This is a sample of the instructor resources for Introduction to Healthcare Quality Management by Patrice Spath. This sample contains the PowerPoint slides and instructor notes for the end-of-chapter questions for Chapter 3.

This complete instructor resources consist of 178 PowerPoint slides, 29 pages of instructor notes, and access to a test bank. 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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- Course level (graduate, undergraduate, or continuing education) and expected enrollment
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Answers to Student Discussion Questions

1. For any healthcare activity, three performance factors can be measured: structure, process, and outcome. Identify one structure measure, one process measure, and one outcome measure that could be used to evaluate the following hospital admission process:

Upon arrival, the patient reports to the hospital registration or admitting area. The patient completes paperwork and provides an insurance identification card, if insured. Often, patients register before the date of hospital admission to facilitate the registration process. An identification bracelet including the patient’s name and doctor’s name is placed around the patient’s wrist. Before any procedure is performed or any form of medical care is provided, the patient is asked to sign a consent form. If the patient is not feeling well, a family member or caregiver can help the patient complete the admission process.

Examples of correct answers:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Structure | • Number of hours the registration department computer system is unavailable (downtime hours per month)  
• Number of productive hours worked by staff with patient registration responsibilities  
• Overall turnover percentage for registration staff |
| Process | • Percentage of patients who arrive on nursing units with identification bracelet on wrist  
• Percentage of patients who sign consent form before receiving medical care (excludes emergency situations)  
• Percentage of patients with insurance who do not have a copy of their insurance card made during the admission process |
| Outcome | • Percentage of patients reportedly satisfied with the registration process  
• Average time to complete admission registration process (from time of arrival to departure from admitting area)  
• Number of insurance payment denials due to inaccurate or incomplete insurance information. |
2. For each measure you selected to evaluate the hospital admission process, describe the measure in fundamental terms. What are the numerator and denominator? If the measure does not require a numerator and denominator, explain why.

Examples of correct answers:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Measure Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hours the registration department computer system is unavailable (downtime hours per month)</td>
<td>This is an absolute number. Does not require a numerator and denominator.</td>
</tr>
<tr>
<td>Number of productive hours worked by staff with patient registration responsibilities</td>
<td>This is an absolute number. Does not require a numerator and denominator.</td>
</tr>
</tbody>
</table>
| Overall turnover percentage for registration staff                      | Numerator: Total number of registration staff employed during the year  
Denominator: Current number of registration staff                           |
| Percentage of patients who arrive on nursing units with identification bracelet on wrist | Numerator: Number of patients who arrive on nursing units with identification bracelet on wrist  
Denominator: Total number of patients who arrive on nursing units |
| Percentage of patients who sign consent form before receiving medical care (excludes emergency situations) | Numerator: Number of nonemergent patients who sign consent form before receiving medical care  
Denominator: Total number of nonemergent patients who receive medical care |
| Percentage of patients with insurance who do not have a copy of their insurance card made during the admission process | Numerator: Number of patients with insurance who do not have a copy of their insurance card made during the admission process  
Denominator: Total number of patients with insurance |
| Percentage of patients reportedly satisfied with the registration process | Numerator: Number of patients who report being satisfied with the registration process  
Denominator: Number of patients who answer question about the registration process on satisfaction survey |
<table>
<thead>
<tr>
<th>Measure</th>
<th>Possible Data Source</th>
</tr>
</thead>
</table>
| Average time to complete admission registration process (from time of arrival to departure from admitting area) | Numerator: Total number of minutes from time of arrival in waiting area to departure from admitting area for all patients included in the study period  
Denominator: Total number of patients included in the study period |
| Number of insurance payment denials due to inaccurate or incomplete insurance information       | Numerator: Number of insurance payment denials due to inaccurate or incomplete insurance information  
Denominator: Number of insurance claims submitted                                                                                             |

3. Suppose the manager of the hospital registration area wants to gather data to report performance results for the measures you've chosen. What data source could be used to gather information for the measures? Why would these data sources be best for gathering reliable data?

Examples of correct answers:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Possible Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hours the registration department computer system is unavailable (downtime hours per month)</td>
<td>Log of computer downtime maintained by admission department manager. Data obtained from this log.</td>
</tr>
<tr>
<td>Number of productive hours worked by staff with patient registration responsibilities</td>
<td>Productive hours at the end of each shift compiled by admissions department supervisor. Hours totaled at end of month.</td>
</tr>
<tr>
<td>Overall turnover percentage for registration staff</td>
<td>Human resource department computer system contains data on number of hires and current number of staff. Data obtained from human resource department.</td>
</tr>
<tr>
<td>Percentage of patients who arrive on nursing units with identification bracelet on wrist</td>
<td>Nursing staff check for bracelet at time of admission assessment. Incident report completed when bracelet is missing. Data obtained from incident reports.</td>
</tr>
<tr>
<td>Percentage of patients who sign consent form before receiving medical care (excludes emergency situations)</td>
<td>Nursing staff check for signed consent before patient receives medical care. Incident report completed when consent is not signed for nonemergent care. Data obtained from incident reports.</td>
</tr>
<tr>
<td>Percentage of patients with insurance who do not have a copy of their insurance card made during the admission process</td>
<td>Billing staff check for copy of insurance card during preparation of insurance claim. Staff keeps a tally of files missing a copy of the patient’s insurance card. Data obtained from their tally sheets.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Percentage of patients reportedly satisfied with the registration process</td>
<td>Satisfaction survey provided to all patients at time of discharge. Data obtained from returned surveys.</td>
</tr>
<tr>
<td>Average time to complete admission registration process (from time of arrival to departure from admitting area)</td>
<td>Each week, 30 random patients (10 per shift) are tracked from time of arrival in waiting area until departure from admitting area. Admitting supervisors collect these data with assistance from volunteers who staff the waiting area.</td>
</tr>
<tr>
<td>Number of insurance payment denials due to inaccurate or incomplete insurance information.</td>
<td>Billing department maintains computerized list of insurance payment denials and cause of the denials. Data obtained from this list.</td>
</tr>
</tbody>
</table>

4. **Query the NQMC** ([www.qualitymeasures.ahrq.gov](http://www.qualitymeasures.ahrq.gov)) and identify five evidence-based performance measures related to prescribing the correct medications for hospitalized patients. The measure should focus on choosing the right medication for the patient’s condition. List each measure, the organization or group that developed the measure, and the date the measure was published.

On the National Quality Measures Clearinghouse (NQMC) students will find numerous examples of measures related to correct prescription of medications for hospitalized patients. Using the detailed search function, limit the measurement search to the hospital care setting. Many of the medication-related measures are in the Institute of Medicine domain of effectiveness. Students will need to scroll through the advanced search results and find measures that relate to the use of medications. Below are examples of measures:

- Intensive care: number of ventilator days where the patients received deep vein thrombolysis (DVT) prophylaxis.
• Community-acquired bacterial pneumonia: percentage of patients who were prescribed an appropriate empiric antibiotic.

• Stroke and stroke rehabilitation: percentage of patients aged 18 years and older with a diagnosis of ischemic stroke or intracranial hemorrhage who received DVT prophylaxis by end of hospital day 2.

• Management of labor: percentage of women in the guideline population with failure to progress diagnosis who have oxytocin.
Introduction to Healthcare Quality Management

Measuring Performance
Measurement

- **Purpose:** Understand current performance, identify where improvement is needed, and evaluate how changes in work processes affect performance
Measurement: The Starting Point

Measurement is a tool used to monitor the quality of some aspect of healthcare services.

- Absolute number
- Percentage
- Average
- Ratio
Effective Measurement

- Accurate
- Useful
- Easy to interpret
- Consistently reported

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Three Measurement Categories

- Structure
- Process
- Outcome
Structure Measures

- Assess the adequacy of the environment in which medical care takes place
  - For example: Number of registered nurse hours worked per nursing home resident day

- Often used for licensing and accreditation
Process Measures

- Assess what is being done and whether the system is working as it should
  - Example: Percentage of women (age 42–69) who had a mammogram during the previous 12 months

- The most common type of healthcare performance measure

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Outcome Measures

- Assess discrete, patient-focused endpoints
  - Example: Percentage of home health care patients who were admitted to a hospital for 24 hours or more while a home health patient

- Results can be influenced by factors out of the provider’s control
### Measurement Levels

#### System level and activity level

<table>
<thead>
<tr>
<th>Setting</th>
<th>Organization-Wide Performance Goal</th>
<th>System-Level Measure</th>
<th>Activity-Level Measures</th>
</tr>
</thead>
</table>
| University student health center | Inform and educate students on wellness and prevention issues relevant to their age group            | Percentage of incoming freshmen who are vaccinated for meningococcal meningitis within three months of first semester | - Number of hours the vaccination clinic is open each month  
- Percentage of incoming freshmen who receive written information about the meningococcal meningitis vaccine  
- Percentage of incoming freshmen who complete and return the vaccination survey                                                                 |
| Hospital                   | Reduce incidence of hospital-acquired infections                                                  | Percentage of patients who develop an infection while in the hospital                | - Rate of staff compliance with hand hygiene procedures  
- Percentage of central vein line catheter insertions done according to protocol  
- Percentage of staff immunized for influenza                                                                 |
Selecting Measurement Topics

- **External influences**
  - Priorities of national groups (regulatory, accreditation, and purchasers)

- **Internal influences**
  - Strategic priorities of the organization
How to Construct a Measure

- Identify topic of interest
- Develop measure
- Design data collection system
What do you want to know?

- Laboratory function: analyzing specimens and reporting test results
- Consider the six Institute of Medicine key dimensions of quality: What might the laboratory director want to know?

<table>
<thead>
<tr>
<th>Quality Dimension</th>
<th>Performance Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe</td>
<td></td>
</tr>
<tr>
<td>Effective</td>
<td></td>
</tr>
<tr>
<td>Patient centered</td>
<td></td>
</tr>
<tr>
<td>Timely</td>
<td></td>
</tr>
<tr>
<td>Efficient</td>
<td></td>
</tr>
<tr>
<td>Equitable</td>
<td></td>
</tr>
</tbody>
</table>
Define the measure in fundamental measurement terms

Culture results can be inaccurate when specimen are contaminated during a blood draw. What data are needed to measure the percentage of blood specimens collected for culture that are found to be contaminated?

Numerator:

Denominator:
Design Data Collection Strategy

- Identify the best sources of accurate data.

- Identify *what, who, when, and how.*
What and Who

- **What**
  - Study population
  - Sample or not?

- **Who**
  - Data collectors
  - Provide oversight of data collectors
  - Provide sufficient training and supervision

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When and How

- **When**
  - Frequency of data collection
  - Frequency of data reporting

- **How**
  - Data collection instruments
  - Electronic data query
National Quality Forum (NQF)

- Quality stakeholder group formed in 1999
  - Goal: Create national standards for measurement and public reporting of healthcare performance data

- NQF endorsement is a “seal of approval” for healthcare quality measures
  - Importance
  - Scientific acceptability
  - Usability
  - Feasibility

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Clinical Measures

- Clinical decision making
  - Process by which physicians and other clinicians determine which patients need what and when

- Measures of clinical decision making
  - Often derived from clinical practice guidelines
    “Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances”

Clinical Measures

- Measures of clinical decision making
- Primarily evidence-based process measures

<table>
<thead>
<tr>
<th>Topic of Interest</th>
<th>Evidence-Based Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of patients with asthma</td>
<td>Percentage of patients aged 5 through 40 with a diagnosis of mild, moderate, or severe persistent asthma who were prescribed the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment</td>
</tr>
<tr>
<td>Management of patients with non-traumatic chest pain</td>
<td>Percentage of patients aged 40 or older with an emergency department discharge diagnosis of non-traumatic chest pain who had a 12-lead electrocardiogram performed</td>
</tr>
<tr>
<td>Management of patients with osteoporosis</td>
<td>Percentage of patients aged 50 or older with a diagnosis of osteoporosis who were prescribed pharmacologic therapy</td>
</tr>
<tr>
<td>Management of children with pharyngitis</td>
<td>Percentage of children aged 2 through 18 with a diagnosis of pharyngitis who were prescribed an antibiotic and received a group A streptococcus test for the episode</td>
</tr>
<tr>
<td>Management of patients with diabetes mellitus</td>
<td>Percentage of patients aged 18 through 75 with diabetes mellitus whose most recent blood pressure measured less than 140/80 mm Hg</td>
</tr>
</tbody>
</table>
What Is a Balanced Scorecard?

- A Balanced Scorecard is a framework that helps organizations put strategy at the center of the organization by translating strategy into operational objectives that drive behavior and performance.
# Scorecard Categories and Measures

<table>
<thead>
<tr>
<th>Category</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>• Percentage of patients who would recommend the facility</td>
</tr>
<tr>
<td></td>
<td>• Number of new managed care contracts each year</td>
</tr>
<tr>
<td></td>
<td>• Percentage of patients satisfied with services</td>
</tr>
<tr>
<td></td>
<td>• Percentage of payers satisfied with services</td>
</tr>
<tr>
<td></td>
<td>• Number of service complaints</td>
</tr>
<tr>
<td></td>
<td>• Rate of employee turnover and retention</td>
</tr>
<tr>
<td>Internal business</td>
<td>• Average patient length of stay</td>
</tr>
<tr>
<td></td>
<td>• Percentage of patients readmitted for the same or a similar condition</td>
</tr>
<tr>
<td></td>
<td>• Rate of patient falls</td>
</tr>
<tr>
<td></td>
<td>• Rate of medication errors</td>
</tr>
<tr>
<td></td>
<td>• Number of employee occupational injuries</td>
</tr>
<tr>
<td></td>
<td>• Cost per case</td>
</tr>
<tr>
<td>Learning and growth</td>
<td>• Percentage of capital expenditures spent on key infrastructure targets</td>
</tr>
<tr>
<td></td>
<td>• Dollar amount of employee tuition reimbursement</td>
</tr>
<tr>
<td></td>
<td>• Number of continuing education credits per full-time employee</td>
</tr>
<tr>
<td></td>
<td>• Percentage of clinical staff trained in teamwork</td>
</tr>
<tr>
<td></td>
<td>• Number of new services offered</td>
</tr>
<tr>
<td></td>
<td>• Number of new research projects</td>
</tr>
<tr>
<td>Financial</td>
<td>• Volume growth by key service lines</td>
</tr>
<tr>
<td></td>
<td>• Dollars generated from new contracts</td>
</tr>
<tr>
<td></td>
<td>• Dollar amount of community donations (e.g., corporate gifts)</td>
</tr>
<tr>
<td></td>
<td>• Growth in net revenues</td>
</tr>
<tr>
<td></td>
<td>• Operating margin</td>
</tr>
<tr>
<td></td>
<td>• Days of cash on hand</td>
</tr>
</tbody>
</table>

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Measurement: Only the Starting Point

Measurement alone does not improve performance

- Results must be analyzed to determine whether performance is acceptable and to identify areas needing improvement.