Severity of Illness and Risk of Mortality – The Basics

Learning Objectives

• Explain profiling and how it impacts hospitals and physicians
• Recognize the mechanics of profiling and why hospitals and physicians are assigned ratings
• Apply lessons learned to case studies and query examples
• Describe methods for improving physician engagement using SOI/ROM principles

“News Brief: Healthy Cardiac Patients Dying at ABC Hospital”

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Healthcare Issues and Trends

• Financial pressures
  – Finite resources, infinite appetite
• Healthcare consumerism – public profiling
  – Healthgrades.com
  – Leapfroggroup.org
  – WebMD.com
  – CMS.gov
  – State organizations
• Pay for performance
  – "MedPAC backs tying Medicare payments to quality" – Modern Healthcare

Why Do Severity & Risk Adjustment?

To account for differences related to the patient’s severity of illness and risk of mortality so you can focus on opportunities for improvement

• Credibility of data with physicians
  – "My patient is sicker!"
• Comparative performance reports
  – Internal
  – External
  – Public
• Comparison of hospitals across a wide range of resource utilization and outcomes

Recent Small Town Newspaper Article

ABC Hospital makes it on "worst" list

ABC Hospital Center is one of the seven medical centers of the more than 4,500 hospitals across the country to fall on the "worse than the U.S. national rate" list for patient heart attack mortality.

The Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services (HHS), released the comparison last week. These mortality measures are risk-adjusted and take into account previous health problems to "level the playing field" among hospitals.

City Newspaper Article

• “Medical Center gets a poor rating”
  – "Medical Center treats some of the sickest patients in the area"
    • “But if a patient's level of illness is not properly recorded in the medical chart, report cards that compare actual mortality rates to predicted rates will not reflect the true severity of the cases”
**USA Today Article**

- Barry Straube, director of CMS’ office of standards and quality, stated in USA Today July 7, 2009: “agency aims to intensify competition between hospitals by giving patients the information they need to seek out higher quality of care and by giving hospitals a way to measure their performance against their competitors, and it provides a tool that the government and private health plans can use to determine which hospitals merit higher pay for better performance.”
- “This kind of information is absolutely the backbone of many of our efforts to reform the health system.”

**Definitions**

- **Severity of illness (SOI):** The extent of physiologic decompensation or organ system loss of function
- **Risk of mortality (ROM):** The likelihood of dying

**Underlying Principle of Severity of Illness and Risk of Mortality**

Severity of illness and risk of mortality are dependent on the patient’s underlying conditions.

High severity of illness and risk of mortality are characterized by multiple serious diseases and the interaction among those diseases.

**What Comprises a Successful Profile?**

- Accurate patient classification
- Justification of resource utilization and LOS
- Positive outcomes
### Any Documentation Improvement Program Should:

- Encompass a concurrent review process involving an interdisciplinary team working together
- Assess whether all conditions and treatments are reflected in the medical record (not just the MCC or CC diagnoses)
- Be based on CMS’ rules and regulations
- Not JUST be focused on reimbursement, but also focused on compliance

### How Are the Profiles Used?

- Compare actual vs. expected mortality
- Compare average patient LOS and charges/costs of an organization or physician to their peers to determine performance
- Used to create process from admission to discharge for common diagnoses
- Offer facilities and physicians feedback on performance compared to peers and similar groups
- Physicians and hospitals can be excluded from networks based on aggregate data
- Used to monitor hospital and physician practice and encourage efficiency and quality
- Often perceived as a measurement of quality, cost-efficiency, and timeliness of care delivery

### Who Is Profiling Hospitals & Physicians?

- Federal/state regulatory agencies
- Joint Commission on Accreditation of Healthcare Organizations
- CMS
- Vendors
- Peer review organizations
- Managed care payers
- Third-party payers
- Profiling agencies
- Hospitals
- Physician groups
- State health departments
- Employers
- Public – Internet
### Secondary Diagnoses

- For reporting purposes, the definition for “other diagnoses” is interpreted as additional conditions that affect patient care in terms of requiring at least one of the following:
  - Clinical evaluation
  - Therapeutic treatment
  - Diagnostic procedures
  - Extended length of hospital stay
  - Increased nursing care and/or monitoring

- Coding directives say “probable,” “suspected,” “clinical,” or “unable to rule out” diagnoses are to be coded as though they exist, unless ruled out in the inpatient setting.

### 3M™ APR DRG Classification Data Elements

- **MDC Major Diagnostic Category**
- **Base APR DRG**
- **Four severity of illness subclasses**
  1. Minor
  2. Moderate
  3. Major
  4. Extreme
- **Four risk of mortality subclasses**
  1. Minor
  2. Moderate
  3. Major
  4. Extreme

### Example of Severity-of-Illness Progression of Subclass

<table>
<thead>
<tr>
<th>Severity of Illness</th>
<th>Secondary diagnosis of diabetes mellitus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Minor</td>
<td>Uncomplicated diabetes (250.0X)</td>
</tr>
<tr>
<td>2 Moderate</td>
<td>Diabetes with renal manifestation (250.4X)</td>
</tr>
<tr>
<td>3 Major</td>
<td>Diabetes with ketoacidosis (250.1X)</td>
</tr>
<tr>
<td>4 Severe</td>
<td>Diabetes with hyperosmolar coma (250.2X)</td>
</tr>
</tbody>
</table>

### Examples of Standard Risk-of-Mortality Progression of Subclass

<table>
<thead>
<tr>
<th>Risk of mortality</th>
<th>Secondary diagnosis of cardiac dysrhythmias</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Minor</td>
<td>Premature beats (427.60)</td>
</tr>
<tr>
<td>2 Moderate</td>
<td>Sinoatrial node dysfunction (427.81)</td>
</tr>
<tr>
<td>3 Major</td>
<td>Paroxysmal ventricular tachycardia (427.1)</td>
</tr>
<tr>
<td>4 Severe</td>
<td>Ventricular fibrillation (427.41)</td>
</tr>
</tbody>
</table>
Pay for Performance

- Pay for performance links quality of care and payment
- APR DRGs are used for payment in multiple states
  - State of Maryland
  - Medicaid plans
  - Commercial payers

Common Diagnoses That Can Impact Profiling

- Specific types of organ failures and acuity ("MODS" does not count)
- Specific metastatic sites
- Specific electrolyte abnormalities
- Arrhythmias (both sustained and episodic)
- Malnutrition with type and acuity
- Coma
- Acidosis, alkalosis

Common Diagnoses That Are Not MCCs or CCs, That Can Impact Profiling

- Old MI
- Pressure ulcer (even unspecified stage or site)
- Residuals from CVAs
- Trach status
- Transplant status

Common Diagnoses That Are Not MCCs or CCs, That Can Impact Profiling

- Apnea & Cheyne-Stokes respirations
- Autoimmune diseases (e.g., Wegner’s, lupus, Sjogren’s)
- Awaiting transplant status
- Bundle branch block
- BMI
- Dementia
- Dependence on oxygen
- Dependence on ventilator
- Hypoxia & hypotension
Common Diagnoses That Are Not MCCs or CCs, That Can Impact Profiling

- Due to the complexity of the APR methodology, it is impossible to provide a comprehensive list.
- The previous list may not always impact the SOI/ROM when used in combination with certain principal or secondary diagnoses.

Case Studies

Case Study #1

Elderly male admitted w/metastatic lung cancer—pneumonectomy done PTA.
Receiving R.T. for mets to shoulder—steadily declining & bed-ridden x4 weeks.
C/O SOB; ABGs: PH 7.53, pCO2 44.4, pO2 24, O2 sat 48%—put on O2—would concurrently query for diagnosis.
BUN/creatinine 45/2.9—no documentation of baseline.
Tx: 500 mL IVF bolus in ED then 1L IVF bolus in ED. Would concurrently query for diagnosis.
ED Dr. notes “ill-appearing, thin, cachectic … temporal wasting.” “Decided not to treat at this time” per dietary, and physician ordered diet per pt. desires. Would concurrently query for diagnosis.
Later in admission BP fell to 81/48, HR 91, 72/43, 60/36, 88/47. No tx given but BP monitored frequently, would concurrently query for diagnosis.
Lastly, on admission pt. WBC 20.6, absolute neutrophils 17.8 (WNL 1.7–6.7), bands 15%—pt. made DNR so no antibiotics were given. Concurrently would query for diagnosis. (Sepsis?)
LOS 6 days and then pt. expired.

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Query: Case Study #1

Dr. Jones,
- BUN/creat 49 & 2.9 — no baseline noted
- Pt. received 2 IVF boluses in ED; 500 mL, and then 1L
- Based on elevated labs and treatment, please provide a diagnosis based on elevated BUN/creat and treatment

- ALSO - -

- BP readings: 81/48, HR 91, 72/43, 60/36, 88/47
- Based on the abnormal BP readings, please provide a corresponding diagnosis

Thank you,
Cindy
Case Study #2

Patient admitted in septic shock with concurrent AML. Serial ABGs indicated pH 7.30, pCO2 29, pO2 120 and pH 7.34, pCO2 29, pO2 96. Urine pH ordered. Treated with 4L O2 per NC, and intermittent BIPAP.

An opportunity exists to concurrently query for “acidosis” as a SDx to impact SOI & ROM.

Query: Case Study #2

Dr. Jones,

- Patient admitted in septic shock with concurrent AML
- ABGs: pH 7.30, pCO2 29, pO2 120 and pH 7.34, pCO2 29, pO2 96
- Treatment: 4L 02/nasal cannula, and intermittent BIPAP

Based on the abnormal ABGs and treatment, is there a diagnosis that more accurately reflects the patient’s severity of illness?

Thank you,
Cindy

Case Study #3

Pt. trans. in from another hosp. where he had AVR and CABG. Postop developed right gaze deviation & became unresponsive. Was transferred to medical center. GCS was 6; NIHSS was 25 upon admission. Was made DNR. Several PNs describe pt. as “unarousable & unresponsive” until death. Would query for corresponding diagnosis.

Query: Case Study #3

Dr. Jones,

- Transferred in for right gaze deviation and unresponsiveness
- GCS 6; NIHSS 25 upon admission
- PNs all state “unarousable” & “unresponsive” until death

Based on the GCS and unresponsiveness, please provide a corresponding diagnosis.

Thank you,
Cindy
Pt. adm. for altered mental status, agitation, UTI, and aspiration pneumonia. ED Dr. noted "pt. hot to touch, shaky, very thin & dehydrated ... concern for UTI vs. urosepsis." Other documentation in MR was: "UTI w/leukocytosis," "UTI, uspsepsis, UTE/UTI w/shock." Put on IV Levaquin, Vanco, and Rocephin.

Temps up to 103.8, WBC 16–20.4, neutrophils elevated, > 10% bands. Pt. had cardiac arrest few days after admission and was intubated, expired on the next day.

Would query physician for a more accurate principal diagnosis based on above clinical picture and existing documentation.

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Query: Case Study #4

Dr. Jones,

- Pt. with WBC 16–20.4 range, neutrophils elevated, lymphs decreased, bands > 10%
- Temp 100–102.6
- 2 sources of infection: UTI and aspiration pneumonia
- Documentation of UTI w/leukocytosis, urosepsis (codes to UTI), and "UTI w/infection"
- Pt. unresponsive and on ventilator

Please clarify if urosepsis is a UTI, or sepsis related to a UTI in your progress notes

Thank you,

Cindy

77-year-old male is admitted with severe dehydration and metastatic CA. Pt. arrived unresponsive to ED. BP 59/29, HR 130. Pt. received NS bolus x 2 liters, D51/2 NS wide open. Labs on admission showed:

- Serum glucose 36
- BUN 76
- Cr 3.4
- Na 158
- Cl 120

Pt. started on tube feedings. Pt. eventually expired.

Would concurrently query physician for diagnoses to go with above findings: "hypovolemic shock," "acute renal failure," "dehydration," and "malnutrition" to show more accurate severity and mortality classification.

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Query: Case Study #5

Dr. Jones,

- Pt. with metastatic cancer admitted unresponsive to hosp
- BP 59/29, HR 130, BUN 76, Cr 3.4, Na 158, Cl 120, glucose 36
- Pt. received 3 liters IVF bolus in ED for low BP, then maintenance IVFs

Based on the low SBP and treatment, and abnormally high BUN and creatinine, please provide corresponding diagnoses

Thank you,

Cindy
Query: Case Study #5

Dr. Jones,

• You documented “looks very anorexic and cachectic.” Dietary noted “pt. has had loss of 22 pounds in last 6 weeks due to not eating.”
• Treatment: Pt. started on tube feedings.

Based on weight loss with mets, treatment, and description of patient, please provide a corresponding diagnosis

Thank you,
Cindy

Potential Causes for High Risk-Adjusted Mortality

• The coding is not correct
• The medical care is suboptimal
• Physician documentation of diagnoses is not complete and not specific enough

Physician Engagement

• Physicians don’t like to be told what to do; you have to get their buy-in by showing them how it impacts them.
• “What’s in it for me?”
• Physicians are driven by data. If you show that their profile (that the rest of the world sees) shows them as being less excellent than they think they are, the physicians will respond accordingly!
• Make it about quality, not money!
Physician Engagement

- Must have support of administration and management
- Must have a supportive and active physician champion/advisor who will:
  - Provide support within the medical community to enhance the process of obtaining the most accurate and complete documentation in the medical record to:
  - Assist with ongoing education related to the documentation enhancement process, including any changes in documentation requirements
  - Review, distribute as appropriate, and act on findings with respect to trends in SOI, ROM, and certain CMS indicators
  - Review and provide input on educational posters, information sheets, etc. -traditional or electronic media
  - Facilitate clinical education when requested

Physician Seminars

- Tailor presentations to specialty and/or subspecialty
  - Specifically target top-volume admitters
  - Utilize one-on-one and group education methodology
- Provide documentation tips for improving severity of illness & risk of mortality reflection (e.g., improving hospital and physician profiling)
  - Highlight most common areas of incomplete documentation by specialty using actual clinical examples
  - Distribute educational materials and information that will assist them with their accurate documentation
  - Show physicians the hospital’s mortality data from publicly available websites if data monitoring is not available

Types of Physician Documentation Not Affecting SOI and ROM (Please Query!)

Actual provider documentation found in charts:
- She has no rigors or shaking chills, but her husband states she was very hot in bed last night.
- Large brown stool ambulating in the hall.
- Patient has two teenage children, but no other abnormalities.
- The patient has been depressed since she began seeing me in 1993.
- Discharge status: Alive but without my permission.
- Healthy appearing decrepit 69-year-old male, mentally alert but forgetful.

Types of Physician Documentation Not Affecting SOI and ROM (cont.)

- The patient refused autopsy.
- Patient had waffles for breakfast and anorexia for lunch.
- Rectal examination revealed a normal size thyroid.
- She stated that she had been constipated for most of her life until she got a divorce.
- Both breasts are equal and reactive to light and accommodation.
- Examination of genitalia reveals that he is circus sized.
- The patient was to have a bowel resection. However, he took a job as a stock broker instead.
Thank you. Questions?

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