Implementing Change: The Role of Leadership & Followership in Preventing Infection

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“Nothing is more difficult to plan nor more perilous to conduct than the introduction of change. The innovator has for enemies all those who have prospered under the old, and only lukewarm defenders in those who may prosper under the new…. When his enemies have the opportunity to attack they do so with the zeal of partisans, while supporters defend him feebly, endangering both the innovator and the cause.”

– Niccolo Machiavelli. The Prince, 1513 AD
A True Story…

- Smart (and brash) physician begins a new job at a hospital in a famous city
- Watches people dying needlessly on a unit
- Comes up with a simple solution to prevent deaths
- Implements the solution on a small scale and observes a dramatic benefit
A True Story, continued…

• Attempts to spread his ideas and implement his simple solution elsewhere

• (Mostly) ignored, ridiculed, rejected…out of a job

• Goes to a different hospital; confirms his findings

• (Mostly) ignored, ridiculed, rejected…dies at the age of 47…

in an insane asylum.
Ignaz Semmelweis (1818 – 1865)

Possible Causes for the Non-Adoption of Semmelweis’s Findings

(Joel D. Howell, MD, PhD, Professor of Medicine & History)

• Did not publish his data in a timely manner (delay of ~14 years)
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• His approach was superbly offensive
To Dr. Scanzoni, Professor of Obstetrics at the University of Wurzburg...

“you have sent a significant contingent of unwitting murderers into Germany... should you not adopt my ideas I declare before God and the world that you are a murderer.”

(Courtesy of JD Howell)
Possible Causes for the Non-Adoption of Semmelweis’s Findings

(Joel D. Howell, MD, PhD, Professor of Medicine & History)

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• His approach was superbly offensive

• Did not have a conceptual model to explain his striking findings
Consistently Using Evidence-Based Practices Remains a Challenge...
U.S. Adults Receive Only About Half of Recommended Care – Quality Varies by Condition

% of recommended care received

<table>
<thead>
<tr>
<th>Condition</th>
<th>% of Recommended Care Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>55</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>76</td>
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<tr>
<td>CHF</td>
<td>64</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>54</td>
</tr>
<tr>
<td>UTI</td>
<td>41</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>39</td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>25</td>
</tr>
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Hand Hygiene Compliance in Healthcare Workers

(Erasmus et al. Infect Control Hosp Epidemiol March 2010)

• Systematic review of 96 studies
• Overall median compliance of 40%
• Lower rates in physicians (32%) than nurses (48%)
• Lower rates “before” (21%) patient contact rather than “after” (47%)
Given this Gap Between What *Should* Be Done and What *Is* Done…

- Focus on “implementation science”

- “The scientific study of methods to promote the systematic uptake of research findings into routine practice”
  

- Synonyms: – “T3” translation
  – Knowledge transfer
  – Knowledge utilization
Implementation Science: Conceptual Model

- In the last 6 decades, “knowledge utilization” field dominated by one person: Everett Rogers, PhD
  

- Rogers’ “Diffusion of Innovation” Model is the canonical model since World War 2

- A descriptive model that helps explain why innovations diffuse slowly
“Diffusion of Innovation” Model of Everett Rogers, PhD

• Definitions:
  – Diffusion = spread
  – Innovation = a new practice

• Originally developed for the study of agriculture
S-Shaped Diffusion Curve

The Innovation Adoption Curve

Adoption of Innovation

Take-Off

Saturation

Innovation

Time
Adopter Categories

- Innovators: 2.5%
- Early Adopters: 13.5%
- Early Majority: 34%
- Late Majority: 34%
- Laggards: 16%
S-Shaped Diffusion Curve: Also Applies to Organizations
Outline

- Implementation Science
- Healthcare-Associated Infection
- Leadership & Followership
- Barriers & Facilitators
- Future Directions
Outline

☑ Implementation Science

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Healthcare-Associated Infection (HAI)

- At least 20% of episodes are preventable; perhaps as much as ~70%
  (Harbath et al. J Hosp Infect 2003; Pronovost et al. NEJM 2006; Berenholtz et al. ICHE 2011)

- Medicare no longer reimburses U.S. hospitals for the additional costs of certain infections

- Preventive practices are variably used

- Infection prevention is a model for understanding implementation – both successes and failures
“The hospital is the most complex human organization ever devised...”

Peter Drucker
Catheter-Associated Urinary Tract Infection (CAUTI)

- UTI is a leading cause of hospital-acquired infections
- Most due to urinary catheters
- ~20% of inpatients are catheterized
- Leads to increased morbidity and healthcare costs

www.catheterout.org
The Indwelling Urinary Catheter: A “1-Point” Restraint?

Satisfaction survey of 100 catheterized VA patients:

- 42% found the indwelling catheter to be uncomfortable
- 48% stated that it was painful
- 61% noted that it restricted their ADLs
- 2 patients provided unsolicited comments that their catheter “hurt like hell”

(Saint et al. JAGS 1999)
Disrupting the Lifecycle of the Urinary Catheter
Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement
2. Maintaining Awareness & Proper Care of Catheters
3. Prompting Catheter Removal
4. Preventing Catheter Replacement

(Meddings. Clin Infect Dis 2011)
How Can We Implement Changes to Reduce Indwelling Catheter Use?
Implementation

Technical

Socio-adaptive
Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement
2. Maintaining Awareness & Proper Care of Catheters
3. Prompting Catheter Removal
4. Preventing Catheter Replacement

(Meddings. Clin Infect Dis 2011)
A Systems (and Technical) Solution: Timely Removal of Indwelling Catheters

• 14 studies have evaluated urinary catheter reminders and stop-orders (written, computerized, nurse-initiated)
  – Significant reduction in catheter use (~2.5 days)
  – Significant reduction in infection (~50%)
  – No evidence of harm (ie, re-insertion)

Regularly Using to Prevent CAUTI: 2005 vs. 2009
U.S. National Data
(Krein et al. J Gen Intern Med 2012)
Implementing Change Across Michigan
Preventing CAUTI: A Statewide Effort

• Evaluated the effect of the Keystone Center’s CAUTI Initiative in Michigan: “Bladder Bundle”

• Study Period: 2007 to 2010

• 163 units in 71 participating Michigan hospitals
Foley Use & CAUTI Rates in Michigan

CAUTI ↓ by 6% in non-Michigan hospitals (95% CI: 4 to 8% ↓)
CAUTI ↓ by 25% in Michigan hospitals (95% CI: 13 to 37% ↓)

(Fakih et al. Arch Intern Med 2012)

(Saint et al. JAMA Intern Med 2013)
Understanding Why Some Hospitals are Better than Others in Preventing Infection

- Mixed-methods national studies focusing on 3 healthcare-associated infections
- Phone interviews and site visits to hospitals across the U.S.
- Interviewed ~200 people at various levels

Much of the variability between hospitals is related to the people who work in those hospitals
“If not for the great variability among individuals, medicine might as well be a science and not an art.”

Sir William Osler (1892)
Time for another story...
Outline

☑ Implementation Science
☑ Healthcare-Associated Infection

- Leadership & Followership
- Barriers & Facilitators
- Future Directions
“The Lives of the Most Excellent Artists” by Giorgio Vasari (1511 - 1574 AD)

- Vasari: the first art historian
- Chronicled the lives of the 35 most famous Italian artists up to ~1550 AD
- Coined the term “renaissance”
- A mediocre (at best) painter
- World-class storyteller
According to Vasari…

- In ~1300 AD
- The Pope sought to bring the best artists in all of Italy to Rome
- Goal: to paint the interior of St Peter’s
- An envoy was sent to Florence to visit various artists – including the artist Giotto di Bondone – to ask for a sample drawing that proved their talent
“Giotto…took a sheet of paper and a brush dipped in red… and then with a twist of his hand drew such a perfect circle that it was a marvel to behold. With a smile, he said to the envoy: ‘Here’s your drawing.’ ”

Envoy: “Am I to have no other drawing than this?”

Giotto: “It is more than sufficient. Send it along with the others and you will see whether or not it will be understood.”

The envoy left Giotto dissatisfied…
• The envoy included the circle with the other drawings, telling the Pope how Giotto had drawn it.

• "The Pope ... realized just how far Giotto surpassed all the other painters of his time in skill... Thus, the Pope had Giotto brought to Rome, where he... recognized his genius, and had him paint five scenes from the life of Christ... Giotto became the talk of all Italy."

• The "Italian Renaissance" thus began...
The Annunciation, c. 1150
From a Swabian gospel manuscript; Württembergische Landesbibliothek, Stuttgart
• Giotto “introduced” form and space to painting

• Medieval art was linear and flat

• Giotto’s goal: “3-dimensional” effects on the canvas
What Giotto unleashed could not be stopped...
Masaccio
(1401-1428)
Vasari: “Whoever wishes to see how art can imitate Nature may learn from this head… Anyone who looks attentively at the hollow of her throat would see her pulse beating…

To tell the truth, this painting would cause every artist to tremble with fear.”
Michelangelo Buonarroti (1475 –1564)
The Example of Giotto and What Followed…

- Leadership
- Followership
Leadership: Definitions

- Leadership is “a process whereby an individual influences a group of individuals to achieve a common goal”
  
  (Northouse in “Leadership: Theory and Practice” 2010)

- “Assigned” leadership = leadership that is based on occupying a position in an organization

- “Emergent” leadership = leadership that emerges from an influential member of a group regardless of the person’s title or position
Leadership Research 101: A Brief History

- Traits
- Style
- Situational and Contingent
- Transactional and Transformational
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Leadership Research: Traits

- The “great person” approach to leadership
- Compare leaders with non-leaders: identify key traits
- Summarize 6 studies: 5 key traits
  - Persistence
  - Intelligence
  - Integrity
  - Self-confidence
  - Sociability
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Leadership Research: Traits

- **Strengths:** Easy to understand, studied extensively, appeals to those who like to see their leaders as gifted

- **Out of favor among academicians for several reasons:**
  - Focus only on the leader (not the follower or situation)
  - Not terribly helpful in self-improvement

(Northouse, 2010)
Leadership Research: Style

• Focuses on the leader’s behavior towards followers

• 2 main behaviors: “task” and “relationship”
  • Task: facilitate goal attainment
  • Relationship: help followers feel good

• “Concern for Production” vs “Concern for People”
(1,1): evade and elude
(1,9): smile and comply
(9,1): total domination
(9,9): contribute & commit
(5,5): compromise, balance

(Leadership Grid by Blake and Mouton)
Leadership Research: Style

- **Strengths:** Highlights the tension between relationships vs tasks; behaviors are easier to change than traits; extensive research (from both University of Michigan & Ohio State)

- **Criticisms:**
  - Unclear how styles are associated with outcomes
  - Unclear if high-high (9, 9) is the best style

(Northouse, 2010)
Leadership Research: Situational & Contingent

- Different situations require different leadership styles

- **Situational approach**: The leader should match their style to the follower’s needs
  - “Directive” behaviors: Task-oriented
  - “Supportive” behaviors: Relationship-oriented

- **Contingent approach**: The leader should adapt their style (task vs relationship) also to the organizational context
Leadership Research: Situational & Contingent

**Strengths:**
- Makes intuitive sense
- Some empiric support

**Criticisms:**
- Not a “one-size-fits-all” strategy
- The leader must constantly adapt
<table>
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<tr>
<th>Transactional:</th>
<th>Transformational:</th>
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<tr>
<td>• Transaction (or exchange) of something leader has that the follower wants</td>
<td>• Inspires followers to see beyond their self-interest</td>
</tr>
<tr>
<td>• Specifies roles and tasks</td>
<td>• Adapts to the needs and motives of followers</td>
</tr>
<tr>
<td>• Reward &amp; punishment used as motivation</td>
<td>• Behaves in a way that engenders great trust</td>
</tr>
<tr>
<td>• “One-size-fits-all”</td>
<td>• The leader often relies on charisma</td>
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Question: What is the Secret to Good Leadership?

Good Followership
Followership

- Follower: “a person who accepts the leadership of another”
- An understudied area: Book search on Amazon revealed…
  - >95,000 titles on leadership
  - ~800 titles on followership (mostly spiritual or political)
  - 120:1 in favor of leadership
- Unfortunate asymmetry since leadership and followership are intertwined
- Most leaders are also followers!

(Kelley, Harvard Business Review, 1988)
Followership: 5 Key Types
(Kelley: The Power of Followership, 1992)

- **Alienated**: mavericks with a healthy skepticism of the organization; capable but highly cynical
- **Conformists**: the “yes people” of the organization; limited independent thinking; often seen in rigid bureaucracies
- **Passive**: require disproportionate supervision relative to their contribution; lack initiative and sense of responsibility
- **Pragmatists**: hug the middle of the road; will do a good job but won’t stick their necks out
- **Exemplary followers**: independent, innovative, and willing to question leadership; critical to organizational success
Putting it All Together

✔ Implementation
✔ Leadership
✔ Followership

+ Preventing Infection
Why Some Hospitals are Better than Others in Preventing Infection

- Mixed-methods study – using both quantitative and qualitative methods – to understand why some hospitals are better than others
- Identified barriers to – and facilitators of – the use of evidence-based practices to prevent infection
Key Barriers

• Active Resisters: people who prefer doing things the way they have always done them

(Ford et al. Acad Manag Rev 2008)
Key Barriers

• *Active Resisters*: people who prefer doing things the way they have always done them
  
  (Ford et al. Acad Manag Rev 2008)

• *Organizational Constipators*: passive-aggressives who undermine change without active resistance
  
  (Saint et al. Joint Comm Journal Qual Safety 2009)
Key Barriers

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  (Saint et al. Joint Comm Journal Qual Safety 2009)

• Culture of Mediocrity (rather than Excellence)
What is a Culture of Excellence?

• Hospital wants to be superb
• Employees are rewarded for exemplary work
• Employees describe their hospital as “the best” and enjoy working there
• Clear goals that can be achieved
Culture of Mediocrity

• Happy to be “average”
• Constipators are prevalent
• Leadership is considered ineffective
• Over-performers are rewarded by ....
• Underperformers are not held accountable
Key Facilitators
One Key Facilitator: Collaboratives

- **Collaboratives**: align clinical silos and goals
- **Examples**: IHI’s 100K Lives Campaign, Keystone
Collaboratives

• Tools used by collaboratives:
  ➢ Ensuring the support of the boss
  ➢ Spotlighting an issue
  ➢ Identifying a champion within the organization
  ➢ Implementing “bundles”
The Power of a Bundle…

• **Bundle**: “A cohesive unit of evidence-based interventions that should be implemented as a set.”
  
  Institute for Healthcare Improvement (IHI)

• **Bundle Theory**: a set of practices implemented all at once is more effective than just 1 practice

• “A single arrow is easily broken, but not ten in a bundle”

  - Japanese proverb
A Final Facilitator...
Leadership: At All Levels

• Applies not only to the Director...

• Examples: Infection preventionists, hospital epidemiologists, hospitalists, patient safety officers, CMOs, nurse managers...

• Works well with other disciplines
4 Key Behaviors of Effective Infection Prevention Leaders

1) Cultivated a culture of clinical excellence
   – Developed a clear vision
   – Successfully conveyed that to staff

2) Inspired staff
   – Motivated and energized followers
   – Some, not all, were charismatic
4 Key Behaviors of Effective Infection Prevention Leaders

3) Solution-oriented
   – Focused on overcoming barriers rather than complaining
   – Dealt directly with resistant staff

4) Thought strategically while acting locally
   – Planned ahead leaving little to chance; politicked before crucial issues came up for a vote in committees
Outline

✓ Implementation Science
✓ Healthcare-Associated Infection
✓ Leadership & Followership
✓ Barriers & Facilitators

▪ Future Directions
A Dilemma

• Much of what we do in healthcare – especially in the hospital – is reflexive

  – If a patient is hypoxemic: we give oxygen
  – Low BP: IV fluids
  – Positive blood cultures: antibiotics
  – Frequency, urgency, and dysuria: dx UTI
A Dilemma

• These rote responses are usually helpful

• However, this reflex-like approach can lead to problems
  – Pt sick enough to be admitted from the ED: Foley catheter
  – Asymptomatic catheterized patient has a “dirty” urine: antibiotics
One Possible Solution: “Medical Mindfulness”
One Possible Solution: “Medical Mindfulness”

- Being in the moment and considering decisions carefully before jumping to reflexive action

- Daniel Kahneman:
  - Intuition (System 1): fast, automatic, effortless; difficult to alter
  - Reasoning (System 2): slower, effortful, & flexible

- In medicine, we are constantly toggling back-and-forth between the reflexive and the complex

- Exploring how the system can help us perform better
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Thank you!