AQSI MULTIPLE CHOICE KNOWLEDGE TEST

Introduction /Quality and Measurement

1. Which one of the following is an example of a process measure of quality?
    a. The percentage of patients diagnosed with deep venous thrombosis within 30 days of total hip replacement
    b. Having all intensive care patients cared for by physicians trained in critical care medicine
    c. Percentage of hospitalized patients with acute myocardial infarction receiving aspirin in the first 24 hours
    d. Risk adjusted 30-day mortality rate for patients undergoing coronary artery bypass graft

Answer: C

Explanation: Process measures ascertain whether certain recommended care processes were administered (what was done). Structure measures (answer B) represent the physical and organizational aspects of a clinical setting (how care is delivered). Outcome measures (answers A and D) reflect the results of care received (what happened to the patient).

2. Which of the following is the most appropriate comparison of process and outcome measures?
    a. Process measures require larger sample sizes than outcome measures
    b. Outcomes measures are less important than process measures
    c. Process measures are easily obtained from most administrative databases
    d. Outcomes measures frequently require risk adjustment while process measures do not

Answer: D

Explanation: Data for process measure can be collected using a relatively small sample and risk adjustment is not needed. Unfortunately, administrative (billing and coding) databases frequently do not include process measures of interest to clinicians. Certain outcome measures like 30-day readmissions and mortality are typically adjusted for comparison across hospitals, health systems, or providers.

3. Which of the following outcome measures is reported on the CMS Hospital Compare website?
    a. Number of rapid response team activations per 1000 patient days
    b. Patient survival to discharge after cardiac arrest
    c. 30 day mortality after acute myocardial infarction
    d. Percentage of patients seen in follow up appointment within 2 weeks of discharge

Answer: C

Explanation: All of the answers reflect outcomes, but only answer C is publicly reported on the CMS Hospital Compare website.

Patient Safety

4. Following a sentinel event, your healthcare organization convenes a group to perform a root cause analysis (RCA). Which of the following components of the meeting is most important for a successful RCA?
    a. Attendance by senior organizational leadership
    b. Maintenance of patient confidentiality
    c. Creating a safe environment for the participants
    d. Scheduling at a time that is convenient for the physicians

Answer: C

Explanation: While maintenance of patient confidentiality and maximizing attendance are both important, creating a safe environment is essential to ensure participants share information and concerns freely.

5. A hospitalist is experiencing a busier than usual day. Starting the day with 16 patients, he has already admitted 5 more. The high volume is related to unexpected departures from the hospital medicine group, resulting in understaffing. Complicating matters, nurses are also understaffed and the hospital recently implemented a new computerized provider order entry (CPOE) system. As the hospitalist is placing orders on a new patient admitted for hemodialysis, he is paged regarding another patient actively dying of pancreatic cancer. He mistakenly places an order for long acting morphine, intended for the cancer patient, on the patient being admitted for hemodialysis. The nurse taking care of the hemodialysis patient administers the morphine and the patient develops respiratory failure. Hospital leadership terminate the employment of the nurse involved and provide additional CPOE training for the hospitalist.

This approach is most likely to result in which of the following?
    a. A more thorough process of hiring hospitalists on the part of the hospital medicine group
    b. A reduction in CPOE related errors on the part of hospitalists
    c. Nurses being more assertive in questioning physician orders
    d. Nurses being less willing to admit mistakes

Answer: D
Rationale: Overemphasis on human error is often counterproductive. It ignores the fact that multiple errors, at various stages in clinical care, contribute to most adverse events. It often results in attempts to reprimand (blame) or retrain individuals rather than efforts to address systems deficiencies. Perhaps most importantly, overemphasis on human error fosters a culture of silence as individuals feel progressively less comfortable voicing concerns. Lack of information from front-line professionals hinders an organization's ability to learn about patient safety issues and address them before further harm occurs.

6. If you identify a clinical concern that has the potential to cause patient harm, what is the best way to ensure there will be appropriate evaluation of that concern?
    a. File an incident report using the Northwestern Event Tracking System (NETS)
    b. Contact your direct supervisor or Department Chair
    c. If very serious, notify the CEO
    d. Present the case in your Department's M&M conference

Answer: A
Filing a NETS report allows our health system to track, categorize, and investigate patient safety events. You may enter your contact information if you wish follow up or you may complete a NETS report anonymously. The other options may be also be appropriate depending on circumstances, but do not replace the need to complete a NETS report.

Patient Centeredness

7. Which best represents a critical element of Patient-Centered Care?
    a. Meeting or exceeding all patient expectations
    b. Ensuring patients know the technical terms for their treatments
    c. Involving patients in medical decision making
    d. Advocating one's patients are moved up in the queue in place of other patients

Answer: C
Rationale: Patient-Centered Care includes the following elements:
- Informs and involves patients in medical decision making and self management
- Coordinates and integrates medical care
- Provides physical comfort and emotional support
- Understands the patients' concept of illness and their cultural beliefs
- Understands and applies principles of disease prevention and behavioral change appropriate to diverse populations

8. Patient-Centeredness is best defined as:
    a. Having the patient make all decisions in regards to their medical care
    b. Providing care that is respectful of and responsive to individual patient preferences, needs and values
    c. Practicing evidence based medicine to ensure that patients receive high quality care
    d. A philosophy that focuses more on holistic healing and complementary medicine than conventional medical care

Answer: B

Rationale: Patient-Centered Care includes the following elements:
- Informs and involves patients in medical decision making and self management
- Coordinates and integrates medical care
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- Understands the patients' concept of illness and their cultural beliefs
- Understands and applies principles of disease prevention and behavioral change appropriate to diverse populations

9. By which group is the use of HCAHPS mandated?
    a. Hospital Boards of Directors
    b. Centers for Medicare and Medicaid Services
    c. State departments of health
    d. Accreditation Council of Graduate Medical Education

Answer: B

Rationale: Although numerous groups and organizations may support the use of HCAHPS, the Centers for Medicare and Medicaid Services requires administration of HCAHPS.

Leading Change

10. A physician is interested in leading a hospital goal to reduce the incidence of in-hospital catheter associated urinary tract infections (CAUTI). Although the change process will require all the steps below, which is the best first step?

    a. Ask for volunteers to join a committee and schedule a meeting
    b. Research the background of best practices, develop suggestions for interventions, and propose the ideas to key stakeholders.
    c. Ask for advice of key leaders regarding the best way to set up and gain support for the initiative
    d. Gather data on the current incidence at other hospitals and national benchmarks

Answer: C

Change does require having the right people on the team (answer A), but competing goals, differing, priorities, lack of alignment, and excessive work tasks can derail important projects. Therefore checking with a number of key leaders to let them know of the project, ask their advice, assess buy-in for the work, and determine motivation for change is the essential first step. If the physician leader identifies the members alone there is risk of leaving out key people and suffering political setbacks. Similarly, there may be content experts at the institution or people who wish to be, so the leader should not do independent background research to either aid the team or establish their content expertise until it is necessary to do so (answer B). Similarly, gathering hospital data will be essential, but is not always the required first step of the leader, this work can be done by those supporting the group's work. (Answer D). While all these steps will be taken, the most important first step is getting the support of formal and informal thought leaders, get assistance in identifying the best process within your institution, gain assistance in identifying the key individuals who should be on the team, and otherwise considering how the initiative should be best set up prior to launching it.

11. A hospital wishes to implement bar coding in an effort to reduce errors during medication administration. Which of the following would be most helpful during initial design of the new process?
    a. Observing nurses during work activities
    b. Surveying physicians about contributing factors
    c. Holding focus groups with patients and caregivers
    d. Interviewing the Chief Nursing Officer

Answer: A

Rationale: A stakeholder analysis is critical in implementing any new process. While physicians, patients, and the Chief Nursing Officer are all important stakeholders, observation of nursing workflow would be most revealing in designing the new process.

12. A hospital is struggling to improve patient satisfaction/HCAPS scores, especially the metric on the patients' 'likelihood to recommend' the hospital'. The hospital decides to send all the nurses and doctors to Service Matters training to improve communication with patients. You recognize the need to improve patient satisfaction, but are very stressed, are aggravated at the suggestion, and begin to think that you must find another job. You talk to other doctors and find that they are feeling the same way. You feel disrespected, disengaged, and burnt out. You are afraid that if you say anything you will be fired but at this point your curriculum vitae is updated so you may be willing to take that chance. The best approach is to

    a. Say nothing, go through Service Matters training, and consider your career moves
    b. Tell your direct supervisor of your concerns
    c. Suggest to your supervisor that alternative solutions might be more successful
    d. Politely and gently talk to the CEO and tell her that the doctors are very unhappy and the proposed training won't work

Answer: C. Opening yourself and your supervisor to a discussion about different ways of thinking and acting might be a useful first step. Though this will not solve anything in itself, it could open new possibilities. Saying nothing (answer A) is obviously not a route to success. Telling your supervisor of your concerns (B) is reasonable and not incorrect but does not lead to a new solution, it simply delegates to your supervisor the responsibility to find a new solution. If the supervisor had skills to develop and implement another solution you might not be experiencing these problems. Talking to the CEO (Answer D) can be perceived as a run around the chain of command by a complaining doctor. The CEO may listen politely but is too far removed to engineer a change; that is why she/he has a chain of command. The only hope is for you and your team to craft a better solution.

Health Information Technology

13. Examples of computer based decision support include all except:

    a. Interruptive alerts warning of drug interactions.
    b. On screen reminders to vaccinate patients.
    c. Order sets targeting specific conditions.
    d. Requiring linking of medication orders, e.g., antibiotics, to medication indications, such as pneumonia.

Answer: D

Rationale: This would constitute decision support if, before or after the linkage, guidance was offered.

14. A hospital is implementing clinical decision support to detect potential drug-drug interactions during medication ordering. Which of the following will be most important to ensure effective implementation?
    a. Turn on decision support for residents and students, but not for hospitalists or specialists
    b. Include all medication statuses (i.e., historic, discontinued, active) in the search to ensure all potential interactions are detected
    c. Allow overrides, asking providers to document a reason for the override
    d. Provide computer lab training with each successive change in clinical decision support rules/logic

Answer: C

Rationale: Features of effective implementation of clinical decision support include:
- Speed
- Workflow fit
- Usability/simplicity
- Minimal requests for additional information

Clinical decision support is useful for providers entering orders. Computational logic should be designed to be meaningful and not slow down the system. Hard stops (i.e., not allowing an override) may frustrate clinicians. Most clinical decision support interventions should be designed to be self-explanatory (i.e., requiring no specific training for users).

Instructions: Please read each of the following scenarios and then answer the questions that follow. We recognize that there may be many areas to improve. Be brief and as specific as possible. We request that you attempt each question, even if you are unsure.

Scenario #1

You are a general internist working for Happy Valley Medical Group. You receive a report from the Center for Medicare and Medicaid Services (CMS) showing that your group's performance in diabetes is poor. Specifically, the report includes the information below on the percentage of diabetic patients with poor glycemic control (defined as HbA1c>9%). These results will be posted on the Physician Compare website and eventually affect your payment for Medicare patients.

Measure	Last year's National Average	Last year's national top quartile	Last year's Happy Valley performance
Hemoglobin A1c Poor Control in Diabetes Mellitus (lower is better)*	22%	13%	35%

*percentage of diabetic patients with HbA1c>9%.

Questions for Scenario #1

Please answer each of the following questions as if you were leading a DMAIC project team to investigate and improve the problem presented above.

1) Write a problem statement for this scenario. (less than 50 words)

3 points: What is wrong with our current performance (include data if possible)? Why do we care?" When/where does the problem occur? Problem statement should not include solutions.

Exemplary response: Glycemic control has been shown to reduce the risk for complications of diabetes. (e.g., retinopathy, nephropathy, neuropathy). Happy Valley Medical Group's percentage of poorly controlled diabetics is significantly worse than the national average. Specifically, 35% of our patients have poorly controlled diabetes (HbA1c>9%) compared to the national average of 22%.

2) Write a goal statement. (less than 50 words)

3 points: "What specifically do we want to achieve as measured by X, and when do we want to achieve it?" 1 point each for specific, measurable, and time-bound. Goals should ideally be specific, measurable, achievable, relevant, and time bound (SMART).

Exemplary response: To reduce the percentage of poorly controlled diabetics from 35% to below the national average of 22% within one year.

3) List 3 measures you would collect to assess potential drivers of the high percentage of poorly controlled diabetics. (less than 50 words)

3 points: Respondent should list 3 appropriate options for additional measures/data to assess drivers of performance. This data should be feasibly collected and relevant.

Exemplary responses:
- *a. Percent poorly controlled having seen endocrinologist in past year vs. well controlled*
- *b. Percent poorly controlled having seen diabetic educator in past year vs. well controlled*
- *c. Percent poorly controlled having a glucometer vs. well controlled.*
- *d. Percent poorly controlled having seen dietician in past year vs. well controlled.*
- *e. Frequency of visits poorly controlled vs. well controlled.*
- *f. Percent poorly controlled by individual physician.*
- *g. Percent poorly controlled on insulin vs. well controlled.*

Scenario #2
You are a resident in the Emergency Department on a busy Saturday morning in July. You just finished working up your third patient of the day, a 63 year-old woman with unstable angina. You asked that she be admitted to a telemetry bed to rule-out a myocardial infarction. As you are finishing your note, the charge nurse tells you it will be another 4-5 hours before a telemetry bed will be available and asks you if she really needs one. You indicate that she must be monitored on telemetry and are frustrated that she will have to wait so long in the Emergency Department (ED).

As you are heading out to the waiting room to grab a cup of coffee, you notice that 4 other patients are also waiting for telemetry beds. You track down your program director who agrees this is a big problem. He tells you that the mean time from telemetry bed request to placement is 180 minutes.

Questions for Scenario #2
Please answer each of the following questions as if you were developing a program to investigate and improve the problem presented above.

1) Who are the customers in this process and how might you identify the *voice of the customer*? (less than 50 words)

3 points: 1 point for listing all appropriate customers, 1 point for listing at least 2 total methods to identify voice of customer, 1 point for matching appropriate methods with each customer.

Exemplary response:
Customers are the following:
   a. *Patients and families/caregivers – telemetry issue causes delays in care (needed testing and treatment). Boarding is unpleasant.*
   b. *ED clinicians: physicians, nurses – telemetry delays cause frustration and boarding.*
   c. *IM residents and hospitalists – telemetry issue may delay admissions getting them out late Possible ways to get voice of the customer include:*
   a) *Focus groups including patient and family advisory council*
   b) *Surveys, either created for this purpose or use of HCAHPS (scores may be lower for patients who boarded)*
   c) *Interviewing patients that are waiting or experience long waits for telemetry monitoring*

2) List 3 measures you would collect to assess potential drivers of long wait times for telemetry beds. (less than 50 words)

3 points: Respondent should list 3 appropriate options for additional measures/data to assess drivers of performance. This data should be feasibly collected and relevant.

Exemplary response: possible measures for drives may include the following:
   a. *Percent of telemetry admissions with valid indication for telemetry (according to guidelines)*
   b. *Percent of post admission telemetry patient-days with valid indication for telemetry (according to guidelines)*
   c. *Percent of patients admitted on telemetry who have it through to discharge*
   d. *Telemetry box turnaround time*

3) Identify one change that might be worth testing to improve performance. (less than 50 words)

3 points: Change should be specific, strong (e.g., clinical decision support/automation stronger than brief reminder), and feasible.

Exemplary response: Options include:
   a. *Clinical decision support requesting valid indication when telemetry is ordered*
   b. *Reminder to physician to discontinue telemetry or require reorder with valid indication*
   c. *Automatic stop order unless valid indication is provided*
   d. *Audit and feedback to units/physicians with data on utilization, % utilization without indication*
   e. *Reports to unit coleaders indicating which patients on unit have telemetry (for use in interdisciplinary rounds)*

Scenario #3

You are a new hospitalist in a community hospital. The hospital uses two different hospitalist groups and some traditional internists still follow their own patients in the hospital. The hospital uses an electronic health record with computerized provider order entry. Hospital leadership knows that you have advanced quality improvement (QI) training and you are asked to lead a QI project. Recently, a number of medical patients have developed venous thromboembolism (VTE) during their hospitalizations. A medical record review has found that only 55% of patients at risk for VTE received chemoprophylaxis.

Questions for Scenario #3

Please answer each of the following questions as if you were developing a program to investigate and improve the problem presented above.

1) List 3 measure you would collect to assess potential drivers of poor performance. (less than 50 words)

3 points: Respondent should list 3 appropriate options for additional measures/data to assess drivers of performance. This data should be feasibly collected and relevant.

Exemplary responses: One could measure:
  a. *Chemoprophylaxis rates by each hospital medicine group (HMG) and by traditional internists*
  b. *Documented risk assessment by each HMG and traditional internists.*
  c. *Use of certain order sets*
  d. *Mechanical prophylaxis rates when chemoprophylaxis contraindicated by each HMG and by traditional internists*

2) Identify one change that might be worth testing to improve performance. (less than 50 words)

3 points: Change should be specific, strong (e.g., clinical decision support/automation stronger than brief reminder), and feasible.

Exemplary responses: Options include:
  a. *Admission order set with prompt for chemo and/or mechanical prophylaxis*
  b. *Clinical decision support in admission order set to help assess risk factors (e.g., age, estimated LOS, activity order, or validated assessment tool)*
  c. *Reminder to start chemoprophylaxis if:*
      i. *No chemoprophylaxis ordered and*
      ii. *No other anticoagulation ordered and*
      iii. *INR<2 and*
      iv. *Platelets >50K*
  d. *Unit report that identifies patients not on chemoprophylaxis for unit coleaders to use in interdisciplinary rounds*
      i. *No chemoprophylaxis ordered and*
      ii. *No other anticoagulation ordered and*
      iii. *INR<2 and*
      iv. *Platelets >50K*
  e. *Audit and feedback on chemoprophylaxis rates to each HMG group and traditional internists.*