THE CARROT OR STICK? USING HEALTHCARE-ASSOCIATED C. DIFFICILE INFECTION RATES AS A PERFORMANCE MANAGEMENT TOOL

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OUTLINE

• Performance Management and Measurement in Healthcare

• Communicating with Decision Makers
  – A personal reflection
PERFORMANCE MANAGEMENT AND MEASUREMENT IN HEALTHCARE
“IN GOD WE TRUST- ALL OTHERS BRING DATA.”

W. E. DEMING
“YOU CANNOT MANAGE WHAT YOU DON’T MEASURE.”

W. E. DEMING

“The problem with measurement is that it can be a loaded gun
- dangerous if misused
- at least threatening if pointed in the wrong direction”

Denis O Leary, President, Joint Commission on Accreditation of Healthcare Organisations
5 DOMAINS OF HEALTHCARE QUALITY

- Safe
- Effective
- Efficient
- Equitable
- Person centred
MEASURING HEALTHCARE-ASSOCIATED INFECTION (HCAI) AS A QUALITY INDICATOR

- Increased public and political pressure
  - Quality indicators
    - Healthcare acquired infection rates

- HCAI as an adverse event
  - ? Towards zero infection rates
MEASURING HEALTHCARE-ASSOCIATED INFECTION (HCAI) AS A QUALITY INDICATOR

• Marker of system failure in hospitals

• Proxy indicator
  – Levels of staffing
  – Training
  – Organizational stress
  – Management failure
  – Inadequate systems
MONITORING AND IMPROVING QUALITY

1. Regulatory inspection
2. Surveys of consumer experiences
3. Third-party assessments
   - Peer review, accreditation, ISO certification
KEY PERFORMANCE INDICATORS (KPI)

• Tool to assist performance monitoring
  – Specific and measurable elements of practice used to assess quality of care.

• Measure performance by
  – Showing trends
  – Comparing results against standards or other similar organisations.

http://hiqa.ie/healthcare/health-information/key-performance-indicators
BALANCING!

Structure

Outcome

Process
THE STICK?

- Top down
- Mandates ± Legislation
- Targets ± penalties
- Public reporting
1. TARGETS

- Goal setting leads to higher performance that ‘do your best’ encouragement
- Participation in target setting improves ownership
- Balance realism vs ambitious
- Too many targets become meaningless
- Incentives linked to targets can backfire
- Need to be vigilant for unintended consequences

PROBLEMS WITH TARGETS

• Less priority if an area not covered by a target
• Gaming
• Clinical disengagement
FEB 2015: HEALTH FOUNDATION BLOG

• ‘Targets and their close companion, performance management ........more impact on NHS performance in the last 15 years that any other policy leaver, including patient choice, competition, regulation, reorganisation and transparency’

• ‘Clear targets and strong performance management in England and Scotland ........ lower healthcare associated infection rates’

http://www.health.org.uk/blog/love-em-or-loathe-em-nhs-targets-are-here-to-stay/
2. PUBLIC REPORTING
# PUBLIC REPORTING OF HCAI

<table>
<thead>
<tr>
<th>Event</th>
<th>USA</th>
<th>England</th>
<th>France</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary national surveillance systems for nosocomial infections introduced</td>
<td>1970(^1)</td>
<td>1996(^2)</td>
<td>1995(^3)</td>
<td>1997(^4)</td>
</tr>
<tr>
<td>Surveillance of HCAIs first mandated</td>
<td>2003(^5)</td>
<td>2001</td>
<td>-</td>
<td>2000</td>
</tr>
<tr>
<td>Confidential reporting of HCAI indicators first mandated</td>
<td>2005(^6)</td>
<td>-</td>
<td>-</td>
<td>2006</td>
</tr>
<tr>
<td>Public reporting of HCAI indicators first mandated</td>
<td>2003(^5)</td>
<td>2001</td>
<td>2004</td>
<td>-</td>
</tr>
<tr>
<td>HCAI indicators first publicly reported</td>
<td>2005(^7)</td>
<td>2002</td>
<td>2005</td>
<td>-</td>
</tr>
<tr>
<td>National HCAI indicator target first set</td>
<td>-</td>
<td>2004</td>
<td>2005</td>
<td>-</td>
</tr>
<tr>
<td>HCAI indicator target first set for individual institutions</td>
<td>-</td>
<td>2004</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

2Nosocomial Infection National Surveillance Scheme; since 2002, Surgical-Site Infection Surveillance Scheme.
3Inter-regional networks.
4Krankenhaus-Infektions-Surveillance-System.
5Illinois and Pennsylvania.
6Nevada and Nebraska.
7Pennsylvania.
WHAT TO REPORT?
## OUTCOMES

<table>
<thead>
<tr>
<th></th>
<th>USA*</th>
<th>England</th>
<th>France</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of MRSA BSI</td>
<td>Public</td>
<td>Public Target</td>
<td>Target</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Incidence of central-line-associated BSI</td>
<td>Public</td>
<td>..</td>
<td>Voluntary Target</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Incidence of <em>Clostridium difficile</em> infection</td>
<td>Public</td>
<td>Public Target</td>
<td>..</td>
<td>Voluntary</td>
</tr>
</tbody>
</table>
PUBLIC REPORTING OF OUTCOMES

- What the public want
- Outcome (the infection)
- Usually surveillance data used

- How to meaningfully compare hospitals/units?
- Difficulties
  - Definitions (eg VAP) / case finding / diagnosis (CDI)

- How to communicate this publicly?
PROCESS + STRUCTURE

• Describe events that are more common than HCAI
• Needs to be linked to an outcome!!

• Clear targets (e.g., 100% adherence)

• Usually no need to risk adjust
  – Composite indicators (France) / Balanced score cards (UK)
HOW CAN PUBLIC REPORTING WORK?

• Change patient selection
  – Encourage patients to select higher performing institutions

• Stimulus for improvement
  – Identify areas of poor performance

• Preserve reputation
  – Motivate to avoid shame of a bad performance report / seek the pride of a good report
PUBLIC REPORTING

• An incentive for hospitals to reduce HCAI?
  – Little evidence¹,²
  – Increased quality improvement measures in hospitals³

• Informs consumer choice?
  – Little evidence⁴

PUBLIC REPORTING - CONCERNS

• Inappropriate focus on what is being assessed \(^1\)
  – Skewing of priorities – neglect other aspects of patient safety

• Avoidance of invasive procedures in high-risk patients where they may have been warranted \(^2\)

• Fear of being punished – deliberate under reporting \(^3\)

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TICKING THE BOX AND MISSING THE POINT

• A Likierman. The five traps of performance measurement Harv Bus Rev, 87 (2009), pp. 96–101
• MP Muller, AS Detsky. Public reporting of hospital hand hygiene compliance-helpful or harmful? JAMA, 304 (2010), pp. 1116–1117
Healthcare

Input

“Help me to get better”

What the machine hears

“A 95th percentile of A&E patients must be admitted, discharged or transferred within four hours of arrival in the department”
SO WHAT DO YOU PICK?
<table>
<thead>
<tr>
<th>Evidence strength for benefit</th>
<th>Confidential (Voluntary)</th>
<th>Confidential (Mandatory)</th>
<th>Public (Mandatory)</th>
<th>Public (Mandatory)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance + intelligibility</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Data representativeness/completeness</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Increase commitment of hospital leadership to combat HCAI</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>External reinforcement for organisational change</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Satisfaction of the public's and patients' demands</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Variable</td>
</tr>
</tbody>
</table>


Use of benchmarking and public reporting for infection control in four high-income countries
<table>
<thead>
<tr>
<th>Disadvantages</th>
<th>Outcome</th>
<th>Process/Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Confidential</td>
<td>Public</td>
</tr>
<tr>
<td></td>
<td>Voluntary</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Workload</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Risk of skewing of priorities</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Risk of misinterpretation by public and the media</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Risk of under-reporting and gaming</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Use of benchmarking and public reporting for infection control in four high-income countries

DOES PUBLIC REPORTING REDUCE HCAI?

- Little scientific evidence
- Increase
  - Alcohol hand rub consumption (France)
- Reductions
  - MRSA /CDI / SSI (England)
  - UTI / pneumonia / BSI / SSI (Pennsylvania)

However
- MRSA reductions in other countries without public reporting
- Other factors in above countries – infection control infrastructure improvements / campaigns / political pressure

PUBLIC REPORTING IS GOOD FOR INFECTION PREVENTION?

- External reinforcement
- Change in organisational culture of healthcare institutions
- Increased infection prevention activity


Use of benchmarking and public reporting for infection control in four high-income countries
ONTARIO, CANADA

Reduction in *Clostridium difficile* infection rates after mandatory hospital public reporting: findings from a longitudinal cohort study in Canada
• Elevated \textit{C. difficile} to greater prominence on hospital quality improvement agendas

• Motivated hospitals to adhere more closely to best practices in \textit{C. difficile} prevention.
‘No doubt that public reporting and the targets have been effective at the national level in England’.

• ‘When organizational action is required ……ensuring engagement at high levels in management structures, something that surveillance alone has often failed to achieve’

• Infection prevention and control teams now have access and influence at levels thought unimaginable in the year 2000.

J Hosp Infect. 83 (2), pp. 92-93
PUBLIC REPORTING IN DEVELOPING COUNTRIES?

• Call for public reporting in India

• Legislation
  – Force policy makers / administration / healthcare staff to tackle the problem
  – Public pressure to force government to increase funding for resources + infrastructure
THE CARROT?

- Voluntary Reporting
- Professionalism
- Bottom up innovation
- Quality Improvement
I have a plan – here are some key performance indicators for you
I have a dream....
“YOU CANNOT SOLVE A PROBLEM USING THE THINKING THAT GOT YOU THERE”

Albert Einstein
Guideline implementation

- Knowledge
- Attitudes
- Behaviour
DON’T UNDERESTIMATE CULTURE & BEHAVIOUR

http://www.youtube.com/watch?feature=player_embedded&v=HYfW7LJ4nDE
Top down policies originating from leaders who likely do not understand the reality of front line work ignore the challenges of changing human behaviours and habits and are unlikely to create sustained improvement.

• ‘If people cannot take care of a problem they wont see a problem’

Why do we rely / hope that staff will just follow a list of instructions?
Honestly.....
go ahead

Do we really have permission?
POSITIVE DEVIANCE TO REDUCE MRSA?

- 4 US hospitals
- **MRSA infections per 1,000 patient days**

- Example:
  - Housekeeping staff & cleaning procedures
  - Porter developed new method for disposing of gowns (procedure named after him and created you tube video of him)

• 5 Canadian Hospitals

• Reduced HCAI rates x 50%
• Hand hygiene improved x 30%

• Interviews
  – Top down vs bottom up leadership from front line staff
  – Leaders need to step up vs step back
CARROTS AND STICKS OR STICKS AND CARROTS?

KNOWLEDGE/ATTITUDES
- Web-based & in-person education
- Flu intranet site
- Q&A developed to address components of program, especially definitions of accepted exemptions
- Soliciting reasons for declination

REGULATIONS
- Enforcement of mandatory declination policy, mask-wearing for non-vaccinated
- Lack of eligibility for bonus if non-compliant

ENVIRONMENT
- Vaccination at building entrances
- Publicity surrounding “blitz” campaign

PEER PRESSURE/FEEDBACK
- Badge hang tags
- Peer pressure at entrance vaccination stations
- Weekly reports to managers/vice presidents of compliance status

INCENTIVES
- Linking employee vaccination rate to existing bonus program
- Employees eligible for annual raises only if compliant with policy
PSYCHO.

WIMP.
COMMUNICATING WITH DECISION MAKERS
- A PERSONAL REFLECTION
“The single biggest problem in communication is the illusion that it has taken place.”
- George Bernard Shaw
2. MAKING THE CASE

- Often viewed as less of a threat than medication errors + falls
  - False sense of security as have antibiotics
  - Lack of RCTs supporting infection control interventions
  - Perceived intractability of the problem ‘There is nothing we can do anyway’
  - ‘This is Not My Problem’ Degree of ownership that staff feel for the problem

“IN GOD WE TRUST-
ALL OTHERS BRING DATA.”

W. E. DEMING
‘hospital data is currently indigestible and alien to the average user’

- What do the measures mean?
- Rates/ratios etc enable comparison but can be difficult to understand and mask the human side
  - Public
  - Hospital board (the public!)
  - Hospital managers
  - Clinicians
3. TAILOR THE MESSAGE
- DEFINE THE ‘DECISION MAKERS’

- Patients
- Public advocacy groups
- Clinicians – not a homogenous group!
- Healthcare managers
- Policy Makers
- Politicians
USING HEALTHCARE-ASSOCIATED INFECTION DATA

- **Who** is the audience
- **Understand** their pressures + requirements
- **Adapt** into a format the audience understands and is familiar with

- **BRIEF** explanation of what it means and what other indicators may influence it
- **Be available to assist**
4. FIGURE OUT THE PROCESS AND THEN ENGAGE WITH IT
<table>
<thead>
<tr>
<th>Section</th>
<th>Subsection</th>
<th>Recommendation Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>National recommendations</td>
<td>• Designation of an Irish reference laboratory</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Establishment of a single national CDI surveillance system</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Improvement of access to infection specialists for non-acute services</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Management of bed spacing</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>• Newly built inpatient accommodation</td>
<td>5</td>
</tr>
<tr>
<td>Essential elements of</td>
<td>• Governance structures</td>
<td>6</td>
</tr>
</tbody>
</table>

Management of *Clostridium difficile* Infection in Primary Care

Guidance to be read in conjunction with National Clinical Guideline No. 3
Surveillance, Diagnosis and Management of *Clostridium difficile* Infection in Ireland (June 2014)

When to suspect *C. difficile* infection (CDI):
Diarrhoea in the presence of the following risk factors:
• Prolonged or multiple antibiotic use, elderly, co-morbidities, immunosuppression, functional or

<table>
<thead>
<tr>
<th>Management of outbreaks and clusters</th>
<th>Recommendation Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Recognising a cluster/potential cluster of CDI</td>
<td>67-69</td>
</tr>
<tr>
<td>• Membership of the Outbreak Control Team</td>
<td>70</td>
</tr>
<tr>
<td>• Key implementation measures in an outbreak</td>
<td>71-73</td>
</tr>
</tbody>
</table>
The following are examples of audit criteria which are consistent with HIQA National Standards for the Prevention and Control of Healthcare Associated Infections (2009):

3.8.1 Number of new cases of CDI acquired in the healthcare facility per reporting time period (e.g., month or quarter)
- Hospitals: per 1,000 patient admissions and per 10,000 patient days (or bed days used)
- Long-term care facilities: per 10,000 resident days

3.8.2 Antimicrobial consumption data
- Hospital antimicrobial consumption (Defined daily doses/100 bed days used)
- Antimicrobial use audits assessing compliance with local antimicrobial prescribing guidelines

3.8.3 Hand hygiene compliance score (%)
- Overall and per each of the WHO 5 moments of hand hygiene
- By staff group
- By ward or unit

3.8.4 Compliance with Contact Precautions
- Number of observed patient care episodes in which contact precautions are appropriately implemented/number of observed patient care episodes in which contact precautions are indicated x 100

3.8.5 Compliance with environmental and patient care equipment cleaning/disinfection
This can include:
- Hygiene audit scores
- Patient care equipment decontamination audit
- Sluice room audit.
Summary of tools to assist implementation of National Clinical Guideline

Relevant links available at: http://www.hpsc.ie/hpsc/A-Z/Gastroenteric/Clostridiumdifficile/Publications/

Management of patients/residents with suspected/confirmed CDI (healthcare facilities and primary care)
- Patient/resident information leaflet
- CDI management and treatment algorithms:
  - Management of CDI in Primary Care
  - First episode and first recurrence of CDI
  - Second and subsequent recurrences.

Management of patients/residents with suspected/confirmed CDI (healthcare facilities)
- Infection prevention and control precautions (Contact Precautions)
- Guidance (risk assessment) for decision makers on isolation. Appendix 6, page 55 of the Management of Multidrug-Resistant Organisms in Healthcare Settings (MDRO) Guidelines
- Sample care plan for patients/residents with CDI
- Sample daily check list for sluice room and equipment
- Sample systems analysis tool for healthcare facility-associated CDI

Prevention of CDI, clusters and outbreaks in healthcare facilities
- Sample patient information leaflet for patients/residents prescribed an antibiotic course
- Infection prevention and control precautions - Standard and Contact Precautions
- Bristol Stool Chart
- CDI surveillance protocol
- CDI case definitions
- Calculation of resident days for CDI surveillance in long-term care facilities
- Hand hygiene audit tool
- National antimicrobial stewardship guidelines
- Sample CDI trigger tool

Key performance indicators for the prevention and control of CDI
1. Number of new cases of CDI acquired in the healthcare facility per reporting time period (e.g., month or quarter)
   - Hospitals: per 1,000 patient admissions and per 10,000 patient days (or bed days used)
   - Long-term care facilities: per 10,000 resident days
2. Hospital antibiotic consumption (Defined daily doses/100 bed days used)
3. Hand hygiene compliance score (%)
   - Overall and per each of the WHO 5 moments
   - By staff group
   - By ward or unit
5. LEARNING NEW SKILLS

- New language!
- Management
- Infection prevention is essentially a behavioural science – cant just copy and paste!
- Quality Improvement
- Human Factors
- Psychology
6. BEING REALISTIC!

- Public reporting is here to stay
  - Growing demands for transparency, patient advocacy, democratization of knowledge due to the internet is here to stay

- Be patient - Change takes time – the people we want to change are human!
“GIVEN A CHOICE BETWEEN CHANGING AND PROVING THAT IT IS NOT NECESSARY, MOST PEOPLE GET BUSY ON THE PROOF…….. “

JOHN GALBRAITH
PSYCHO.

WIMP.