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Minimum Steps for Working with Performance Measures

The table on the following page shows the **minimum steps** for working with performance measures in various ways. Groups will vary in the number of steps they wish to take, depending on whether their efforts are to be generally applied (such as creating a national quality indicator) or to be applied locally such as a performance measure being used in a local health care setting. We **recommend** going **beyond the minimum number of steps** described and doing all steps that fit your circumstances.

Minimum Steps for Working with Performance Measures

How will you be working with performance measures?
Pick your starting point from these choices to see minimum steps:

Design a QI project	Use a measure	Develop a measure	Evaluate a measure	Minimum Steps – See Appendices for More Details, Resources and Tips	QI Project Design Checklist Steps
X				1. Decide on project or topic area	I – IV
X	X	X	X	2. Evaluate the available evidence See also ➔ **Delfini Evidence Tool Set, QI Project Tool Set** and/or other evidence assessment and synthesis tools	II
X				3. Decide upon content for your improvement and determine your recommendations or your service or process	II
X		X		Develop an appropriate measure or find one that fits your improvement	IV
X	X	X	X	4. Evaluate your performance measure	IV
X				5. Assess the impacts of practice change Helpful ➔ ***Delfini* QI Project Change Assessment Tool**	
X				6. Create information, decision and action aids Helpful ➔ ***Delfini* Patient Information & Decision Aids Tool**	
X				7. Implement improvement project Helpful ➔ ***Delfini* QI Project Implementation Tool**	
X	X			Apply the measurement	V – VIII
X	X			Report on measurement outcomes	VII
X				8. Cycle back to continuously improve care	VIII

Quality Improvement Project Design Checklist

This checklist can help design a quality improvement initiative. Steps I. through IV. can help you decide upon topics for quality improvement initiatives and can serve as documentation for your decision. Steps V, through VIII. can aid you with carrying out your measurement of improvement. See the Appendices for further details, resources and tips.

Quality Improvement Project Design Checklist

Date: Topic area: IOM Domain Area: Prepared by:

Area considered for improvement – Intervention: Care Process: Service:

Team:

Background for inquiry:

Step I. Importance of Area for Clinical Improvement

Do you have a gap between current & optimal care?	Your Assessment including size of gap (e.g., none or minimal, large, uncertain)
1. Inappropriate variation	
2. Health status (mortality, morbidity, symptoms, functioning, QOL)	
3. Patient satisfaction	
4. Clinician satisfaction	
5. Value Issue: Cost and/or utilization; liability, etc?	
6. Clinical uncertainty	
7. Other	
8. Will closing this gap will result in substantial benefits in one or more of the areas listed above? Yes No	
9. How will this be an improvement over current care large enough to justify the effort and expense?	

Conclusion: Does your topic meet the criteria for "Importance of Area for Clinical Improvement?"

Yes No

Remarks:

Step II. Useful and Usable Evidence for Quality Improvement Efforts

Is there valid and useful scientific evidence to help close this gap? If not, what will be the quality improvement?

IMPORTANT: YOU WILL NEED TO USE ADDITIONAL TOOLS TO ACCOMPLISH THIS STEP —

1. Use a formal process to determine if there is useful and usable scientific evidence. You want to find evidence that is –

Quality Improvement Project Design Checklist
Date: Topic area: IOM Domain Area: Prepared by: **Area considered for improvement – Intervention: Care Process: Service:**
▪ Valid ▪ Addresses effectiveness ▪ Relevant to your population, is applicable and considers the patient perspective ▪ Acceptable to physicians and patients, which includes whether physicians will apply appropriately and whether patients will adhere to recommendations, and ▪ Actionable
2. Assessment should take into account the following – ▪ Evidence of harms ◆ Evidence of benefit ◆ Evidence of no benefit ◆ No evidence of benefit ▪ Evidence of underuse in your organization ◆ Evidence of overuse in your organization ▪ Inappropriate or suboptimal use of resources in your organization
IMPORTANT: It is strongly recommended that you use tools to help you ensure that you have valid, useful and usable information such as tools for critical appraisal, guideline and QI project appraisal, evidence synthesis, etc. Your assessment: Search Strategy: References:
IF THERE IS NO VALID, USEFUL SCIENTIFIC EVIDENCE AND THIS IS FOR AN INTERVENTION = STOP. Do not do an "improvement." If this is for efficiency, satisfaction or a process, ideally you want to use valid and useful scientific evidence. If none is available, you will need to substitute assumptions for evidence.
Conclusion: What will be your quality improvement? **Remarks:**

Step III. Organizational Feasibility of Improvement	
Is attempting the improvement feasible in your environment?	
1. Is this change required by regulators?	
2. Is clinical improvement achievable by successfully implementing a quality improvement initiative, and do we accept the potential impacts of practice change?	
3. Is performance improvement measurable?	
4. Does leadership support the change?	
5. Do we have an effective, dedicated champion or "lead?"	
6. Will the culture accept the change?	
7. Are systems in place to support the change?	

Quality Improvement Project Design Checklist	
Date: Topic area: IOM Domain Area: Prepared by: **Area considered for improvement – Intervention: Care Process: Service:**	
8. Other considerations?	
Are resources available to support the initiative?	
9. Financing	
10. Capacity	
11. Skills	
12. Other	
13. Assessment of force field (driving and restraining forces):	
Conclusion: Does your topic meet the criteria for "Organizational Feasibility?" **Yes No** **Remarks:**	
Step IV. Measurability	
Is your measure quantifiable?	
1. Can you translate your measure into quantifiable terms by creating a numerator and denominator?	
Is your measure valid?	
2. Is the denominator valid? A valid denominator is one which has the appropriate inclusions and exclusions.	
3. Is the numerator valid? A valid numerator is a count which helps to answer a performance or a process question. For interventions, the numerator must be directly associated with the evidence-based clinical improvement. Ideally it is evidence-based for services and processes as well.	
4. Is the frequency valid? A valid frequency is one that specifies appropriate time intervals for the performance or the process.	
5. Your clinical improvement or quality indicator should be accurate and dependable.	

Quality Improvement Project Design Checklist	
Date: Topic area: IOM Domain Area: Prepared by: **Area considered for improvement – Intervention: Care Process: Service:**	
Is the measure useful and usable?	
6. Is there potential for patient stratification or risk adjustment?	
7. Is the measure comprehensible?	
8. If applicable, will the measure be useful to an individual or organization to assist with quality improvement activities?	
Is measurement achievable in your local circumstances?	
9. Is measurement achievable in the settings specified?	
10. Are data reasonably available – or can they be made so?	
11. Can data be collected in a reasonable timeframe?	
12. Other	
Conclusion: Does your topic meet the criteria for "Measurability?" **Yes No** **This is an Interim Assessment:** **Or a Formal Assessment:** **Remarks:**	

Project Selection Criteria – Your Findings from Above Assessment	
Steps I. through IV. Represent important considerations for deciding what project to select for quality improvement and if you wish to proceed?	
Step I. Importance	**Assessment:**
Step II. Evidence or Improvement Plan	**Evidence Assessment:** **Improvement Planned (if no evidence):**
Step III. Feasibility	**Assessment:**
Step IV. Measurability	**Assessment:**
Other Information	
Decision Regarding QI Project Selection	
Step V. Data Gathering	

Quality Improvement Project Design Checklist	
Date: Topic area: IOM Domain Area: Prepared by: **Area considered for improvement – Intervention: Care Process: Service:** **How are you going to gather the data to measure the improvement?**	
Data gathering validity refers to the methods used to obtain numerators and denominators for performance measurement. See the Appendix for **Data Gathering Validity Tips**. Document your plan, including such factors as sources for data collection, ICD-9 codes used, potential responses, etc. See also **Performance Measure Documentation** following this section.	
Conclusion: Is data gathering doable and likely to result in valid and useful information? **Yes No** **Remarks:**	
Step VI. Defining Improvement	
What is the meaning of your measurement, i.e., what goal will you set to define "improvement?"	
What are your goals for improvement? (Is there a requirement that is imposed on you?)	
What are you going to use to determine what constitutes "improvement? (e.g., trend, target, statistically significant change)"	
Other	
Step VII. Reporting	
How are you going to report the results of your measurement and to whom?	
Purpose for the report (i.e., required by regulators, accountability, feedback, improvement assessment, etc.)	
Frequency of the report?	
Level of detail for the report (e.g., individual, unit, organization, etc.)	
Elements to be included?	
Caveats or limitations discussed?	
Distribution for the report?	
Intended recipients of the report	
Other	

Quality Improvement Project Design Checklist
Date: Topic area: IOM Domain Area: Prepared by: **Area considered for improvement – Intervention: Care Process: Service:**
Step VIII. Updating
Conclusion: Is reporting appropriate and reasonable? **Yes No** **Remarks:**
What is your process for updating your improvement?
At a minimum, updates should occur when there is a significant change in the evidence and should be generally reviewed at least every two years?
Conclusion: Are you prepared to follow-through with appropriate updating for your improvement? **Yes No** **Remarks:**
For additional information or remarks, as needed:

Performance Measure Documentation

This tool can help you create the necessary documentation for your chosen performance measure.

Date: Topic area: IOM Domain Area: Prepared by:	
Area considered for improvement – Intervention: Care Process: Service:	
Background Information About the Measure	
1. Rationale	
2. Purpose	
3. Clinical setting	
4. Other	
Performance Measure Documentation Elements – See Appendix for Denominator Validity Tips	
5. Clinical recommendation (along with strength of the evidence and sources used)	
6. Description of the denominator – text statement (e.g., all patients with diagnosis of diabetes mellitus and without exclusions). The denominator is determined by applying appropriate inclusion and exclusion criteria.	Denominator (text statement):
7. Description of numerator – text statement (e.g., patients receiving at least one hemoglobin A1c). The numerator – or the decision of what to count – is derived from your evidence-based information for interventions – and ideally for all other services and processes as well. The numerator counts occurrences (such as performance or a care-related process) that you wish to measure.	Numerator (text statement):
8. Description of the frequency of, or time-to-the occurrence (e.g., performance or process) that will equate with quality.	Frequency of interval:
9. Calculation	Numerator: (# of patients meeting numerator criteria) **divided by** Denominator: (# patients in denominator) – (# patients with valid denominator exclusions)
10. Other	

Date: Topic area: IOM Domain Area: Prepared by:	
Area considered for improvement – Intervention: Care Process: Service:	
Data Gathering – See Appendix for Data Gathering Validity Tips	
11. Sampling methodology	
12. Description of data sources	
13. Description of data acquisition methods	
14. Time period or frequency for data collection	
15. Baseline measurement	
16. ICD-9 codes, CPT or other codes if relevant	
17. Other	
Other	
18.	
19.	
For additional information or remarks, as needed:	

APPENDICES

Selecting Good Topics for Quality Improvement Initiatives

The 4 criteria below can help you decide essential elements needed for a clinical practice change.

Criterion	Description
Importance of Area for Clinical Improvement	There a significant gap between current and optimal care (health and health care outcomes, interventions or care-related processes) and an opportunity to close the gap in one or more of the following areas – ▪ Reducing inappropriate variation in processes, interventions or services ▪ Improving health outcomes (morbidity, mortality, safety, symptoms, quality of life, functioning) ▪ Improving patient satisfaction ▪ Improving clinician satisfaction ▪ Reducing uncertainty Improving value through attention to cost and/or utilization (i.e., addressing a gap in use of organizational resources expended as compared to value for patients) or liability
Useful and Usable Evidence for Quality Improvement Efforts	There is sufficient, useful and usable evidence to conclude that improved clinical outcomes and/or value can be achieved through practice changes in interventions, services delivered to patients or in care-related processes). Having valid evidence means that conclusions can be drawn regarding cause and effect relationships between clinical interventions or care processes and health care outcomes. Useful and usable evidence is scientific evidence that is – ▪ Valid ▪ Addresses effectiveness ▪ Relevant to your population, is applicable and considers the patient perspective ▪ Acceptable to physicians and patients including whether physicians will apply appropriately and whether patients will adhere to recommendations ▪ Actionable **IF THERE IS NO VALID, USEFUL SCIENTIFIC EVIDENCE, AND THIS IS FOR AN INTERVENTION = STOP**. Do not do an "improvement." If this is for efficiency, satisfaction or a process, ideally you want to use valid and useful scientific evidence—so you should look for it, but evidence may not be available. If not, assumptions will have to be substituted for evidence.

Organizational Feasibility of Improvement	Clinical improvement is achievable by successfully implementing a quality improvement initiative, which is feasible to do, and the outcomes of which can be successfully measured
	
	▪ Changes in clinical care are achievable, measurable and acceptable
	▪ Implementation of quality improvement is feasible
	▪ Organizational structures and processes are in place for supporting change
	  ○ Leadership supports change, and ideally an internal champion is available
	  ○ Culture will accept change
	  ○ Systems are in place for supporting change
	▪ Resources are available to support initiative (e.g., financing, capacity, skills)
	Forces which could hinder the improvement are understood and minimized, and forces which can promote the change are optimized and/or aligned (e.g., external requirements or pressures, incentives, triangulation issues, etc.)

Measurement is achievable	Measurement is achievable in the settings specified ▪ Selected measures meet criteria for attributes of good performance measures ▪ Data are, or can be made, reasonably available Data can be collected in a reasonable timeframe

Quality Domains from the Institute of Medicine (IOM)

From Crossing the Quality Chasm. Washington DC: National Academy Press – 2001.

The 6 quality domains from the IOM can help you frame a context for and ideas about your initiative.

From Institute of Medicine (IOM)	Delfini Commentary
Safety – avoiding injuries to patients from the care that is intended to help them.	Requires attention to reducing error.
Effectiveness – providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse).	Requires the identification of those interventions which should be put into practice through application of useful and usable medical evidence which is valid, demonstrates effectiveness, is relevant, is acceptable to physicians and patients and is clinically doable. Requires the identification of medical practices for which there is insufficient evidence or evidence of no benefit or harm through analysis of useful and usable medical evidence.
Patient-centeredness – providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.	Requires attention to providing information to patients on issues of import to them such as benefits, harms, risks, costs, uncertainties and alternatives. Successful engagements between clinicians and patients include the provision of information along with warmth, empathy, respect, and frequently facilitating patients' choices attending to individual preferences for decision styles. Communications for patients effectively supply knowledge, facilitate decision-making and/or describe potential actions to be taken. Requires sensitivity to patient care, comfort and emotional needs from the patient's point of view.
Timeliness – reducing waits and sometimes harmful delays for both those who receive and those who give care.	Requires attention to access, coordination of care and patient pathways through the health system along with potential mechanisms for how care is made available to patients (i.e., in person visits, group visits, website care centers, self-management protocols, etc.).
Efficiency – avoiding waste, in particular waste of equipment, supplies, ideas, and energy.	This requires attention to all processes used in health care to reduce complexity and redundancies.
Equity – providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socio-economic status.	This requires a respectful approach to the individual and his/her individual needs. Care is provided by considering an individual's ability to benefit.

Performance Measures – Key Attributes

The 3 attributes below can help you decide essential elements needed for a performance measure.

Attribute & Description
Performance measurement is a quantitative way to measure health care quality. Performance measurement in clinical care is a quantitative way to measure what is done to patients or what care patients receive. ▪ 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.
The measure is quantifiable Quantitative Measurement = ▪ The numerator is a count and is a subset of the denominator, e.g., "Patients receiving at least one hemoglobin A1c in the reporting period." For your numerator, generally you will be measuring occurrences of events such as appointments, blood tests, procedures, referrals, advice given, behaviors, appointments missed, equipment used, hours worked, phone calls, minutes waited, etc. Usually it will be something that you are doing to a patient. ▪ The denominator is a pool from which the count is taken (e.g.,"All patients with a diagnosis of diabetes mellitus.") Frequently your denominator will be a patient population, but it can consist of other types of occurrences such as patient characteristics, conditions or outcomes or patient charts, visits, etc. ▪ Frequency of intervals for occurrence of the performance or process
The measure is valid "The measure is valid" means that it represents what it purports to represent, i.e., it is true and can be relied upon to measure the clinical improvement. Denominator Validity: Requires appropriate inclusions and exclusions to create the right pool for improvement. Numerator Validity: Entails the right choice for what to measure (the "count") which enables either – ▪ The ability to draw cause/effect conclusions – directly or indirectly – based on valid and useful evidence that what we are doing will result in improvement; or, ▪ The ability to infer from reasonable associations that strongly indicate that what we are doing to establish evidence-based improvements has been effectively implemented. ▪ Unless you are going to do a high quality research study, the measurement could be highly susceptible to bias, confounding and chance and mislead you if you attempt to measure health care outcomes. Therefore, frequently it is a good idea to choose a measure to count what you do—not the health outcome, i.e., a process or performance indicator. It is important that the measure be directly associated with the clinical improvement (e.g., prescriptions of ACE Inhibitors following MI). This approach provides confidence that the performance measure is associated with important improvements in health status. (For example, readmission rates to an ICU should not be used as a measure unless we have valid, useful and usable evidence that readmission rates are linked to meaningful health outcomes documented by valid studies – otherwise, it might be the result of some known or unknown confounder). Users of performance measures must bear in mind that bias, confounding and chance are always present in observational data—and performance measurement is based on observational data. This fact becomes of utmost importance when making judgments about the competence of individuals or the quality of a group. Keep in mind factors you have control over and those which you do not to help inform your selection for what to measure. Frequency Validity: Requires that intervals for the performance or process will equate with quality.

Measure Validity: Requires that –

1. The measure is accurate, i.e., the ability of the performance measure to correctly identify events or other occurrences that it is designed to identify.
2. The measure is dependable, i.e., repeated testing gives consistent results.

The measure is useful and usable

- There is potential for patient stratification or risk adjustment, i.e., differing patient characteristics associated with clinical outcomes should be identified and measures should be adjusted if comparisons are made between clinical groups. Example: reporting of lipid values can be adjusted for various risk factors such as obesity and diabetes, etc.
- The measure is comprehensible – users can understand the measure's purpose and usefulness.
- The measure should assist individuals or groups in quality improvement activities.

Denominator Validity Tips

Ensure that you have appropriate sources for your denominator such as a valid population or sample and use valid methods to sample from your denominator – for example –

- Is your choice of the patient population relevant to your goals? Are these reasonable patients to be measured? Do the inclusion/exclusion criteria for the denominator (population) include the appropriate people? Is there assurance people have been diagnosed accurately. Consider: If you are sampling the population, can you ensure that you do not have a misrepresentative or skewed sample (e.g., oversampling of patients with severe illness)?
- Any time you are comparing a performance measure's denominator with your population (such as when you have adopted a performance measure created elsewhere, for example), there is a need to consider population differences. For example, are your patients at higher risk than those in the performance measure's denominator? Good measures provide methods for adjusting your denominator if it differs from the performance measure's denominator.
- If utilizing methods for risk stratification or risk adjustment, is the process appropriate? Example: COPD may affect risk. An organization could define COPD as "having smoked and coughed in the past three months" instead of using the usual definition of COPD. This would result in upcoding which might overstate improved performance on the performance measure. Consider: Demographics, measurability, age, race, gender, bodily characteristics, risk, diagnosis, disease severity, prognosis, co-morbidities, compliance, etc.
- Can you reliably reach or get data about your intended sample?

Example	Denominator Issues	Validity Issue
Cervical cancer screening	Did the denominator exclude women without a cervix?	Relevance and measurability
COPD	Do patients really have the diagnosis?	Diagnostic testing biases
Colon cancer screening	Did the denominator exclude patients where there is documented clinical judgment that a patient should not be screened?	Clinician application
Colon cancer screening	Did the denominator exclude patients who refuse testing, don't show up for appointment, are screened outside the system or treated elsewhere?	Pt perspective (choice) or adherence
Use of ACEIs or ARBs in Heart Failure	Did the denominator exclude patients who have adverse effects from ACEIs or ARBs?	Relevance and pt perspective (harms)

Considerations for Inclusion/Exclusion Criteria – Some Areas to Consider

1. Is the intervention relevant to the patient (e.g., paps in women without a cervix)?
2. For screening measures, did you exclude patients with symptoms and signs of the condition, (e.g., cancer)?
3. Is the patient actually cared for in your setting – enrolled during the measurement time period, possibly cared for by another system, alive, etc?
4. Is the patient pre-terminal or does the patient have significant morbidities making exclusion appropriate?
5. Has the patient declined the intervention or is not adherent?
6. Is the intervention not clinically indicated or otherwise not appropriate (e.g., intolerance or adverse effects, discussing screening tests in patients who are having difficulty dealing with major therapeutic or diagnostic interventions may be inappropriate?)
7. Consider demographic variables such as age, gender, etc. as relevant for inclusion or exclusion.

8. **NOTE**: Consider other non-preference patient issues, such as cost, system barriers, access, patient understanding, etc. You may wish to exclude these from the denominator, or you may wish to not exclude them if you are trying to create improvements in these areas.
9. Other?

Considerations	Inclusions	Exclusions
Relevance		
Appropriateness		
Demographics		
Patient preferences		
Under your care		
Available data		
Other		

Data Gathering Validity Tips

Data gathering validity refers to the methods used to obtain numerators and denominators for performance measurement. Measurement may be through EMR, claims data, other database data, survey or chart review, as examples.

Even with a valid performance measure, invalid results can occur if the performance measure is not appropriately applied. For example, invalid results can occur when denominator exclusions are included or when denominator inclusions are excluded.

- Does the source for data collected seem reasonable? For example, if looking for a diagnosis of left ventricular dysfunction, were both inpatient and outpatient sources utilized.
- Are items of interest sufficiently comprehensive and defined (e.g., diagnosis and treatment), including the possible responses for your variables (e.g. patient refused, clinically inappropriate, contraindicated)? One example would be defining the age and precise laboratory cut-off values for a diabetes performance measure.
- Might bias be introduced through any data collection process, instrument or survey tool or through the means of its administration? Example 1: A nurse asking patients questions about satisfaction following an appointment may create more bias than a mailed survey. Example 2: Analysts including invalid inclusions or exclusions in numerator or denominator.
- Have you avoided potential for double-counting?
- Is the data collection timeframe sufficient to get appropriately meaningful results given the area of interest? Consider: Primary effect, side effects, symptoms, regression, remission, recurrence, survival, etc.
- When adjusting for risk, it is important to realize that risk adjustment models cannot be relied upon to correct for differences (confounders) between individuals, units, organizations, etc.

Goal Setting Tips

Goals are what you are trying to accomplish in a general way, such as improve care for diabetics. Targets are specific rates you may be trying to achieve. For example, Healthy People 2010 lists national goals for the next decade and recommended targets.

Goal: Increase the proportion of adults with diabetes whose condition has been diagnosed.

Target: From 68 to 80 percent.

Your goal will be partly determined by the purpose for doing performance measurement – as a requirement of accreditors, for example, or for internal purposes for improving quality.

Generally, the major goals of performance measurement are to improve outcomes and provide value. Even if groups or individuals do not reach specific performance targets, their increased attention to quality improvement efforts can result in significant clinical improvements. In any case, the results of measurements should be used to increase attention to the structures, methods, processes, roles, skills, tools and systems that can be improved. For internal purposes, you may be satisfied with less rigorous approaches – even getting people to focus on a particular issue by drawing attention to it can sometimes result in improved care or service.

If you want to do something more formal, are you going to establish a trend, a target (e.g., a target set by Healthy People 2010, or 75 percentile of a top performing organization as reported by NCQA, or other percentage or rate set for improvement) or will you look for statistically significant change?

- Trend: Are your results going in the desired direction.
- Statistically significant difference: Have we made meaningful change and gains in improvement?
- Target: Have we reached a specific number or are our results within a range that we have defined as "improvement?"

Careful attention to establishing the right denominator with appropriate inclusions and exclusions can minimize the risk of setting your target unrealistically high.

By addressing certain unpredictable issues in the denominator, you do not have to adjust for them in the target. Examples include (see **Denominator Validity Tips** for more complete information).

- Patients not consenting;
- Non-adherence;
- People getting care outside the system;
- Inappropriate for intervention due to comorbidities;
- People likely to die within next 6 months;

Compare to current performance for rough reality check.

Reporting Tips

- Will conclusions you that you and others reach be justified by the results?
- Is there data integrity (accuracy, consistency, completeness)?
- If composite outcomes are reported, then do the outcomes that are chosen for reporting seem reasonable and not misleading (e.g., combinations of subjective and objective outcomes, combinations of severe outcomes with mild ones or process measures)? Example: Event-free mortality could inappropriately be defined to include an elective procedure.
- Are limitations acknowledged?
- Is the measure useful for comparing one individual, group, unit or organization with another? (Reminder – even though a performance measure may be based on outcomes from valid RCTs, the results of measurements within a unit, organization or system of care are equivalent to the results of an observational study. Therefore there will always be confounding, and definite cause-effect conclusions cannot be made. This can be a major problem when drawing conclusions based on comparisons between individuals, groups, units, organizations, etc. Adjusting for confounders will never eliminate selection bias the way well-done RCTs do. Remember — patients are never randomized to clinicians' practices or specific organizations, unless part of a formal research study, for example.)
- Especially susceptible to confounding can be health outcomes, satisfaction and behaviors.
- Because of bias, confounding and chance, extreme caution should be used in drawing cause-effect conclusions regarding clinicians' effect on health outcomes.
- Be mindful of what is under whose control – for example, many factors go into what might lower a patient's HgA1C, but a physician can control whether or not he or she ordered a lab test.

Performance Measures Searching Tips

You may wish to find performance measures which have already been created to serve as "seed" projects for your work. Keep in mind that many are not evidence-based or impose greater requirements that may be excessive or insufficient. Therefore, you need to rely on trusted EBM sources or perform your own evidence review. You may also wish to evaluate the "reasonableness" of the frequency of the measure, and other elements.

See the **Delfini Searching Tool** for more sources and pointers. Here are some sites that may have some measures you will wish to work with as a starting point.

Cautions:

- You should be aware that much of the information contained in any of these sites may be of varying quality.
- Unless you are fully convinced the information is developed through a rigorous and systematic process, it is **strongly advised** that you use a tool – such as those found in the **Delfini** Evidence Tool Set or the *Delfini* QI Project Tool Set – to evaluate the validity and potential usefulness of the information you may find on these sites. See our Tools.
- For secondary studies and secondary sources, you may need to update the information using PubMed, for more current research following the end of the search used in the source.
- Even sources you might assume "trustable," may have generally great methods, but politics may affect the content in important ways that are not evidence-based.
- Some of these sites may be available through a subscription service only.
- Ultimately you will need to apply your own judgment in determining whether a source can be useful to you or not.

1. **National Quality Measures Clearing House**
   http://www.qualitymeasures.ahrq.gov/
2. **National Quality Forum**
   http://www.qualityforum.org/home.htm
3. **National Committee for Quality Assurance (NCQA)**
4. **HEDIS Effectiveness of Care Measures (2 URLS)**
   a. http://www.ncqa.org/
5. **Joint Commission on Accreditation of Healthcare Organizations (JCAHO)**
   http://www.jointcommission.org/
6. **Physician Consortium for Performance Improvement**
   http://www.ama-assn.org/ama/pub/category/2946.html
7. **American Academy of Family Physicians (AAFP) Performance Measurement**
   http://www.aafp.org/x18919.xml
8. **Ambulatory Quality Alliance**

   Founded by AAFP, ACP, AHIP and AHRQ. Endorsed 26 performance measures as starter set. Goal is to focus on agreed-to measures accepted by health plans to eliminate tracking different measures for different initiatives.

   http://www.aqaalliance.org/

   Quality Measures

   http://www.aqaalliance.org/performancewg.htm

Individual practice internal improvement demo flow sheets:

http://www.ama-assn.org/ama/pub/category/4837.html

Registry

http://www.aafp.org/fpm/20060400/diabetesregistry.xls

9. **National Guideline Clearinghouse**
   www.guidelines.gov
10. **PubMed**
    www.pubmed.gov

Glossary

Accuracy – The ability to correctly identify that which one intends to identify.
Application Validity – Application validity refers to the methods used to obtain numerators, denominators or frequencies during the data gathering phase of performance measurement. Even with a valid performance measure, invalid results can occur if the performance measure is not appropriately applied. For example, invalid results can occur when numerator or denominator exclusions are included or when numerator or denominator inclusions are excluded.
Benchmark – A standard or point of reference used in measuring and/or judging quality or value.
Denominator – For performance measurement, the population "at risk" for experiencing the event or occurrence described in the numerator. This is the "pool."
Dependability – The ability to give consistent results.
Incidence – The proportion of new cases of the target disorder in the population at risk during a specified time interval.
Numerator – For performance measurement, the event or occurrence being tracked (a subset of the denominator). This is the "count."
Outcome measure – An assessment of the results of a process as compared to its intended purpose.
Performance measure – A quantitative assessment of a health or health care outcome, intervention, service delivered to a patient or a care-related process, usually used in quality improvement work. It consists of a denominator (e.g., population of interest), a numerator (i.e., a count of events of interest occurring within the denominator) and a frequency (i.e., the specified interval for occurrence). May target various levels or units such as a system, specialty group or individual. Usually expressed as a rate, ratio or percentage. Sometimes used interchangeably with "quality indicator." Some key terms used in performance measurement = accuracy, application validity, benchmark, denominator, dependability, numerator, outcome measure, performance measure, precision, quality indicator, rate, ratio, risk adjustment, risk stratification
Precision – The ability to provide sufficient detail, such as small incremental units, to be useful.
Quality indicator – Oftentimes used interchangeably with "performance measure." Quality indicators are specific and measurable elements of health care that can be used to assess the quality of care.
Rate – Derived by dividing a numerator by a denominator. The numerator is a subset of the denominator. Example: The percentage of diabetic eye exams for Type I diabetics was 80% for our clinic.
Ratio – A numerator and denominator (the numerator is not required to be a subset of the denominator). Example – The ratio of women to men in these studies was 1 to 5 (which can also be expressed as 1:5). Or, the rate and ratio would for diabetic eye exams in our clinic would be 80/100.
Risk adjustment – The process of adjusting performance rates or other outcomes of care to level the playing field due to differences in health status between populations.
Risk stratification – The process of or result of separating a sample into subsamples based on health status or risk factors such as age, comorbidities, etc.

1-Page PM Checklist

Steps for Quality Improvement Project Design		
Steps I. through IV. Help for Selecting Good Projects		
	Step I. Do you have a gap between current & optimal care? Apply considerations for determining importance of area for clinical improvement:	
	Step II. What will close the gap and improve quality? Search for valid and useful evidence for quality improvement effort. If none available and this is for an intervention, STOP. What will be your quality improvement?	
	Step III. Is attempting the improvement feasible in your environment? ▪ Are you going to be able to successfully make clinical practice change happen? ▪ Are resources available to support the initiative?	
	Step IV. Can you measure it? Is your measure quantifiable? Is your measure valid, accurate and dependable? (See table below.) Is the measure useful and usable? ▪ Comprehensible ▪ Assists with QI projects Is measurement achievable in your local circumstances?	
Table: Measure Name/Descriptor/Validity Consideration		**Example**
Numerator = what you are counting = validity ideally based on valid, useful evidence		An Rx for an ACEI or ARB
Denominator = the pool for the count = validity based on inclusions and exclusions		In unexcluded patients with CHF admitted to a hospital
Frequency = time interval for the occurrence (e.g., performance or process) = validity ideally based on valid, useful evidence		By the time of hospital discharge
Steps V. through VIII. Help for Applying Performance Measures		
	Step V. How are you going to gather the data to measure the improvement?	
	Step VI. What is the meaning of your measurement, i.e., what goal will you set to define "improvement?"	
	Step VII. How are you going to report it and to whom?	
	Step VIII. What is your process for updating your improvement?	