Fundamentals of Health Care Improvement

Review of QI 101: Introduction to Health Care Improvement
Lecture Objectives

1. Describe common challenges for health care systems around the world
2. List the six dimensions of health care, and the aims for each, outlined by the Institute of Medicine (IOM) in 2001
3. Explain the value of improvement science in health care
Lecture Outline

• Health and health care today
• The Institute of Medicine’s aims for improvement
• Changing systems with the science of improvement
The State of Health Care Today

- Providers are becoming more specialized, leading to gaps in communication and care
- Populations are aging, with disease burden shifting toward chronic conditions
- Patients and families are better informed, wanting more personalized care
- Complicated procedures and expensive treatments are more available and desired
Two IOM Reports

1999: *To Err Is Human: Building a Safer Health Care System*
- 44,000 to 98,000 Americans dying due to medical errors each year
  - Equivalent to three jumbo jets crashing every other day; statistics widely reported by the media

2001: *Crossing the Quality Chasm: Health Care in the 21st Century*
- Six dimensions of US health care that need improvement
## Six Dimensions of Health Care Quality

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe</td>
<td>Avoiding injuries to patients from the care that is intended to help them</td>
</tr>
<tr>
<td>Timely</td>
<td>Reducing waits and sometimes harmful delays for patients and providers</td>
</tr>
<tr>
<td>Effective</td>
<td>Providing the appropriate level of services based on scientific knowledge</td>
</tr>
<tr>
<td>Efficient</td>
<td>Avoiding waste, including waste of equipment, supplies, ideas, and energy</td>
</tr>
<tr>
<td>Equitable</td>
<td>Providing care that does not vary in quality because of personal characteristics</td>
</tr>
<tr>
<td>Patient-Centered</td>
<td>Providing care that is respectful of and responsive to individual patients</td>
</tr>
</tbody>
</table>
How Can We Improve?

“How every system is perfectly designed to get the results it gets.”

The “science of improvement” (however we label it) focuses on changing systems — not people

- “Science of improvement”
- “Health care delivery science”
- “Implementation science”
- “Systems strengthening”
- “Systems engineering”
The Evolution of Improvement Science

1918
Walter A. Shewhart joins the Inspection Engineering Department of Western Electric, manufacturer for Bell Telephone. He begins to rethink quality control, which had been limited to post-production inspection.

1931
Shewhart publishes *Economic Control of Quality of Manufactured Product*, challenging the inspection-based approach to quality and laying groundwork for the modern era of quality improvement.

1950s
Deming brings a modified version of the Shewhart Cycle to war-torn Japan and uses it to help repair Japanese industry after WWII. His improvement methods later evolve into the Plan-Do-Study-Act (PDSA) cycle.

1993
Deming publishes *The New Economics*, detailing PDCA and his System of Profound Knowledge.

1925-1926
W. Edwards Deming is a summer intern at Western Electric; he meets Shewhart and becomes interested in his work.

1939
Deming edits and Shewhart publishes *Statistical Method from the Viewpoint of Quality Control*, introducing a three-step scientific process for mass production (specification-production-inspection) that evolves into the Shewhart Cycle.

1982
Deming publishes *Out of the Crisis*, offering a theory of management based on 14 Points for Management.

1994
Associates in Process Improvement (API) add three questions to supplement PDCA, creating The Model for Improvement, which becomes the foundation for work at IHI.
System of Profound Knowledge

- Theory of improvement from W. Edwards Deming
- Framework for understanding key aspects of systems
- Predecessor of the Model for Improvement
Appreciation of a System

What is the whole system that you’re trying to manage?
Understanding Variation

What is the variation in results trying to tell you about the system?
What are your predictions about the system’s performance?
Theory of Psychology

What are the important interactions among people in the system?
Video

http://www.ihi.org/education/IHIOpenSchool/resources/Pages/Activities/williamsNeedImprovementScience.aspx

https://youtu.be/XSQR9_VwMCg
Discussion

• Do you agree that clinicians need improvement methodology to help them change how they work? Why or why not?

• When you think about a process in your life (at work or at home) that needs improvement, what’s the first thing that comes to mind? Why?

• How can data be helpful in identifying opportunities for improvement?

• Have you used improvement science to make changes in your work or home life? What was your experience?

Exercise

Go to https://www.medicare.gov/hospitalcompare/search.html

Research your local hospitals or the hospitals in an area of your choice.

Discuss what you learned, referring to the discussion questions at http://www.ihi.org/education/IHIOpenSchool/resources/Documents/QI101_exercise.pdf