This is a sample of the instructor resources for *The Healthcare Quality Book: Vision, Strategy, and Tools, Second Edition*, by Elizabeth Ransom, Maulik Joshi, David Nash and Scott Ransom. This sample contains the instructor notes and PowerPoint slides for Chapter 3.

This complete instructor resources consist of 44 pages of instructor notes and 225 PowerPoint slides. If you adopt this text you will be given access to the complete materials. To obtain access, e-mail your request to hap1@ache.org and include the following information in your message.

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Chapter 3 Study Questions

1. While exploring opportunities to improve processes of care for a group practice, you find no variability across physicians over time for colorectal cancer screening based on the recommendation of the U.S. Preventive Services Task Force. Is this absence of variation optimal? Why or why not?

This scenario would not be optimal for quality improvement researchers. In QI, researchers are not simply interested in identifying variation; they want to determine its value as well. Understanding the implications for quality of variation in medical practice is not merely learning how to eliminate variation per se. Variation is the difference between an observed event and a standard or norm. Without this standard, or “best practice,” measurement of variation offers little insight beyond a description of the observations, with minimal, if any, understanding of what they mean. The ultimate goal is to learn how to improve performance by identifying and accommodating good or suboptimal variation from a predefined best practice.

For example, as the text notes, if variation reveals a suboptimal process, the QI researcher’s task is to identify ways the variation can be reduced or eliminated that focus on the variation rather than on the people involved. Conversely, when considering a good or desirable variation, it is essential to understand how it can be applied across an organization in an effort to improve quality more broadly.

Therefore, variation tells us what is working and what is not, and how far from optimal our healthcare processes really are.
2. **Discuss the role of financial compensation strategies as part of the process to reduce variation in medical practice. How effective are these financial incentives, especially in terms of timing or use with other strategies?**

Many physicians and hospital administrators work in an environment where an emphasis on short-term financial gain makes it difficult to invest in an infrastructure that improves compliance with best practices. However, as the text discusses, economic incentives may be an effective way of addressing variation in healthcare.

By awarding financial bonuses to physicians and administrators who meet quality targets (or withholding bonuses from those who do not), financial compensation can help determine future success.

One financial incentive model developed by the Health Texas Provider Network demonstrates the effectiveness of such an approach. When the group meets or exceeds quality targets, staff members receive a financial bonus. The overarching goal of the incentive program is to help people understand that their organization is serious about implementing quality changes and minimizing unwanted variation. Ask students to identify some downsides of such incentives.

3. **Identify different ways in which to distinguish between random and assignable variation. Be sure to assess the strengths and weaknesses of each method.**

According to the Institute for Healthcare Improvement (IHI), variation is always seen in data, whether they measure something as straightforward as the daily temperature or as complex as the success of a surgical procedure.

When implementing improvement efforts, it is critical to distinguish between two kinds of variation: random variation, which is inherent to the process, adheres to the
laws of probability, and cannot be traced to a root cause; and assignable variation, which indicates that an underlying change has occurred and its specific cause or causes can be identified. In general, researchers are interested in assignable variation because they can link—or assign—variation to a single specific cause and act accordingly (i.e., trace, identify, implement, or eliminate the cause).

Here are some examples of these types of variation in quality improvement:

- **Random**: Some home health agencies are attempting to reduce the percentage of their patients who visit the emergency room (ER) in a month. Obviously, some patients will have valid reasons for visiting the ER, but too many patients seeking emergency care too often is probably a sign of bad home health care. Researchers could compare home health agencies that treat similar groups of patients and determine that, with excellent quality care, 5 percent of the patients will go to the ER in a month. Even for an agency that provides great care, however, that percentage will vary somewhat from month to month due to chance. During some months, for example, the rate might be 3 percent, and in other months it might be 10 percent, just because two additional patients of these home care agencies had a stroke on the 30th of the current month as opposed to the 2nd of the next month. Differences in month-to-month rates that are not caused by process variation on the part of the agency are an example of random variation in healthcare quality improvement.

- **Assignable**: A healthcare organization wants to increase the number of diabetic foot exams given to a certain patient population. It decides to implement a procedure whereby a sticker is placed on appropriate patient medical record
folders to remind staff to give the patient an exam. A sharp increase in the number of foot exams occurs after this intervention is implemented and is maintained over a certain period. Thus, a direct link can be assigned to this single specific cause and its efficacy traced and validated.

4. *In many cases, improvements in healthcare quality are incremental (evolutionary) changes and not necessarily breakthrough (revolutionary) changes.* Discuss the value of multiple small variations in effecting long-term, sustained improvement.

Creating a culture of change in a healthcare organization is crucial to improving the quality of care it delivers. However, establishing such a culture takes time, resources, and commitment. For example, the CEO of a large, three-hospital health system in Wisconsin that dramatically improved the way it cares for patients, a success story highlighted by IHI, observed, “You have to spend significant time, money, energy and resources to have staff in the mind-set of revolutionary process improvement.” (See “A Culture of Change at ThedaCare” at www.ihi.org/IHI/Topics/Office Practices/Access/ImprovementStories/ThedaCareFeatureStory.htm.)

As the chapter points out, implementing best practices, establishing clinical indicators, and measuring and interpreting variation involve considerable effort, which, when successful, create and sustain an environment conducive to perpetuating these QI initiatives. A complex matrix of demands for quality improvement and change agents exist in an organization. Changing one process will not necessarily result in quality improvement, especially throughout an organization.

While an organization’s size and complexity create functional, geographic, and other systemic constraints to success, both small practices and large systems face difficult
challenges to creating a culture of change. For example, in large organizations, their sheer size can make it difficult to disseminate best practices, and rigid bureaucracies can slow change. Small practices, on the other hand, may have equal difficulty in the change culture effort, especially if only one or two decision makers are involved and they are unwilling to launch, or uninterested in taking on, quality improvement.

Successfully implementing incremental, evolutionary changes both in groups and across systems supports the value of new processes, and these efforts can lead to revolutionary changes that improve the system and benefit patients.
Variation and Quality Improvement

What Is Variation?

• Variation is the difference between an observed event and a standard or norm.

• Without this standard, or best practice, measurement of variation offers little beyond a description of the observations with minimal, if any, understanding what they mean.
Variation and Quality Improvement

Types of Variation Applicable to Quality Improvement

• *Random variation* is inherent in the process, adheres to the laws of probability, and cannot be traced to a root cause.

• *Assignable variation* indicates that an underlying change has occurred and its cause can be identified.
Variation and Quality Improvement

Which Variation Is Most Important to Quality Improvement?

In general, researchers are interested in assignable variation because they can link—or assign—variation to a single cause and act accordingly (i.e., trace, identify, implement, or eliminate the cause).
Variation and Quality Improvement

Three Categories of Variation in Medical Practice

• Process variation

• Outcome variation

• Performance variation
Variation and Quality Improvement

• *Process variation*: the difference in procedure throughout an organization

  – Example: Measuring the degree to which physicians within an organization use various screening methods for colorectal cancer.

  – The difference between process and technique is important. *Technique* refers to the different ways a procedure can be performed within the realm of acceptable medical practice.

  – Without a best practice, process variation offers little beyond an enumeration of methods to fulfill a task.
Variation and Quality Improvement

- *Outcome variation*: the difference in the results of any single process
  - Important to healthcare quality researchers and medical practitioners because it shows which outcome yields the optimum results.
  - Genuine outcome variation requires study over an extended period.
  - Without a threshold value, outcome variation reveals only what happened over time and not the desirability of a particular outcome.
Variation and Quality Improvement

- *Performance variation*: the difference between a given result and the optimal or ideal result
  
  - This best practice is the standard against which all other measurements of variation are compared.
  
  - Performance variation tells us where we are and how far we are from where we want to be. It also suggests ways to achieve the desired goal.
Variation and Quality Improvement

The Objective of Variation in Quality Improvement Is to Determine Its Value

• If variation reveals a suboptimal process, identify ways to reduce or eliminate the variation to focus on the variation rather than the people involved.

• If the variation is good or desirable, determine how it can be applied across an organization to improve quality more broadly.
Variation and Quality Improvement

Scope and Use of Variation in Healthcare

• *Clinical and operational issues:* Implementing best practices, establishing clinical indicators, and measuring and interpreting variation involve considerable effort to create and sustain an environment conducive to sustaining these quality improvements.
Variation and Quality Improvement

- *Organizational size*: The size of an organization affects the ability to disseminate best practices.

- *Organizational commitment*: An organization’s commitment to paying for quality improvement studies and implementation is affected by its size and infrastructure.
Variation and Quality Improvement

- *Strength of data:* Physicians and administrators may challenge results they do not like if they consider the data suspect because of collection errors or other inaccuracies.
Variation and Quality Improvement

Keys to Successful Implementation

• Administrative and physician views
• Patient knowledge
• Organizational mindset
Variation and Quality Improvement

Economic Incentives

• Economic incentives may be effective in addressing variation in healthcare by awarding financial bonuses to physicians and administrators who meet quality targets or withholding bonuses from those who do not.

• The goal of financial incentives is to help employees understand that their organization is serious about implementing quality changes and minimizing unwanted variation to ensure alignment with national standards and directions in quality of care.
Variation and Quality Improvement

Economic Incentives: A Success Story

• Health Texas Provider Network withheld 5 percent of a physician’s salary for quality targets.
  – Preventive health services—70 percent
  – Patient satisfaction—30 percent
• The threshold for meeting quality parameters is to meet or exceed 25% of the overall group performance from the previous year.
• Quality performance money is awarded at the group level, with 10 percent of the total performance fund pool awarded to the group staff.