**Primer: Quality Measurement Efforts**

**Measurement is a way of monitoring whether we are achieving our goals**

### Quality Measurement Efforts
- **Clinical improvement** — focus is on change from current state to new state
- **Performance measurement** — a quantitative way to measure health care quality which may or may not have resulted from a clinical improvement

**Caution ➔ Measurement is complex and prone to pitfalls**
- Look for valid and useful evidence using an evidence-based approach
  - When measuring health status outcomes, use proxies which are related to services or processes
- Quality measurement efforts are usually observational, not experimental. Observations are highly prone to confounding
  - For clinical interventions, unless you are doing “research,” you should choose to measure occurrences that have a link to the outcomes

### Advice
- Utilize valid, useful evidence as much as you can
- Be aware of pitfalls and potential for confounding
- Try to frame as a focus on “attention to quality”

### Occurrences for Measurement

1. **Outcome-related occurrences:**
   a. Health status outcomes: morbidity, mortality, symptom relief, functioning and health-related quality of life
   b. Health care outcomes: satisfaction, behaviors, costs
2. **Performance-related occurrences:** diagnostic, therapeutic and monitoring interventions
3. **Process-related occurrences:** patient services such as visits, providing information, etc., and behind-the-scenes processes such as hours worked, equipment calibration, chart delivery, etc.

### Measurability Considerations

- Measures should be —
  a. Quantifiable and valid
  b. Measure is accurate (e.g., correctly identifies the occurrences it is designed to identify) and dependable (e.g., with repeated testing measurement should yield same results)
  c. Measure is useful and usable — includes capability for risk stratification, comprehensible and helps with quality improvement

### Performance Measurement

- Performance measurement in clinical care is a quantitative way to measure what is done to patients or what care patients receive, consisting of a denominator, a numerator and a frequency
  - To measure quality, the denominator specifies the “universe” of who or what ought to have had an occurrence (e.g., who should be treated with an ARB).
  - The numerator is the count of what actually happened (e.g., who actually got an ARB out of those who should have received an ARB).
  - The frequency specifies how often it is supposed to happen.
# Primer: Quality Measurement Efforts

| **Performance Measure Validity** | **Denominator** = the base number of units from which you are measuring for your improvement  
| **Numerator** = the subset of your denominator in which you will count the number of occurrences of your events of interest  
| **Frequency for measurement** = the intervals for your measurement  
| **Example** | “All patients, without exclusions, with diagnosis of diabetes mellitus receiving at least one hemoglobin A1c annually” |
| **A valid denominator specifies the right base from which the measurement will be made (what ought to be measured)**  
| **Denominator validity means that the denominator has the right inclusions and exclusions to identify the right pool for measurement**  
| **Numerators generally count events such as something that happens to a patient or something patients receive**  
| **A valid numerator is based on valid, useful and usable scientific evidence**  
| **Ideally frequency and other time issues in numerators, such as time-to-intervention, is derived from evidence** |
| **Caution** | Even with a valid measure, invalid results can occur if appropriate data are not obtained or gathered correctly |

| **Performance Measure Calculation** | Numerator: (# of patients meeting numerator criteria) **divided by**  
| Denominator: (# patients in denominator) – (# patients with valid denominator exclusions) |

| **Performance Measure Pitfalls** | **Performance Measure Cautions (including P4P applications)** | In addition to potential problems of invalid numerators, denominators and frequencies and data collection challenges, performance measures can severely threaten quality if not utilized correctly —  
| **Potential for misleading information about what constitutes quality care or what quality achieved**  
| **Penalize quality performers**  
| **Reward poor performers**  
| **Alienate those who are “measured”** |
| **These potential pitfalls include —**  
| **Differences in populations which might not be adjusted successfully through risk adjustment**  
| **Performance measures can introduce an element of inflexibility**  
| **Legal considerations** |
| **Caution** | Evaluating and comparing organizations, units and individuals using performance measures can result in misleading conclusions. Some relevant factors include —  
| Bottom-line: performance measures (and therefore pay-for-performance initiatives) have the potential for misinforming the end-user:  
| **The system can be gamed**  
| **Risk adjustment challenges**  
| **Appropriate actions may have been taken to improve quality of care, but because of patient factors, systems factors or small sample size, performance may not result in clinical improvement**  
| **Small sample sizes can create validity problems, especially at the individual level**  
| **Many confounders**  
| **Adjusting for case mix is problematic** |