Skills to Survive in a Changing Health Care Environment

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Goals of this Presentation

• Define & discuss System Skills & their importance to physical therapists
• Review the history of disseminating innovation in and outside of healthcare.
• Consider implications for converting physical therapy innovations to new norms in the field.

Why Should You CARE about System Skills?

• We live in turbulent times with storms swirling around us. The storms of radical change are gathering as evidenced in 2010 by passage of the Affordable Care Act (ACA).
SYSTEM SKILLS FOR HEALTH CARE

- Cowboys & Pitcrews (Gawande, 2011)
- Interest in Data
- Devise Solutions for System Problems
- Develop an Ability to Implement at Scale

INTEREST IN DATA

Bill Gates: My Plan to Fix The World's Biggest Problems

- From the fight against polio to fixing education, what's missing is often good measurement and a commitment to follow the data. We can do better. We have the tools at hand.
- WSJ Jan 25, 2013
“Health care is the most information intensive industry in the economy, but it uses IT the least.” — Cutler puts primary emphasis on improving the quality of care. “Most of economics is about the cost of things,” he notes. “There has been little effort to figure out what the benefits are. That’s often more difficult.”

We must have the capacity to measure in real time the results of the care we provide.

The data should include measures of value of the care we provide: the degree to which our patients are improving (outcomes) and the costs incurred.

DEVISE SOLUTIONS TO SYSTEM PROBLEMS
Crossing the Quality Chasm

- “Between the health care we have and the care we could have lies not just a gap, but a chasm”

“Positive Deviants”

- Identify the ‘Positive Deviants’ in our professions.
- The foundation for a culture of innovation and quality improvement in physical therapy.

Beginning to See Positive Signs

- Goals are to: improve health care, lower costs, & move best practices out to the national provider community.
- In 2013, expanded to 19 health care systems across the US.

(Dartmouth/Hitchcock, Mayo, Denver Health, Intermountain, Cleveland Clinic.)
A Collaborative Of Leading Health Systems Finds Wide Variations In Total Knee Replacement Delivery And Takes Steps To Improve Value

Ivan M. Tomek et al., Health Affairs Vol. 32 No. 10 October 2013

- The data consisted of 20,910 single knee replacement surgeries in 2008 and 2009 from the five health care delivery systems.

Key Findings...

- The health system with the lowest in-hospital complication rate had brought together patients with a multispecialty team prior to the surgery, including members from anesthesiology and internal medicine to co-manage medically complex patients.
- The fastest operating times (and shortest patient stays) were at a hospital where knee replacement cases were staffed by a team of anesthesia doctors, scrub techs, and nurses specializing in arthroplasty.
- The health system that involved patients prior to surgery in their discharge planning process (and managed patient expectations about disposition after hospitalization) resulted in shorter hospitalizations.

Hospital Discharge Disposition

<table>
<thead>
<tr>
<th>Disposition</th>
<th>Sys A</th>
<th>Sys B</th>
<th>Sys C</th>
<th>Sys D</th>
<th>Sys E</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Care</td>
<td>5.2%</td>
<td>88.6%</td>
<td>3.8%</td>
<td>65.8%</td>
<td>7.9%</td>
<td>22.0%</td>
</tr>
<tr>
<td>Home Health</td>
<td>67.8%</td>
<td>1.7%</td>
<td>67.5%</td>
<td>2.6%</td>
<td>58.9%</td>
<td>45.6%</td>
</tr>
<tr>
<td>Rehab</td>
<td>12.4%</td>
<td>1.1%</td>
<td>13.1%</td>
<td>2.6%</td>
<td>4.5%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Hospital</td>
<td>15.5%</td>
<td>8.0%</td>
<td>25.5%</td>
<td>29.1%</td>
<td>28.8%</td>
<td>27.4%</td>
</tr>
</tbody>
</table>

Annual Orthopaedic Section Meeting, APTA, May 15, 2014
Does Adherence to Evidence-Based Recommendations Improve Quality of Care for Patients with Acute Low Back Pain Receiving Physical Therapy?

Comparative Effectiveness Research

- All Patients with Low Back Pain Receiving Physical Therapy (2004-2005)
  n = 3507

  - Age >60 or <18
    n = 811
  - Symptom duration >90 days
    n = 568
  - <3 therapy visits
    n = 923

  Patients Eligible for Inclusion
  n = 1190

  - Adherent
    40.4%
  - Non-Adherent
    59.6%

- Duration of physical therapy <10 days
  n = 233

- Post-surgical visit
  n = 62

- Initial Oswestry <10%
  n = 27

- Incomplete data
  n = 43
Percent Improvement

Utilization and Duration of Care

<table>
<thead>
<tr>
<th></th>
<th>Adherent Care</th>
<th>Non-Adherent Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of PT Visits</td>
<td>5 (3 – 21)</td>
<td>6 (3 – 35)</td>
</tr>
<tr>
<td>(median, range)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration of PT care</td>
<td>20 (10 – 124)</td>
<td>26 (10 – 250)</td>
</tr>
<tr>
<td>(days) (median, range)*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $P < 0.01$

Percentage of Patients with High Charges

Adjusted OR = 0.44 (0.26, 0.75) * $P < 0.05$
### Imaging Studies

<table>
<thead>
<tr>
<th></th>
<th>Adherent</th>
<th>Non-Adherent</th>
</tr>
</thead>
<tbody>
<tr>
<td>x-ray</td>
<td>6.8</td>
<td>15.9</td>
</tr>
<tr>
<td>MRI</td>
<td>8.3</td>
<td>10.3</td>
</tr>
<tr>
<td>NCV/EMG</td>
<td>2.8</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Adjusted OR = 0.47 (0.24, 0.94)

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**IMPLEMENTING AT SCALE**

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**Don Berwick...**

- “In health care, invention is hard, but dissemination is even harder”
- We need the coordinated deployment of practice innovations on a large scale.
Dissemination Challenges are Not New

The Age of Scurvy

- Scurvy: A disease that develops from the lack of vitamin C. Sailors developed the disease on long voyages when they had only dried meat and bread to eat. Most recovered when they ate vitamin C-rich foods.

- The actual cause of scurvy was not truly known until the 1930s. Until that time, doctors and captains alike knew that the lack of fruits and vegetables in a person's diet would cause scurvy. If left untreated, scurvy was fatal.

Captain James Lancaster (1601)

- Commanded a fleet of 4 ships from England to India.
- The crew on one ship was given 3 tsp. of lemon juice daily.
- Halfway into the trip, 40% of 278 sailors on the 3 untreated ships had died of scurvy; none had died on the 1 ship with the lemon juice ration.
264 Years later: British Board of Trade

- Ordered proper diets on merchant marine vessels in 1865.
- Time between Lancaster’s innovation and universal scurvy prevention policy was 264 years.

The Case of Sepsis...

- In the 1860s, Lister perfected ways to use carbolic acid for cleansing hands and wounds to destroy germs.
- The result was strikingly lower rates of sepsis and death following surgery.

Yet....

- It was a generation before Lister’s recommendations became the norm and the next steps were taken toward the modern standard of asepsis.
William Morton, a Boston dentist, administered ether to a man undergoing an excision of a tumor in his jaw.

The idea spread like a contagion...

By the end of 1864, surgeons were administering ether to patients in Paris, London, and by June ether was being used in most regions of the developed world.

Why the difference in rate of uptake of these innovations?

What can we learn to apply to diffusion of innovations in physical therapy practice?

Why does Diffusion often Take so Long?
Everett Rogers, (1995)

- Influences that correlate with the rate of adoption of a change:
  1. Perceptions of the innovation
  2. Characteristics of those who adopt the innovation
  3. Contextual factors

Perceptions of the Innovation

- **BENEFIT:** of the change...will it help them? Balance of risks and benefits
- **COMPATIBILITY:** with values, beliefs, past history, and current needs of people.
- **SIMPLICITY:** of the innovation: simple innovations spread more quickly

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- **TRIALABILITY**: can a proposed adopter test the innovation on a small scale first?
- **OBSERVABILITY**: Ease with which potential adopters can watch others try the innovation first.
- **ADAPTABILITY**: the things that make innovations work must come from within a system.

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Comparing Anesthesia and Asepsis?
Gawande, Slow Ideas, 2013

- Both were economically beneficial.
- Both violated prevailing beliefs.
- Both were technically complex to master.
- Both improved the lives of patients.
- Anesthesia combated a visible and immediate problem (pain); the other (germs) were invisible and outcomes were delayed.
- Only one made life better for doctors! Surgery went from a brutal, time pressured assault on the patient to a considered procedure.

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Closer to Home:

- Instrument that provides cross care setting functional assessment using the same outcome scale .... Never done before
- CAT administration offers efficient administration without sacrificing precision or accuracy
- AM-PAC first published in 2004.... adoption has been slow....
Cleveland Clinics Adaptations...

- Asked us to create AM-PAC acute care short forms with no more than 6-items per domain.
- Called it: "6-Clicks"
- Simplicity & Adaptability: to their local needs...
- Adoption has proliferated since
- Led to other short forms (eg., home care Johns Hopkins) all linked to the same common scale.

Characteristics of Potential Adopters

- **INNOVATORS** (Positive Deviants): adventuerousness, tolerance of risk, fascination with novelty, willing to leave the village to learn about an innovation.
- **EARLY ADOPTERS**: These are the opinions leaders, well connected in the network. Cross pollinate.
- **EARLY MAJORITY**: Learn mainly from those they know well, rely on personal familiarity.

- **LATE MAJORITY**: will adopt an innovation when it appears to be the 'new norm'.

- **LAGGARDS**: their point of reference is the past. Traditionalists...tried and true.

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**Contextual Factors**

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**The Production of Science Dilemma**

- The production of scientific evidence is organized institutionally with highly centralized mechanisms....

- Scientists are more oriented to the international audiences of other scientists for which they publish more than the needs of practitioners, policy makes, or the local public.

- Whereas the application of that science is "highly decentralized".... 'Local worlds' the networks in which we live – have substantial influence on each of us.
Organizational & Managerial Factors

- Organizations that are nurturing environments for innovators, offering praise, resources, security for taking risks vs. environments where one does not ‘rock-the-boat’.
- Does the organization foster social exchangers that facilitates uptake of innovations.

Are there formal mechanisms to identify innovations that should be deployed?

- Responsibility for routine, high level surveillance of key scientific journals, attending key scientific meetings, reporting back to the organization.

Diffusion is a Social Process

Gawande, 2013

- Penalties and incentives won’t achieve system/ cultural change.
- Getting to “X is what we do” means establishing “X” as the new norm. To create norms, you have to understand people’s existing norms and the barriers to change.
- Mass Media can introduce an innovation to people, but Rogers showed that people follow the lead of other people they know and trust when they decide whether to take up an innovation.
**Agricultural Extension Service (AES)**

- The application of scientific research and new knowledge to agricultural practices through farmer communication and learning activities.
- An extension agent is a university employee who develops and delivers educational programs.
- Relies heavily on face-to-face networks as they move information into the field.
- Includes 4-H and youth activities.

**Pharmaceutical ‘detailing’**

- "The rule of 7-touches"
- Personally touch a doctor 7-times, and they will come to know you; if they know you, they might trust you; and if they trust you, they will change.

**Health Care Extension Service**

- IHI’s Breakthrough Collaborative Model for quality improvement.
- A short-term (6- to 15-month) learning system that brings together a large number of teams from hospitals or clinics to seek improvement in a focused topic area.
OUR MISSION:
To improve rehabilitation clinical research by
• Develop and refine innovative measures of key rehabilitation outcomes;
• Disseminating the use of innovative outcome measures by rehabilitation researchers.

Conferences:
New Frontiers in Disability Related Comparative Effectiveness Research (CER)
Boston, MA
June 22, 2012
Consultation:

- Consultation for ongoing research projects and/or proposal development.
- Available from all three core directors.
- Request consultation for selecting the best measure(s).

Pilot Studies Program

- Pilot projects provide support for researchers interested in developing and refining innovative outcome measures for rehabilitation research
  - Funding 1 – 2 years.
  - Budget up to $30,000 annually (funded amount may be lower depending on the availability of funding)
  - 13 pilot studies funded to date

Visiting Scientist Program

- Program to help researchers develop, refine and evaluate rehabilitation outcomes measures.
- Support for up to 1 year.
- Applications accepted on an ongoing basis.

- Linda Resnik, PT, PhD (2011), Brown University
- Jacob Kean, PhD, CCC-SLP (2012), Indiana University
- Beth Pfeiffer, PhD, OTR/L, (2013), Temple University
- Terry Ellis, PT, PhD, (2013), Boston University, Sargent College
- Una Makris, MD (2014), UT Southwestern Medical Center
- Mary Stilphen, DPT (2014), Cleveland Clinic
Where does our profession go from here?

- PT needs to be planning strategic initiatives to achieve clinical innovation dissemination and widespread adoption.
- Creation of a "PT Innovation Extension Service" or "PT Innovation Fellowships" or "PT Breakthrough Collaboratives".
- Dissemination Research is urgently needed. (PCORI, NIDRR, PT Fdn.)
- Success will require close collaborations between positive deviants, researchers, and our professional associations.

Thank You