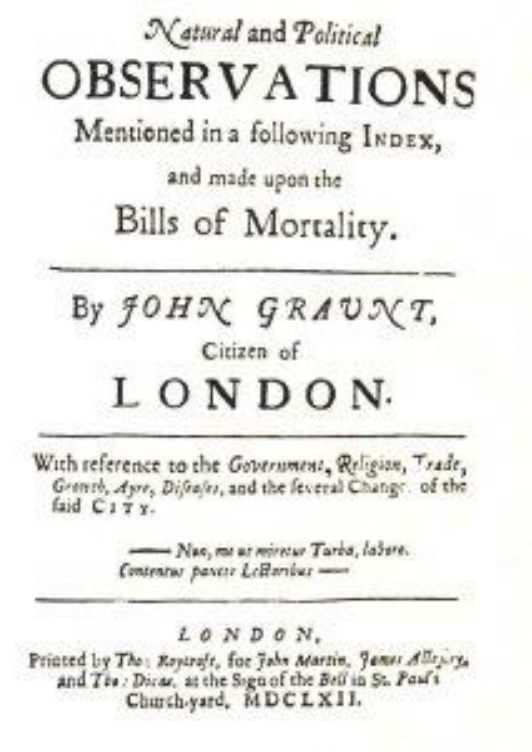
  - Performance Improvement and Performance Dysfunction: An Empirical Examination of Distortionary Impacts of the Emergency Room Wait-Time Target in the English National Health Service *J Public Adm Res Theory (2009) 19 (4): 917-946*

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



Natural and *Political*

OBSERVATIONS

Mentioned in a following INDEX,

and made upon the

Bills of Mortality.

By JOHN GRAUNT,

Citizen of

LONDON.

With reference to the *Government*, *Religion*, *Trade*, *Growth*, *Ayre*, *Diseases*, and the several Changes of the said CITY.

—— *Nec, me ut miretur Turba, laboro.*
Contentus paucis Lectoribus ——

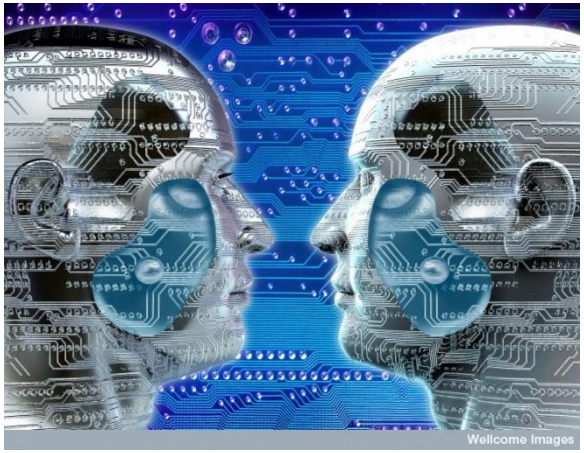
LONDON,

Printed by *Tho: Roycroft*, for *John Martin*, *James Allestry*, and *Tho: Dicas*, at the Sign of the *Bell* in St. *Paul's* Church-yard, MDCLXII.

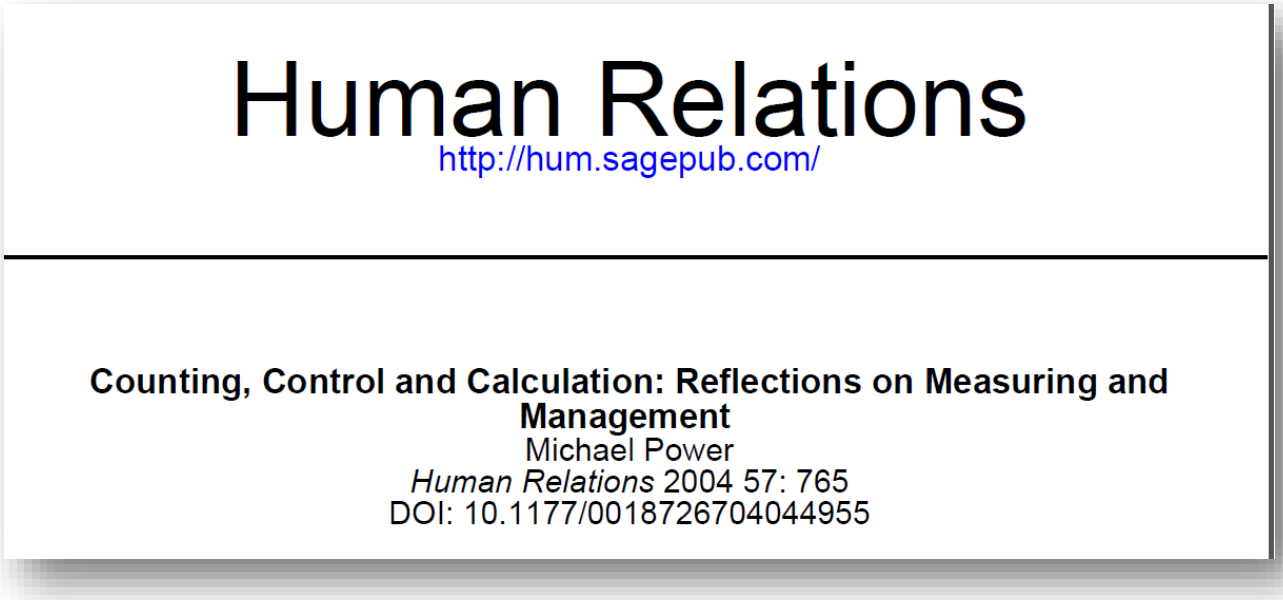
Under-counting of plague deaths to appease municipal authorities

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)



Human Relations
http://hum.sagepub.com/

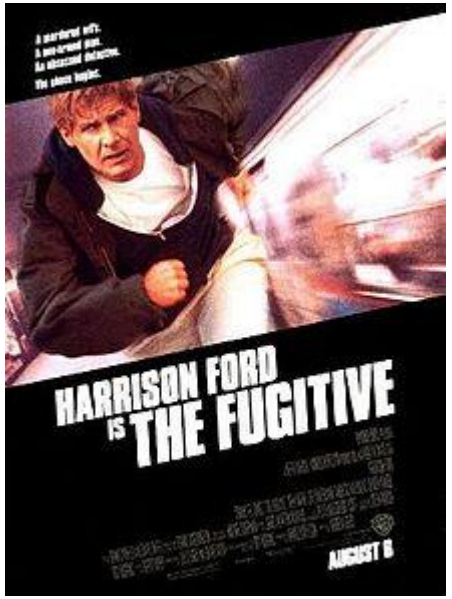
Counting, Control and Calculation: Reflections on Measuring and Management

Michael Power

Human Relations 2004 57: 765
DOI: 10.1177/0018726704044955

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



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