Puget Sound Health Alliance

Heart Disease Clinical Improvement Team
Final Report - March 2006

I. Background:

In December 2003, King County Executive Ron Sims convened a broad-based leadership group, *The King County Health Advisory Task Force*, to develop an integrated strategy to address the systemic problems facing the health care system in the Puget Sound region. In particular, Executive Sims requested that the Task Force focus on three inter-related issues: the increase in health care costs for employees and employer purchasers, quality of care, and the importance of improving the health of the community.[1]

The Task Force described the current system of health care as a "series of disconnected strategies all working concurrently but without a system steward, or neutral leader, to coordinate them and ensure that they are achieving the optimal mix of cost, quality, and health outcomes."[1] As part of their recommendation to develop an integrated strategy, the Task Force advised creating a regional partnership to provide the necessary leadership to forge changes in the existing system.

The Puget Sound Health Alliance (the Alliance) was created to fill this role, with the bold vision to develop a state-of-the-art health care system that provides better care at a more affordable cost, resulting in healthier people in the Puget Sound region. Our mission is to build a strong alliance among patients, doctors and other health care providers, hospitals, employers and health plans to promote health and improve quality and affordability by reducing overuse, under-use and misuse of health services.

The strategic approach of the Alliance addresses several key elements to improve health, quality, and cost outcomes, including: chronic disease management, scientific evidence to guide providers and patients in their medical decision-making, decreased practice variation, and performance measurement and public reporting to support practice improvement and allow patients to seek appropriate care.

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[1] King County Health Advisory Task Force Final Report, June 2004 [Accessed online March 6, 2006 at: ftp://extranet.metrokc.gov/exec/hatf/063004report.doc]

At the June 2005 Alliance Board meeting there was consensus among Board members that the Alliance would initially focus on four conditions: heart disease, diabetes, back pain and depression. Later, pharmacy was added as a fifth area of focus. Clinical improvement teams (CITs) for each clinical priority were formed. These CITs report to the Quality Improvement Committee and develop recommendations to the Board on standardized guidelines, performance metrics and measurement approaches, and change strategies for quality improvement in each clinical focus area.

II. Defining the Problem: Cardiovascular Disease

Cardiovascular disease, or disease of the heart and blood vessels, is the leading cause of death in the United States. Together, heart disease and stroke were the cause of 37% of all deaths in the country in 2003, and contributed to 58% of all deaths. [2] More than 71 million Americans have some form of cardiovascular disease. Of these, approximately 65 million have hypertension, 13 million have coronary artery disease, 5.5 million have had a stroke, and 5 million suffer from heart failure.[2] Coronary artery disease alone accounts for one in five deaths.[3]

In Washington State in 2004, cancer edged out heart disease as the leading cause of death for the first time. However, in combination, heart disease and stroke remain the greatest cause of statewide mortality. In 2004, heart disease caused 177.1 deaths per 100,000 people and stroke caused 54.3 deaths per 100,000, a combined total of 221.4 per 100,000, or 31% of all deaths in the state. Cancer caused 184.9 deaths per 100,000, or 24.6% of all deaths.[4] Table 1 shows statistics leading causes of death for King County, Washington State and the U.S. in 2003.

Table 1: Age-adjusted death rates of leading causes of death in 2003 [5]

Cause of Death	King County	WA State	United States
	Age-adjusted death rate per 100,000		
Cardiovascular disease	**220.8**	**252.0**	**285.**7
Heart Disease	163.7	190.5	232.1
Stroke	57.1	61.5	53.6
Cancer	**172.1**	**190.1**	**189.3**

[2] American Heart Association Statistics [accessed online February 10, 2006 at: http://www.americanheart.org/presenter.jhtml?identifier=3000996]
[2] Ibid
[3] Physicians Consortium for Performance Improvement, Performance Measures: Stable Coronary Artery Disease, 2005
[4] Washington State Department of Health, Center for Health Statistics, 2004 data [accessed online February 10, 2006, at: http://www.doh.wa.gov/ehsphl/chs/chs-data/death/dea_VD.htm]

Regional statistics are similar to those from the state as a whole. Statistics from King County show that although mortality from all causes is somewhat lower in the county than the state, the relative rank listing of leading causes of death is the same. In 2003, the combined death rate from heart disease and stroke in King County was 220.8 per 100,000 (heart disease 163.7 per 100,000; stroke 57.1 per 100,000). For comparison, cancer accounted for 172.1 deaths per 100,000 in King County in 2003.[5]

In King County, heart disease is the single greatest cause of death in those over 65 (2,251 per 100,000 over 5 years), but also accounts for a significant number of deaths among working age adults. It is the second leading cause of death in those ages 45-64 (382 per 100,000 over 5 years), and the fourth leading cause of death in 25-44 year olds (69 per 100,000 over 5 years). Stroke is the third leading cause of death in those over 65 (838 per 100,000 over 5 years), fourth in 44-64 year olds (86 per 100,000 over 5 years), and falls to seventh in 25-44 year olds (19 per 100,000 over 5 years).[6]

The economic and social impact of cardiovascular disease in this country cannot be overemphasized. The estimated direct and indirect costs associated with cardiovascular disease in the United States in 2005 were $393.5 billion, with heart disease accounting for $254 billion, and coronary artery disease alone $131 billion.[7] Heart disease accounts for 19% of disability allowances by Social Security, and is the leading cause of premature, permanent disability.[8]

In King County, heart disease has a major impact on premature death. It is the third leading cause of years of potential life lost before age 65, behind cancer and unintentional injury. It is the second leading cause of all non-childbirth hospitalizations in the county, second to unintentional injury.[9]

Despite the high prevalence and costs of cardiovascular disease in the region and in the nation, recent data from the National Committee on Quality Assurance (NCQA) [10] suggest that many people are not being managed optimally for this disease, and that evidence-based clinical guidelines are not always followed in the treatment of cardiovascular disease. For example:

- Among commercial health plans in 2004, 96.2% of patients were treated with a beta-blocker following a heart attack as recommended, but only 67.4% were still taking the beta-blocker six months later.

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[5] Health of King County 2006. [accessed online February 25, 2006 at:http://www.metrokc.gov/health/hokc/]
[6] Health of King County 2006. [accessed online February 25, 2006 at:http://www.metrokc.gov/health/hokc/]
[7] National Committee on Quality Assurance, The State of Health Care Quality 2005, accessed March 6, 2006 online at: http://www.ncqa.org/Communications/News/SOHC_2005.htm
[8] Ibid
[9] Health of King County 2006. [accessed online February 25, 2006 at:http://www.metrokc.gov/health/hokc/]
[10] National Committee on Quality Assurance, The State of Health Care Quality 2005, accessed March 6, 2006 online at: http://www.ncqa.org/Communications/News/SOHC_2005.htm

- Among Medicare patients, 94% were prescribed a beta-blocker after a heart attack; 61.3% were still taking the beta-blocker at six months .
- For lipid management, among commercial plans, 81.8% of patients were screened for cholesterol after a heart attack, 68% achieved an LDL below 130, but only 50.9% had an LDL below the recommended 100 mg/dl. .
- Medicare patients fared only slightly better, with 82.1% of heart attack patients screened for cholesterol, 69.8% with an LDL <130, and 54.3% with an LDL <100.

The NCQA estimates that annually there are 12.5 million avoidable sick days and $2 billion in lost productivity due to suboptimal care for persons with heart disease.[11]

Given these sobering statistics, the Alliance and the Heart Disease Clinical Improvement Team undertook to define strategies to improve the quality of care and optimize outcomes for people with cardiovascular disease in the Puget Sound region.

III. The Heart Disease Clinical Improvement Team (CIT)

The Heart Disease CIT was convened in November, 2005. The team members are local leaders and innovators with expertise in heart disease and quality improvement, and represent the perspectives of providers, consumers, purchasers, and public health and policy experts. A list of the Heart Disease CIT members is included as Appendix 4.

The Heart Disease CIT conducted four monthly meetings from November, 2005 through February, 2006. The focus of the meetings progressed sequentially from (i) defining the target population, setting and disease scope, to (ii) selecting evidence-based guidelines, (iii) selecting and reaching consensus on clinical performance measures, and (iv) developing strategies to change the behaviors of consumers, providers, employers and health plans. These change strategies are designed to improve adherence to evidence-based guidelines and to optimize performance on measures in the care of patients with heart disease.

The CIT was assisted between meetings by Alliance staff and consultants who provided research support and collated CIT member input. Alliance staff and consultants who assisted with this work are listed in Appendix 5.

[11] National Committee on Quality Assurance, The State of Health Care Quality 2005, accessed March 6, 2006 online at: http://www.ncqa.org/Communications/News/SOHC_2005.htm

IV. The Heart Disease CIT Process

A. Goals of the Heart Disease CIT

When the Heart Disease CIT was convened, it was assigned the task of completing the following goals:

1. Define the CIT's scope of the work and prioritize areas of focus
2. Identify nationally-recognized, evidence-based clinical guidelines for the management of patients with heart disease
3. Develop clinical performance measures for patients with heart disease based on recommendations from the selected guidelines
4. Develop or adopt strategies to change the behavior of consumers and providers to achieve optimal performance on the clinical performance measures and enhance the quality of care provided to persons with heart disease.

B. Defining the Target Population, Setting and Disease Scope

Target Population: The Puget Sound Health Alliance was created primarily to focus on ways of improving care for employees and reducing or controlling health care costs for employer/purchasers in the Puget Sound Region. Therefore, **employment-aged adults ≥ 18 years old were selected as the target population.** Although employee dependents include children, the lower age limit of 18 was selected because cardiovascular disease in children is rare, and pediatric cardiac conditions were determined to be outside the scope of the Heart Disease CIT's initial efforts. No upper age limit was selected for the target population because it is recognized that the prevalence of cardiovascular disease increases with age, and that age does not substantially affect most treatment recommendations.

The Heart Disease CIT also chose to limit their work to the population of patients with known cardiovascular disease or heart failure. Although there was much discussion and interest in the CIT regarding the primary prevention of cardiovascular disease in the general population, it was decided to make a recommendation to the Alliance Board to convene a separate Prevention or Health Promotion CIT or working group, whose purpose would be to select guidelines and measures around healthy living and therapeutic lifestyle choices. The one exception to this limitation was the recommendation to promote a cardiovascular risk assessment tool for the general population.

Setting: The Heart Disease CIT's scope included **both the inpatient hospital setting and the ambulatory care setting** for measurement development. It also placed **special emphasis on the hospital-ambulatory interface at the time of discharge.** For the purpose of developing and recommending change

strategies, the inpatient setting was not focused upon, except at the point of discharge. In the interest of avoiding redundancy of efforts, it was recognized that hospitals in the region have ongoing quality improvement initiatives, and most are participating in the Centers for Medicaid and Medicare Services (CMS)/Joint Commission on Accreditation of Healthcare Organizations (JCAHO) Hospital Compare Program which addresses, among other things, in-hospital management of the acute myocardial infarction and heart failure.

Clinical Areas of Focus: The Heart Disease CIT chose to focus their efforts on **cardiovascular disease and heart failure.** Within cardiovascular disease, the emphasis was on coronary artery disease. Although cerebral vascular disease and peripheral vascular disease are encompassed within the category of cardiovascular disease, these conditions were not specifically addressed in detail, except where preventive efforts overlapped with those of coronary artery disease. **The long-term management of patients with known cardiovascular disease, the acute treatment of the patients with myocardial infarction or unstable angina, and the inpatient and outpatient management of patients with chronic heart failure were targeted as the main areas of focus**.

Specifically excluded from consideration by the Heart Disease CIT at this time were congenital heart disease, valvular heart disease and arrhythmias (including atrial fibrillation and anticoagulation). These subjects may be addressed by future work of this or other CITs, if deemed appropriate targets for improved performance.

Combining both setting and areas of clinical focus, the final recommend-dations for the scope of work of the Heart Disease CIT are summarized in Tables 2a and 2b.

Table 2a: Recommended focus areas for the Heart Disease CIT for measurement and change strategy development

	Areas of Clinical Focus Recommended by the Heart Disease CIT
1.	Cardiovascular disease risk assessment of the general population
2.	Ambulatory management of patients with cardiovascular disease
3.	Ambulatory management of patients with chronic heart failure
4.	Management of heart failure patients at the time of discharge from hospital

Table 2b: Other areas of importance identified by the Heart Disease CIT

	Other Areas of Cardiovascular Disease Management Deemed Important by the HD CIT	Measures Developed	Organizations or Groups Recommended for Implementation of Change Strategies
1.	Cardiovascular disease prevention in the general population	No	Alliance Prevention Workgroup
2.	Management of Acute Myocardial Infarction	Yes	Hospitals in the region
3.	Inpatient management of Heart Failure	Yes	Hospitals in the region

C. Selection of Evidence-based Clinical Guidelines for Heart Disease

One of the Alliance's guiding principles is to learn from the current research on best practices and to avoid duplication of efforts of other organizations. The Alliance staff and consultants' conducted preliminary research into evidence-based clinical guidelines and measures that included a broad scan of the existing literature from prominent regional, national and international quality improvement collaboratives, disease-specific organizations, and medical specialty groups. Examples included the National Guidelines Clearing House, the Agency for Healthcare Research and Quality, the Rochester Health Commission, the Institute for Clinical Systems Improvement, the National Committee for Quality Assurance, the American Heart Association, the American College of Cardiology and others. A detailed list of guidelines reviewed is available upon request.

The Alliance's aim was to review existing guidelines for the quality of evidence from which they were derived, and for their wide acceptance into practice by national medical organizations and provider groups. For heart disease, guidelines developed by the American Heart Association, in collaboration with the American College of Cardiology, most clearly met these criteria. In addition, for specific aspects of cardiac care, guide-lines included National Cholesterol Adult Treatment Panel III guidelines for lipid management, Joint National Commission on the Treatment of Hypertension VII guidelines (commonly called "JNC VII") and guidelines from the Advisory Commission on Immunization Practices. Table 3 lists the final set of clinical guidelines that were chosen by the Heart Disease CIT as standards of care for cardiovascular disease.

Table 3: Clinical Guidelines Selected for Cardiovascular Disease

Guideline	Link to Reference
AHA Guidelines for Primary Prevention of Cardiovascular Disease and Stroke: 2002 Update	http://circ.ahajournals.org/cgi/content/full/106/3/388
AHA/ACC Guidelines for Preventing Heart Attack and Death in Patients With Atherosclerotic Cardiovascular Disease: 2001 Update	Link to PDF file: http://www.acc.org/clinical/topic/topic.htm#P
ACC/AHA 2006 Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction	http://www.acc.org/clinical/guidelines/stemi/Guideline1/index.htm
ACC/AHA 2002 Guideline Update for the Management of Patients With Unstable Angina and Non-ST-Segment Elevation Myocardial Infarction	http://www.acc.org/clinical/guidelines/unstable/incorporated/index.htm
ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult	http://content.onlinejacc.org/cgi/reprint/46/6/e1
JNC VII Report on Prevention, Detection, Evaluation and Treatment of High Blood Pressure 2003	http://www.nhlbi.nih.gov/guidelines/hypertension/
NCEP Report on Detection, Evaluation and Treatment of High Blood Cholesterol (ATP III) 2001 and 2004 Update	http://www.nhlbi.nih.gov/guidelines/cholesterol/
ACIP General Recommendations 2005	http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5102a1.htm

D. Terminology and Definitions

To emphasize the distinction between evidence-based guidelines and performance measures, the CIT, staff and consultants operated within the following set of definitions:

- Evidence based guideline: a set of systematically developed statements, based on quality clinical evidence, to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. Guidelines briefly identify, summarize and evaluate the best evidence and most current data about prevention, diagnosis, prognosis, therapy, risk/benefit and cost/effectiveness. They define the most important questions related to clinical practice, identify possible

decision options and their outcomes, and provide evidence-based recommendations.

- Recommendations: an evidence-based recommendation for action, often graded, that is drawn from the guidelines.
- Measure: a tool derived from practice recommendations that defines a specific, measurable element of care that is used to rate the quality of care provided by practitioners.
- Target: an acceptable level of achievement, such as a number, rate, proportion or percentage of patients within a population achieving a particular score on a measure that is deemed an acceptable level of clinical performance.

E. Development of Performance Measures

On December 1, 2005 the Institute of Medicine (IOM) released recommendations from their *Redesigning Health Insurance Performance Measures Project*, which included a standardized starter-set of over 200 clinical performance measures.[12] These measures were intended by IOM to become the national standards for quality measurement in the categories of ambulatory care, acute care, health plans, accountable health organizations, long-term care, end-stage renal disease, and longitudinal measures of outcomes and efficiency. The IOM's measures were based on the bold vision laid out in their earlier report, *Crossing the Quality Chasm,*[13] and reflect the current state-of-the-art in health care delivery system performance measurement. The measures are derived from a number of agencies and organizations with which the IOM collaborated, including the National Committee on Quality Assurance (NCQA- HEDIS measures), the Ambulatory Care Quality Alliance (AQA), the National Quality Forum (NQF) and the Centers for Medicare and Medicaid Services (CMS).

The Alliance strives to build on the work of others, to aim for consistency within the region and nationally, and to ease, rather than increase, the reporting burden on providers. Therefore, on December 2, 2005 the Quality Improvement Committee (QIC) of the Alliance recommended adoption of the IOM's starter-set of performance measures to ensure consistency between measurement efforts in the Puget Sound region and national efforts to improve quality of health care delivery. The Alliance Board approved the QIC's recommendation at their December 20, 2005 meeting.

The Heart Disease CIT adopted the 20 IOM starter-set measures relating to patients with cardiovascular disease. Three additional measures not within the

[12] Institute of Medicine, *Performance Measurement: Accelerating Improvement*, December 1, 2005. Accessed online at: http://www.iom.edu/CMS/3809/19805/31310.aspx. The full report was purchased by the Alliance and is available at the Alliance offices.
[13] Institute of Medicine, *Crossing the Quality Chasm*, 2001. [Accessed online February 26, 2006, at http://www.nap.edu/openbook/0309072808/html/]

IOM starter set *(italicized below)* were added to the list by the Heart Disease CIT for the sake of having comprehensive treatment guidelines.

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set
1. Risk Assessment	*Percentage of patients >40 years who have had a calculated CVD risk assessment [during the prior twelve months]*
2. Tobacco use	Percentage of patients [with heart disease] who were queried about tobacco use one or more times during the [prior twelve months]
3. Advising smokers to quit	Percentage of patients [with heart disease] who received advice to quit smoking [during the prior twelve months]
4. Influenza vaccination	Percentage of patients [with heart disease] ≥ 50 who received an influenza vaccination [during the prior twelve months]
5. Pneumonia vaccination	Percentage of patients [with heart disease] who have ever received a pneumonia vaccination
6. Controlling high blood pressure	The percentage of enrolled adults aged 46-85 who have diagnosed hypertension and whose blood pressure was adequately controlled [during the prior twelve months]. Adequate control is defined as a blood pressure of 140/90 or lower. Both the systolic and diastolic pressure must have been at or under these thresholds for the person's blood pressure to be considered controlled.
7. Lipid Lowering Therapy	Percentage of patients with CAD who were prescribed a lipid-lowering therapy [during the prior twelve months]
8. Beta-Blocker at arrival for AMI	Percentage of patients with acute myocardial infarction (AMI) [during the prior twelve months] who received beta-blocker therapy at time of arrival at hospital
9. Beta-Blocker prescribed at discharge for AMI	Percentage of patients with AMI [during the prior twelve months] without beta blocker contraindications who were prescribed a beta-blocker at hospital discharge
10. Persistence of beta-blocker treatment after a heart attack	Percentage of members 35 and older who were hospitalized and discharged alive [during the prior twelve months] with a diagnosis of a heart attack and who received persistent beta-blocker treatment. Persistent treatment is defined as receiving treatment for 6 months after the discharge
11. Aspirin at arrival for acute myocardial infarction (AMI)	Percentage of patients with AMI [during the prior twelve months] without aspirin contraindications who received aspirin within 24 hours before or after hospital arrival
12. Thrombolytic agent within 30 minutes of arrival for AMI	Percentage of patients with AMI [during the prior twelve months] 18 and older with an ST elevation or LBBB (left bundle brand block) on ECG who received thrombolytic therapy, and whose time from hospital arrival to thrombolysis is 30 minutes or less
13. Percutaneous coronary intervention (PCI) within 120 minutes of arrival for AMI	Percentage of Patients with AMI [during the prior twelve months] 18 and older with an ST elevation or LBBB on ECG who received PCI, and whose time from hospital arrival to PCI is 120 minutes or less

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set
14. Aspirin prescribed at discharge for AMI	Percentage of patients with AMI [during the prior twelve months] without aspirin contraindications who are prescribed aspirin at hospital discharge
15. Cholesterol management after acute cardiovascular event	Percentage of patients 18-75 yrs of age who had evidence of an acute cardiovascular event and whose LDL-C was (1) screened; (2) controlled to less than 130 mg/dl; and (3) controlled to less than 100 mg/dl [during the twelve months] following the event
16. Smoking cessation advice / counseling for Acute Myocardial Infarction (AMI) patients	Percentage of patients with AMI [during the prior twelve months] (who were cigarette smokers and) who receive smoking cessation advice or counseling during the hospital stay
17. Measurement of LV function for AMI patients	*Percentage of* patients with AMI *[during the prior twelve months]who have documented quantitative or specific qualitative assessment of LV systolic function during acute hospitalization*
18. ACE inhibitor / ARB therapy for AMI patients with LV dysfunction	*Percent of* patients with AMI *[during the prior twelve months] with left ventricular systolic dysfunction (LVSD) and without both angiotensin converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB) contraindications who are prescribed an ACEI or ARB at hospital discharge.*
19. Left ventricular function (LVF) assessment	Percentage of patients with heart failure [during the prior twelve months] with quantitative or qualitative results of LVF assessment recorded
20. ACE inhibitor / ARB therapy	Percentage of patients with heart failure [during the prior twelve months]† who also have left ventricular systolic dysfunction (LVSD) who were prescribed ACE inhibitor or ARB therapy
21. Angiotensin Converting Enzyme Inhibitor (ACEI) for left ventricular dysfunction (LVSD)	Percentage of heart failure patients with LVSD [during the prior twelve months]† without ACEI or ARB contraindications who were prescribed ACE inhibitor or ARB therapy at hospital discharge.
22. Detailed discharge instructions	Percentage of heart failure patients 18 and older discharged home [during the prior twelve months]† who had documentation that they or their care givers were given written discharge instructions or other educational material addressing all of the following: activity level, diet, discharge medications, follow-up appointment, weight monitoring and what to do if symptoms worsen
23. Smoking cessation advice / counseling for heart failure patients	Percentage of Heart Failure patients (who were cigarette smokers and) who receive smoking cessation advice or counseling during the hospital stay [during the prior twelve months]

The three non-IOM performance measures recommended by the Heart Disease CIT are shown in *italic font* in the chart above and are:

- cardiovascular disease risk assessment,

- assessment of left ventricular (LV) function in acute myocardial infarction (AMI) patients, and
- addition of an angiotensin-converting enzyme inhibitor (ACEI) or angiotensin II receptor blocker (ARB) in AMI patients found to have LV dysfunction.

Appendix 1 lists the 23 Heart Disease Performance Measures selected by the Heart Disease CIT. The list in this appendix identifies the setting of care (ambulatory, hospital or point of discharge) and the source of data for each measure (claims or chart). Charts can include paper charts, paper or electronic disease-specific patient registries, or electronic health records.

Appendix 2 lists the measures with corresponding recommendations derived from evidence-based, nationally recognized clinical guidelines. The source of each recommendation is referenced, with links to the sources available at the end of the appendix. It is important to recognize that the Heart Disease CIT only endorsed measures that were based on strong clinical evidence as to their appropriateness and effectiveness.

Most of the measures are process measures, such as the number of patients who received a recommended screening, test, procedure or treatment. Two of the 23 measures are short-term outcome measures that have been linked by clinical evidence to long-term outcomes such as cardiovascular events or mortality. These two outcome measures are the number of patients who achieved a recommended level of control of a clinical measure for: blood pressure (measure 6) and LDL lipid level (measure 15).

F. Performance Measures Data Collection

The Alliance is in the process of becoming a regional repository for data on provider performance on these selected clinical measures. The Alliance's Health Information & Technology Committee (HI&TC) is in the process of evaluating and recommending a software system that will allow the Alliance to aggregate and report on these performance measures. Claims-based data will be used initially, with the expectation that in the future data collection can be expanded to include information from other sources including lab vendors, electronic health records and disease-specific electronic patient registries for specific chronic conditions. The HI&TC will be issuing a separate report later this year on data aggregation methods, measurement approaches and related topics.

G. Development of Change Strategies

The purpose of the Alliance is to not only encourage a regional consistency on clinical performance measures, but also to act as a catalyst to bring about change and improve the quality of healthcare services delivered in the Puget Sound region. After developing the set of clinical performance measures for the care of persons with cardiovascular disease, the Heart Disease CIT's final process was to identify and recommend strategies to change behaviors of providers, consumers, purchasers, health plans and hospitals in the region to improve compliance with the chosen measures. These strategies emphasized the strengths and resources of the Alliance, and based the recommendations for change on achievable actions that can be implemented by the Alliance and its participating organizations.

The Heart Disease CIT chose five high-level strategies that were identified as crucial in the development of improved quality of care for heart disease. These strategies, listed in Table 4, were prioritized based on the importance given to them by the members of the Heart Disease CIT, their relevance to the four priority clinical focus areas, their achievability given existing resources, and their ability to affect change in a meaningful way. They are listed in order of priority of implementation.

Table 4: Change Strategies

	Priority Change Strategies	Description of Alliance Strategy
1.	Cardiovascular disease (CVD) risk assessment tools	Promote the use of CVD risk assessment tools for consumers and providers
2.	Patient registries or electronic health records (EHRs)	Emphasize the importance of disease-specific patient registries (either stand-alone or incorporated into EHRs) in clinical quality improvement efforts. Promote and facilitate the use and dissemination of such registries or EHRs in regional ambulatory care settings
3.	Promotion of patient behavior change and therapeutic lifestyle choices for patients with heart disease	Develop tools and vetted referral networks to facilitate patient behavior changes and appropriate therapeutic lifestyle choices
4.	Leverage work already underway by others in the region to promote systems change	Develop collaborations, partnerships or networks with regional organizations involved in health care systems change, such as state, county and city governments, nonprofit organizations, universities, health care facilities and others
5.	Discharge planning and patient hand-off between the inpatient and ambulatory care settings	Promote coordinated care management and improved follow-up systems for heart failure patients at the time of discharge from the hospital

1. Cardiovascular disease risk assessment tools:

The promulgation of a cardiovascular risk assessment tool is the only strategy that is not directed at the population of patients with known heart disease. The Heart Disease CIT felt strongly that the most effective way to reduce cost of care for heart disease will be to identify patients at risk for heart disease before they experience an adverse event, such as myocardial infarction, stroke or cardiac damage leading to heart failure, and to then intervene to control risk factors such as dyslipidemia, hypertension, unhealthy lifestyle choices and diabetes.

2. Electronic health records and/or disease-specific patient registries:

There was consensus among Heart Disease CIT members that the ability to track clinical measures over time, both on individual patient and population levels, was an important step in affecting long-term change and improving quality of care. This is especially important in the ambulatory care setting, where many providers and clinics currently lack such capability.

3. Promotion of patient behavior change and therapeutic lifestyle choices for patients with heart disease:

The Heart Disease CIT focused considerable attention on promoting preventive strategies and cardiovascular disease risk reduction. The team recognized that one of the strengths of the Alliance is its broad membership across multiple stakeholders, and that this coalition of consumers, plans, employers/purchasers, providers and community groups could be used to advantage in promoting and supporting healthy behaviors and therapeutic lifestyle choices at home, in the community, and in the workplace.

The team also strongly advocated for the importance of disease prevention and wellness promotion in the general population, but agreed to defer further work on this topic, which has implications for other conditions such as diabetes, obesity and cancer, to an Alliance prevention workgroup.

4. Leveraging the work of others to promote systems change:

The Chronic Care Model,[14] developed by Ed Wagner (an Alliance QIC and Heart Disease CIT member), emphasizes the importance of systems change in effectively managing chronic diseases. The literature on health care quality improvement clearly shows that systematic approaches, utilizing a combination of strategies, are more effective than any one change affected in isolation[15]. Thus, the Heart Disease CIT chose to look at broad approaches to quality improvement and endorse effective efforts at systems change.

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[14] The Chronic Care Model: Wagner EH. Chronic disease management: What will it take to improve care for chronic illness? Effective Clinical Practice. 1998;1:2-4. [Accessed online March 6, 2006 at: http://www.improvingchroniccare.org/change/model/components.html)

[15] For example, Agency for Healthcare Quality and Research Technical Review, Number 9: Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies, Vol. 2- Diabetes Mellitus Care, 2004.

As described earlier in this report, the Alliance intends to avoid duplication of efforts to improve healthcare quality in the region. There are a number of such efforts currently underway, or soon to be initiated, in Washington State at state and local levels. The Alliance, with its unique set of resources, can serve as a valuable collaborative partner in these efforts, and the Heart Disease CIT recommends such collaborations be explored further.

5. Discharge planning and patient hand-off between inpatient and ambulatory care settings for patients with heart failure:

People with heart failure are in a fragile state of health, and endure frequent hospitalizations at considerable personal and financial cost. It is recognized that periods of particular vulnerability for such patients occur when there is a change in care setting, particularly at hospital discharge. Appropriate transfer of care from the inpatient provider to the ambulatory care provider can occur only with careful planning and care management practices in place. The Heart Disease CIT recognized that neither hospital nor ambulatory care performance measures fully capture this vulnerable time, and recommended that particular emphasis be placed on easing the transition from hospital to community for patients with heart failure.

Appendix 3 looks at each of the five change strategy priorities in detail and identifies specific recommendations for each strategy, with information and links to community resources, clinical resources, and potential collaborative partners.

V. Heart Disease CIT Recommendations to the Alliance Board

Based on the process described above, the Heart Disease CIT makes the following recommendations to the Alliance Board for specific actions to improve the quality of care for heart disease patients in the Puget Sound region.

- Consider the formation of an Alliance prevention, health promotion and wellness workgroup to promote healthy lifestyle choices among people in the Puget Sound region.
- Adopt the 23 heart disease clinical performance measures recommended by the CIT for the measurement of the quality of care delivered to persons with heart disease in the region.
- Develop the technical capacity and methodology to aggregate and disseminate data on the achievement of the performance measures by practices and providers in the region.
- Place cardiovascular disease risk calculators for providers and consumers on the Alliance web site and notify participating organizations of their

availability. Disseminate the risk calculators to public libraries and employer intranet sites. Consider developing print versions of the calculators, such as pamphlets or posters, for persons without computer access, and distribute them to doctor's offices, worksites, and through health plans to their members. Encourage consumers to talk to their doctors about cardiovascular risk.

- Actively promote the importance and adoption of electronic health records (EHRs) or electronic disease-specific patient registries for meaningful quality improvement efforts.
- Facilitate the dissemination of EHRs or patient registries to clinics in the region by developing collaborative partnerships with groups working on this issue, such as:
    - HCA, First Choice and Qualis
    - The Department of Health Heart Disease Collaborative
    - The Washington State Medical Eductaion and Research Foundation Association disease registry project
    - The Qualis DOQ-IT Program
- Promote therapeutic lifestyle choices for patients with heart disease (and by extension the general population) by: recommending that health plans include wellness programs such as smoking cessation in their benefit design; encouraging employers to provide smoking cessation, nutrition and physical activity programs in the worksite; promoting employee incentive programs such as the King County Employees Health Incentives Program; and working with community organizations to promote existing wellness programs and facilitate the development of resource networks for providers and consumers.
- Leverage the work of others in the region to promote health care systems changes that support quality improvement. Form collaborative partnerships with academic organizations such as the University of Washington, Pacific Lutheran University School of Nursing, and Bastyr University on health care quality improvement initiatives. Encourage provider participation in the NCQA Heart/Stroke recognition program and Bridges to Excellence financial rewards program.
- Focus on the point of discharge from a hospital for high risk patients with heart failure, and be a catalyst for hospitals and others to develop disease management programs, medication reconciliation protocols, and personal health records in order to facilitate the coordination of care at this vulnerable interface between inpatient and outpatient settings.

Appendix 1: Measures grid

Puget Sound Health Alliance – Heart Disease Clinical Improvement Team
June 29, 2006

Measures adapted from the IOM Starter Set[+]
Italics- Non IOM Measures recommended for inclusion by the Puget Sound Health Alliance Heart Disease Clinical Improvement Team

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Setting*	Data Source
Cardiovascular Disease (CVD) Risk Assessment			
1. Risk Assessment	*Percentage of patients >40 years who have had a calculated CVD risk assessment [during the prior twelve months][†]*	*A*	*Chart*
Risk Reduction in Cardiovascular Disease (CVD) Patients			
2. Tobacco use	Percentage of patients [with heart disease][†] who were queried about tobacco use one or more times during the [prior twelve months][†]	A	Chart
3. Advising smokers to quit	Percentage of patients [with heart disease][†] who received advice to quit smoking [during the prior twelve months][†]	A	Chart
4. Influenza vaccination	Percentage of patients [with heart disease][†] ≥ 50 who received an influenza vaccination [during the prior twelve months][†]	A	No Reliable Source
5. Pneumonia vaccination	Percentage of patients [with heart disease][†] who have ever received a pneumonia vaccination	A	Claim (?)
6. Controlling high blood pressure	The percentage of enrolled adults aged 46-85 who have diagnosed hypertension and whose blood pressure was adequately controlled [during the prior twelve months][†]. Adequate control was defined as a blood pressure of 140/90 or lower. Both the systolic and diastolic pressure must have been at or under these thresholds for the person's blood pressure to be considered controlled.	A	Chart
7. Lipid Lowering Therapy	Percentage of patients with CAD who were prescribed a lipid-lowering therapy [during the prior twelve months][†] (based on current ACC/AHA guidelines)	A	Claim (?)
Management of Acute Myocardial Infarction (AMI)			
8. Beta-Blocker at arrival for AMI	Percentage of patients with acute myocardial infarction (AMI) [during the prior twelve months][†] who received beta-blocker therapy at time of arrival at hospital	H	Chart
9. Beta-Blocker prescribed at discharge for AMI	Percentage of patients with AMI [during the prior twelve months][†] without beta blocker contraindications who were prescribed a beta-blocker at hospital discharge (CMS/NQF/HQA**)	H/A	Claim (?)
10. Persistence of beta-blocker treatment after a heart attack	Percentage of members 35 and older who were hospitalized and discharged alive [during the prior twelve months][†] with a diagnosis of a heart attack and who received persistent beta-blocker treatment. Persistent treatment is defined as receiving treatment for 6 months after the discharge	A	Claim (?)

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Setting*	Data Source
11. Aspirin at arrival for acute myocardial infarction (AMI)	Percentage of patients with AMI [during the prior twelve months]† without aspirin contraindications who received aspirin within 24 hours before or after hospital arrival (CMS/NQF/HQA**)	H	Chart
12. Thrombolytic agent within 30 minutes of arrival for AMI	Percentage of patients with AMI [during the prior twelve months]† 18 and older with an ST elevation or LBBB (left bundle brand block) on ECG who received thrombolytic therapy, and whose time from hospital arrival to thrombolysis is 30 minutes or less (CMS/NQF/HQA**)	H	Chart
13. Percutaneous coronary intervention (PCI) within 120 minutes of arrival for AMI	Percentage of Patients with AMI [during the prior twelve months]† 18 and older with an ST elevation or LBBB on ECG who received PCI, and whose time from hospital arrival to PCI is 120 minutes or less (CMS/NQF/HQA**)	H	Chart
14. Aspirin prescribed at discharge for AMI	Percentage of patients with AMI [during the prior twelve months]† without aspirin contraindications who are prescribed aspirin at hospital discharge (CMS/NQF/HQA**)	H/A	Chart
15. Cholesterol management after acute cardiovascular event	Percentage of patients 18-75 yrs of age who had evidence of an acute cardiovascular event and whose LDL-C was (1) screened; (2) controlled to less than 130 mg/dl; and (3) controlled to less than 100 mg/dl [during the twelve months]† following the event	A	(1) Claim, (2) Chart, (3) Chart
16. Smoking cessation advice / counseling for Acute Myocardial Infarction (AMI) patients	Percentage of patients with AMI [during the prior twelve months]† (cigarette smokers) who receive smoking cessation advice or counseling during the hospital stay (CMS/NQF/HQA**)	H	Chart
17. Measurement of LV function for AMI patients	*Percentage of* patients with AMI *[during the prior twelve months]†who have documented quantitative or specific qualitative assessment of LV systolic function during acute hospitalization*	*H*	*Chart, Claim (for procedure)*
18. ACE inhibitor / ARB therapy for AMI patients with LV dysfunction	*Percent of* patients with AMI *[during the prior twelve months]†with left ventricular systolic dysfunction (LVSD) and without both angiotensin converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB) contraindications who are prescribed an ACEI or ARB at hospital discharge. For purposes of this measure, LVSD is defined as chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular systolic (LVS) function consistent with moderate or severe systolic dysfunction (CMS/JCAHO***)*	*H/A*	*Chart*
Management of Congestive Heart Failure			
19. Left ventricular function (LVF) assessment	Percentage of patients with heart failure [during the prior twelve months]† with quantitative or qualitative results of LVF assessment recorded	H or A	Chart, Claim (for procedure)
20. ACE inhibitor / ARB therapy	Percentage of patients with heart failure [during the prior twelve months]† who also have left ventricular systolic dysfunction (LVSD) who were prescribed ACE inhibitor or ARB therapy	A	Claim (?)
21. Angiotensin Converting Enzyme Inhibitor (ACEI) for left ventricular dysfunction (LVSD)	Percentage of heart failure patients with LVSD [during the prior twelve months]† without ACEI or ARB contraindications who were prescribed ACE inhibitor or ARB therapy at hospital discharge. (CMS/NQF/HQA**) Note: Measure revised to incorporate ARBs	H/A	Claim (?)

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Setting*	Data Source
22. Detailed discharge instructions	Percentage of heart failure patients 18 and older discharged home [during the prior twelve months]† who had documentation that they or their care givers were given written discharge instructions or other educational material addressing all of the following: activity level, diet, discharge medications, follow-up appointment, weight monitoring and what to do if symptoms worsen (CMS/NQF/HQA**)	H/A	Chart
23. Smoking cessation advice / counseling for heart failure patients	Percentage of Heart Failure patients (cigarette smokers) who receive smoking cessation advice or counseling during the hospital stay [during the prior twelve months]† (CMS/NQF/HQA**)	H	Chart

+ Institute of Medicine Performance Measurement: Accelerating Improvement, 2005. Appendix G: Performance Measure Starter Set http://www.nap.edu/books/0309100070/html/179.html

† Brackets indicate language added to the IOM Measure by the Puget Sound Health Alliance.

*Setting: A=Ambulatory; H= Hospital H/A= Hospital/Ambulatory interface at time of discharge from hospital (measure applies to hospital)

**Hospital Compare/Hospital Quality Alliance Measures (CMS/NQF/HQA) measures: http://www.cms.hhs.gov/quality/hospital/

***Centers for Medicare and Medicaid Services/Joint Commission on Accreditation of Health Care Organizations Measures http://www.qualitymeasures.ahrq.gov/summary/summary.aspx?doc_id=6051

Appendix 2: Measures and recommendations grid

Puget Sound Health Alliance – Heart Disease Clinical Improvement Team
June 29, 2006

Measures adapted from the IOM Starter Set[+]
Italics- Non IOM Measures recommended for inclusion by the Puget Sound Health Alliance Heart Disease Clinical Improvement Team

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
Cardiovascular Disease (CVD) Risk Assessment				
1. Risk Assessment	*Percentage of patients >40 years who have had a calculated CVD risk assessment [during the prior twelve months][†]*	*Every 5 years (or more frequently if risk factors change), adults, especially those >= 40 years of age or those with >= 2 risk factors, should have their 10-year risk of CHD assessed with a multiple risk score.* *(AHA Guidelines for Primary Prevention of CVD and Stroke: 2002 Update)* *For persons over 20 years of age a fasting lipoprotein profile should be obtained once every 5 years. For individuals under treatment with therapeutic lifestyle changes, or who are on cholesterol-lowering medications, measurements may be requested more often.* *[NCEP Report on Detection, Evaluation and Treatment of High Blood Cholesterol (ATP III) 2001 and 2004 Update]*	*A*	*Chart*
Risk Reduction in patients with Cardiovascular Disease				
2. Tobacco use	Percentage of patients [with heart disease][†] who were queried about tobacco use one or more times during the [prior twelve months][†]	Ask about tobacco use status at every visit. (AHA Guidelines for Primary Prevention of CVD and Stroke: 2002 Update)	A	Chart
3. Advising smokers to quit	Percentage of patients [with heart disease][†] who received advice to quit smoking [during the prior twelve months][†]	Advise every tobacco user to quit. (AHA Guidelines for Primary Prevention of CVD and Stroke: 2002 Update) Strongly encourage patient and family to stop smoking and to avoid secondhand smoke. Provide counseling, pharmacological therapy, and formal smoking cessation programs as appropriate. (AHA/ACC GLs for Preventing Heart Attack and Death in Patients With ASCVD: 2001 Update)	A	Chart
4. Influenza vaccination	Percentage of patients [with heart disease][†] ≥ 50 who received an influenza vaccination [during the prior twelve months][†]	Vaccination is recommended for persons aged 50 years of age and over, and for all persons with chronic disorders of the cardiovascular or pulmonary systems. (ACIP General Recommendations)	A	No Reliable Source

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
5. Pneumonia vaccination	Percentage of patients [with heart disease]† who have ever received a pneumonia vaccination	All persons [aged >= 65 years] should receive the pneumococcal vaccine, including previously unvaccinated persons and persons who have not received vaccine within 5 years (and were <65 years of age at the time of vaccination). All persons who have unknown vaccination status should receive one dose of vaccine. Persons aged 2-64 years who are at increased risk for pneumococcal disease or its complications if they become infected should be vaccinated. Persons at increased risk of severe disease include those with chronic illness such as chronic cardiovascular disease (e.g., congestive heart failure [CHF] or cardiomyopathies) (ACIP General Recommendations)	A	Claim (?)
6. Controlling high blood pressure	The percentage of enrolled adults aged 46-85 who have diagnosed hypertension and whose blood pressure was adequately controlled [during the prior twelve months]†. Adequate control was defined as a blood pressure of 140/90 or lower. Both the systolic and diastolic pressure must have been at or under these thresholds for the person's blood pressure to be considered controlled.	BP goal <140/90 (<130/80 for patients with diabetes or chronic kidney disease) (JNC VII Report on High BP 2003)	A	Chart

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
7. Lipid Lowering Therapy	Percentage of patients with CAD who were prescribed a lipid-lowering therapy [during the prior twelve months][†] (based on current ACC/AHA guidelines)	LDL goals for treatment are based on risk (see NCEP Report on Detection, Evaluation and Treatment of High Blood Cholesterol (ATP III) 2001 and 2004 Update for complete guidelines and recommendations). The treatment goal for high-risk patients [individuals who have coronary heart disease (CHD), or disease of the blood vessels to the brain or extremities, or diabetes, or multiple (2 or more) risk factors that give them a greater than 20 percent chance of having a heart attack within 10 years] is **an LDL less than 100 mg/dL**. ▪ Update: The overall goal for high-risk patients is still an LDL less than 100 mg/dL. There is a therapeutic option to set the goal at an LDL **less than 70 mg/dL** for very high-risk patients--those who have had a recent heart attack, or those who have cardiovascular disease combined with either diabetes, or severe or poorly controlled risk factors (such as continued smoking), or metabolic syndrome (a cluster of risk factors associated with obesity that includes high triglycerides and low HDL cholesterol). Consider cholesterol-lowering drug treatment in addition to lifestyle therapy for LDL cholesterol levels **130 mg/dL or higher** in high-risk patients. Drug treatment for LDL levels 100-129 mg/dL is optional, and not needed for LDL less than 100 mg/dL. ▪ Update: Consider drug treatment in addition to lifestyle therapy for LDL levels **100 mg/dL or higher** in high-risk patients, and characterizes drug treatment as optional for LDL less than 100 mg/dL. (NCEP Report on Detection, Evaluation and Treatment of High Blood Cholesterol (ATP III) 2001, and 2004 Update)	A	Claim (?)
Management of Acute Myocardial Infarction (AMI)				
8. Beta-Blocker at arrival for AMI	Percentage of patients with acute myocardial infarction (AMI) [during the prior twelve months][†] who received beta-blocker therapy at time of arrival at hospital	Class I: Oral beta blocker therapy should be administered promptly to those patients without a contraindication (A) Class IIA: It is reasonable to administer IV beta-blockers promptly to STEMI patients without contraindications, especially if a tachyarrhythmia or hypertension is present (B) (ACC/AHA STEMI guidelines 2004)[£] Class I: Beta blocker, with the first dose administered intravenously if there is ongoing chest pain, followed by oral administration, if there are no contraindications (B) (ACC/AHA UA/NSTEMI Guidelines 2002)[£]	H	Chart

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
9. Beta-Blocker prescribed at discharge for AMI	Percentage of patients with AMI [during the prior twelve months]† without beta blocker contraindications who were prescribed a beta-blocker at hospital discharge (CMS/NQF/HQA**)	Class I: All patients after STEMI except those at low risk (normal or near-normal ventricular function, successful reperfusion, absence of significant ventricular arrhythmias) and those with contraindications should receive beta-blocker therapy. Treatment should begin within a few days of the event, if not initiated acutely, and continue indefinitely. (A) Class IIa: It is reasonable to prescribe beta-blockers to low-risk patients after STEMI who have no contraindications to that class of medications. (A) (ACC/AHA STEMI guidelines 2004)£ Class I: Beta-blockers at discharge if no contraindications (B) (ACC/AHA UA/NSTEMI Guidelines 2002)£	H/A	Claim (?)
10. Persistence of beta-blocker treatment after a heart attack	Percentage of members 35 and older who were hospitalized and discharged alive [during the prior twelve months]† with a diagnosis of a heart attack and who received persistent beta-blocker treatment. Persistent treatment is defined as receiving treatment for 6 months after the discharge	Class I: Oral beta blocker therapy should be administered promptly to those patients without a contraindication (A) Class IIA: It is reasonable to administer IV beta-blockers promptly to STEMI patients without contraindications, especially if a tachyarrhythmia or hypertension is present (B) (ACC/AHA STEMI guidelines 2004)£ Class I: Beta blocker, with the first dose administered intravenously if there is ongoing chest pain, followed by oral administration, if there are no contraindications (B) (ACC/AHA UA/NSTEMI Guidelines 2002)£	A	Claim (?)
11. Aspirin at arrival for acute myocardial infarction (AMI)	Percentage of AMI patients [during the prior twelve months]† without aspirin contraindications who received aspirin within 24 hours before or after hospital arrival (CMS/NQF/HQA**)	Class I: Aspirin should be chewed by patients who have not taken aspirin before presentation with STEMI. The initial does should be : 162 mg (A) to 325 mg (C). (ACC/AHA STEMI guidelines 2004)£ ASA should be administered as soon as possible after presentation and continued indefinitely. (A) (ACC/AHA UA/NSTEMI Guidelines 2002)£	H	Chart

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
12. Thrombolytic agent within 30 minutes of arrival for AMI	Percentage of AMI patients [during the prior twelve months][†] 18 and older with an ST elevation or LBBB (left bundle brand block) on ECG who received thrombolytic therapy, and whose time from hospital arrival to thrombolysis is 30 minutes or less (CMS/NQF/HQA**)	Class I: All STEMI patients should undergo rapid evaluation for reperfusion therapy and have a reperfusion strategy implemented promptly after contact with the medical system (A) *"The medical system goal is to facilitate rapid recognition and treatment of patients with STEMI such that door-to-needle (or medical contact–to-needle) time for initiation of fibrinolytic therapy can be achieved within 30 minutes"* Class I: STEMI patients presenting to a facility without the capability for expert, prompt intervention with primary PCI within 90 minutes of first medical contact should undergo fibrinolyis unless contraindicated (A) (ACC/AHA STEMI guidelines 2004)[£]	H	Chart
13. Percutaneous coronary intervention (PCI) within 120 minutes of arrival for AMI	Percentage of AMI patients [during the prior twelve months][†] 18 and older with an ST elevation or LBBB on ECG who received PCI, and whose time from hospital arrival to PCI is 120 minutes or less (CMS/NQF/HQA**)	Class I: Primary PCI should be performed as quickly as possible with a goal of a medical contact–to-balloon or door-to-balloon interval of within 90 minutes (B) (ACC/AHA STEMI guidelines 2004)[£]	H	Chart
14. Aspirin prescribed at discharge for AMI	Percentage of AMI patients [during the prior twelve months][†] without aspirin contraindications who are prescribed aspirin at hospital discharge (CMS/NQF/HQA**)	Class I: 1. A daily dose of aspirin 75 to 162 mg orally should be given indefinitely to patients recovering from STEMI if no contraindications (A) (ACC/AHA STEMI Guidelines 2004)[£] Class I: Aspirin 75 to 325 mg per day in the absence of contraindications (A) (ACC/AHA UA/NSTEMI Guidelines 2002)[£]	H/A	Chart

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
15. Cholesterol management after acute cardiovascular event	Percentage of patients 18-75 yrs of age who had evidence of an acute cardiovascular event and whose LDL-C was (1) screened; (2) controlled to less than 130 mg/dl; and (3) controlled to less than 100 mg/dl [during the twelve months]† following the event	LDL goals for treatment are based on risk (see NCEP Report on Detection, Evaluation and Treatment of High Blood Cholesterol (ATP III) 2001 and 2004 Update for complete guidelines and recommendations). The treatment goal for high-risk patients [individuals who have coronary heart disease (CHD), or disease of the blood vessels to the brain or extremities, or diabetes, or multiple (2 or more) risk factors that give them a greater than 20 percent chance of having a heart attack within 10 years] is **an LDL less than 100 mg/dL**. ▪ Update: The overall goal for high-risk patients is still an LDL less than 100 mg/dL. There is a therapeutic option to set the goal at an LDL **less than 70 mg/dL** for very high-risk patients--those who have had a recent heart attack, or those who have cardiovascular disease combined with either diabetes, or severe or poorly controlled risk factors (such as continued smoking), or metabolic syndrome (a cluster of risk factors associated with obesity that includes high triglycerides and low HDL cholesterol). Consider cholesterol-lowering drug treatment in addition to lifestyle therapy for LDL cholesterol levels **130 mg/dL or higher** in high-risk patients. Drug treatment for LDL levels 100-129 mg/dL is optional, and not needed for LDL less than 100 mg/dL. ▪ Update: Consider drug treatment in addition to lifestyle therapy for LDL levels **100 mg/dL or higher** in high-risk patients, and characterizes drug treatment as optional for LDL less than 100 mg/dL. (NCEP Report on Detection, Evaluation and Treatment of High Blood Cholesterol (ATP III) 2001, and 2004 Update)	A	(1) Claim, (2) Chart, (3) Chart
16. Smoking cessation advice / counseling for AMI patients	Percentage of Acute Myocardial Infarction (AMI) patients [during the prior twelve months]† (cigarette smokers) who receive smoking cessation advice or counseling during the hospital stay (CMS/NQF/HQA**)	Class I: Patients who survive the acute phase of an AMI should have plans initiated for secondary prevention therapies. (A) *(Smoking cessation, aggressive lipid lowering, control of hypertension and diabetes, and prophylactic use of aspirin, beta-blockers, and ACE inhibitors are key components of secondary prevention that have a demonstrated benefit).* (ACC/AHA STEMI Guidelines 2004) £ Class 1: Before discharge specific instructions should be given on smoking cessation and achievement or maintenance of optimal weight, daily exercise, and diet. *(B)* (ACC/AHA UA/NSTEMI Guidelines 2002) £	H	Chart
17. Measurement of LV function AMI patients	*Percentage of AMI patients [during the prior twelve months]† who have documented quantitative or specific qualitative assessment of LV systolic function during acute hospitalization*	*Class I: Left ventricular ejection fraction should be measured in all STEMI patients. (B)* *(ACC/AHA STEMI Guidelines 2004) £* *Class IIa: A noninvasive test (echocardiogram or radionuclide angiogram) to evaluate LV function in patients with definite ACS who are not scheduled for coronary arteriography and left ventriculography. (C)* *(ACC/AHA UA/NSTEMI Guidelines 2002) £*	*H*	*Chart, Claim (for procedure)*

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
18. ACE inhibitor / ARB therapy for AMI patients with LV dysfunction	*Percent of AMI patients [during the prior twelve months]† with left ventricular systolic dysfunction (LVSD) and without both angiotensin converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB) contraindications who are prescribed an ACEI or ARB at hospital discharge. For purposes of this measure, LVSD is defined as chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular systolic (LVS) function consistent with moderate or severe systolic dysfunction (CMS/JCAHO***)*	*Class I: An ACE inhibitor should be administered orally during convalescence from STEMI in patients who tolerate this class of medication, and it should be continued over the long term. (A)* *(ACC/AHA STEMI Guidelines 2004)* £ *Class I: ACEIs for patients with CHF, LV dysfunction (EF less than 0.40), hypertension, or diabetes. (A)* *(ACC/AHA UA/NSTEMI Guidelines 2002)* £	*H/A*	*Chart*
Management of Heart Failure				
19. Left ventricular function (LVF) assessment	Percentage of patients with heart failure [during the prior twelve months]† with quantitative or qualitative results of LVF assessment recorded	Class I: Two-dimensional echocardiography with Doppler should be performed during initial evaluation of patients presenting with HF to assess LVEF, LV size, wall thickness, and valve function. Radionuclide ventriculography can be performed to assess LVEF and volumes. (C) (ACC/AHA HF Guidelines 2005) £	H or A	Chart, Claim (for procedure)

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
20. ACE inhibitor / ARB therapy	Percentage of patients with heart failure [during the prior twelve months][†] who also have left ventricular systolic dysfunction (LVSD) who were prescribed ACE inhibitor or ARB therapy	Class I: Angiotensin converting enzyme inhibitors are recommended for all patients with current or prior symptoms of HF and reduced LVEF, unless contraindicated (A). Angiotensin II receptor blockers are recommended for patients who are ACEI-intolerant (see text for information regarding patients with angioedema). (A) Class IIa: Angiotensin II receptor blockers are reasonable to use as alternatives to ACEIs as first-line therapy for patients with mild to moderate HF and reduced LVEF, especially for patients already taking ARBs for other indications. (A) (ACC/AHA HF Guidelines 2005)[£]	A	Claim (?)
21. Angiotensin Converting Enzyme Inhibitor (ACEI) for left ventricular dysfunction (LVSD)	Percentage of heart failure patients with LVSD [during the prior twelve months][†] without ACEI or ARB contraindications who were prescribed ACE inhibitor or ARB therapy at hospital discharge. (CMS/NQF/HQA**) Note: Measure revised to incorporate ARBs	Class I: Two-dimensional echocardiography with Doppler should be performed during initial evaluation of patients presenting with HF to assess LVEF, LV size, wall thickness, and valve function. Radionuclide ventriculography can be performed to assess LVEF and volumes. (C) (ACC/AHA HF Guidelines 2005)[£]	H/A	Claim (?)
22. Detailed discharge instructions	Percentage of heart failure patients 18 and older discharged home [during the prior twelve months][†] who had documentation that they or their care givers were given written discharge instructions or other educational material addressing all of the following: activity level, diet, discharge medications, follow-up appointment, weight monitoring and what to do if symptoms worsen (CMS/NQF/HQA**)	*No AHA/ACC guidelines on discharge instructions for HF patients*	H/A	Chart

Category	Recommended Puget Sound Health Alliance Heart Disease Measures Based on the IOM Starter-Set	Guideline Recommendations Related to IOM Starter-Set Measures - from the American Heart Association (AHA), American College of Cardiology (ACC), JNC VII, and NCEP (ATPIII)	Setting*	Data Source
23. Smoking cessation advice / counseling for heart failure patients	Percentage of Heart Failure patients (cigarette smokers) who receive smoking cessation advice or counseling during the hospital stay [during the prior twelve months][†] (CMS/NQF/HQA**)	*(No information on in-hospital counseling)* Class I: Careful history of current use of alcohol, tobacco, illicit drugs, "alternative therapies," and chemotherapy drugs, as well as diet and sodium intake, should be obtained at each visit of a patient with HF. (C) (ACC/AHA HF Guidelines 2005)[£]	H	Chart

+ Institute of Medicine Performance Measurement: Accelerating Improvement, 2005. Appendix G: Performance Measure Starter Set http://www.nap.edu/books/0309100070/html/179.html

[†] Brackets indicate language added to the IOM Measure by the Puget Sound Health Alliance.

*Setting: A=Ambulatory; H= Hospital ; H/A= Hospital/Ambulatory interface at time of discharge from hospital (measure applies to hospital)

**Hospital Compare/Hospital Quality Alliance Measures (NQF/CMS/HQA) measures: http://www.cms.hhs.gov/quality/hospital/

***Centers for Medicare and Medicaid Services/Joint Commission on Accreditation of Health Care Organizations Measures (CMS/JCAHO): http://www.qualitymeasures.ahrq.gov/summary/summary.aspx?doc_id=6051

[£]**ACC/AHA Classification of Recommendations:**
Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.
Class II: Conditions for which there is conflicting evidence and/ora divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb: Usefulness/efficacy is less well established by evidence/opinion.
Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.

Level of Evidence:
Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.
Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies.
Level of Evidence C: Only consensus opinion of experts, case studies, or standard-of-care.

Glossary:

Organizations:
ACC: American College of Cardiology
ACIP: Advisory Council on Immunization Practices
AHA: American Heart Association
AQA: Ambulatory care Quality Alliance
ATP III: National Cholesterol Education Program Adult Treatment Panel III
CMS: Centers for Medicare and Medicaid Services
HEDIS: The Health Plan Employer Data and Information Set
HQA: Hospital Quality Alliance
NCEP: National Cholesterol Education Program
NQF: National Quality Forum

Terms:
AMI: Acute Myocardial Infarction
ACEI: Angiotensin Converting Enzyme Inhibitor
ARB: Angiotensin II Receptor Blocker
HF: Heart Failure
INR: International Normalized Ration (for prothrombin time)
NSTEMI: Non-ST wave elevation myocardial infarction
STEMI: ST elevation myocardial infarction
LDL-C: Low density lipoprotein cholesterol
LVF: Left Ventricular Function
LVEF: Left Ventricular Ejection Fraction
LVSD: Left Ventricular Systolic Dysfunction
PCI: Percutaneous Coronary Intervention

Guidelines:

ACIP General Recommendations:
Advisory Committee on Immunization Practices General Recommendations 2005
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5102a1.htm

See also:
Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP) (July 2005) http://www.cdc.gov/mmwr/PDF/rr/rr5408.pdf
Prevention of Pneumococcal Disease: Recommendations of the Advisory Committee on Immunization Practices (ACIP) (April 1997)
http://www.cdc.gov/mmwr/PDF/rr/rr4608.pdf

AHA Guidelines for Primary Prevention of Cardiovascular Disease and Stroke: 2002 Update
http://circ.ahajournals.org/cgi/content/full/106/3/388

AHA/ACC GL's for Preventing Heart Attack and Death in Patients With ASCVD: 2001 Update:
AHA/ACC Guidelines for Preventing Heart Attack and Death in Patients With Atherosclerotic Cardiovascular Disease: 2001 Update
Link to PDF file: http://www.acc.org/clinical/topic/topic.htm#P

JNC VII Report on High Blood Pressure:
Joint National Committee VII Report on the Prevention, Detection, Evaluation and Treatment of High Blood Pressure 2003
http://www.nhlbi.nih.gov/guidelines/hypertension/

NCEP Report on Detection, Evaluation and Treatment of High Blood Cholesterol (ATP III) 2001 and 2004 Update:
http://www.nhlbi.nih.gov/guidelines/cholesterol/

ACC/AHA STEMI Guidelines 2004:
ACC/AHA Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction 2004
http://www.acc.org/clinical/guidelines/stemi/Guideline1/index.htm

ACC/AHA UA/NSTEMI Guidelines 2002:
ACC/AHA 2002 Guideline Update for the Management of Patients With Unstable Angina and Non-ST-Segment Elevation Myocardial Infarction 2002
http://www.acc.org/clinical/guidelines/unstable/incorporated/index.htm

ACC/AHA HF Guidelines 2005:
ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult 2005
http://content.onlinejacc.org/cgi/reprint/46/6/e1

Appendix 3: Change strategies document

Implementation Recommendations Based on the Priority Change Strategies

1.	Cardiovascular disease (CVD) risk assessment tools	Promote the use of CVD risk assessment tools for consumers and providers

- The Alliance should promote and encourage providers to use a cardiovascular disease (CVD) risk assessment tool, such as the Framingham risk calculator developed by the NIH National Cholesterol Education Program (NCEP).
    - Online version: http://hp2010.nhlbihin.net/atpiii/calculator.asp?usertype=prof
    - Downloadable PDA versions:
        - Palm OS only: http://hp2010.nhlbihin.net/atpiii/atp3palm.htm
        - Palm OS and Pocket PC: http://www.statcoder.com/cholesterol.htm
    - Downloadable print version: http://hp2010.nhlbihin.net/atpiii/riskcalc.htm
- The Alliance should encourage consumers to be aware of their CVD risk by promoting the use of consumer-oriented risk calculator tools. Consumers should be instructed to discuss their CVD risk with their doctors.
    - Consumer-oriented ATP III guidelines with Framingham risk calculator:
        - http://hp2010.nhlbihin.net/atpiii/calculator.asp?usertype=pub
    - NCEP "Know Your Numbers":
        - Online kit: http://hp2010.nhlbihin.net/cholmonth/chol_kit.htm
        - AHA web site: http://www.americanheart.org/presenter.jhtml?identifier=3034396
- For those consumers who do not have access to a computer at home, the risk calculator tool and information should also be made available in public libraries and on company intranet sites. In addition, print versions, such as pamphlets, brochures or posters could be made available in doctor's offices, worksites, and through health plans to their enrollees.

Action Plan:

- **Place cardiovascular disease risk calculators for providers and consumers on the Alliance web site and notify members of their availability.**
- **Disseminate the risk calculators to public libraries and employer intranet sites.**
- **Consider developing print versions of the calculators, such as pamphlets or posters, for persons without computer access, and distribute them to doctor's offices, worksites, and through health plans to their members.**
- **Encourage consumers to talk to their doctors about cardiovascular risk.**

2.	Patient registries or electronic health records (EHRs)	Emphasize the importance of patient registries (either stand-alone or incorporated into EHRs) in clinical quality improvement efforts. Promote and facilitate the use and dissemination of such registries or EHRs in regional ambulatory care settings

- There are a number of ongoing efforts aimed at promoting the dissemination of electronic health records (EHR's) in the Puget Sound Region. The HD CIT made a recommendation for the Alliance to play a role in coordinating these regional efforts. CIT members, especially those representing provider groups, made the recommendation to promote the use of patient-centered rather than disease-specific registries and EHR's whenever possible. Recognizing that the acquisition, implementation and maintenance of EHRs and registries is expensive, the CIT further recommends that the Alliance to look for sources of funding subsidies for these activities, especially for small practices.
- HCA/First Choice/Qualis Grants: The Alliance has been invited to sit on a steering committee with the Washington State Health Care Authority, First Choice, and Qualis Health to determine how to distribute grants of up to $20,000 each to small clinical practices in the region for the acquisition or upgrading (to include registry function) of electronic health records (EHRs). Total funding of $1 million has been committed to this effort to date. Grants are to be awarded late summer 2006.
- Washington State Heart Disease Collaborative: The Alliance may have an opportunity to work with the Washington State Department of Health (DOH) on the development and dissemination of a heart disease patient registry (updated version of CDEMS), as part of the Heart Disease Collaborative project. The estimated date of implementation of the registry is July 2006. Members of the CIT suggested that Jan Norman, head of the Collaborative projects at DOH, be invited to speak to the Heart Disease CIT members and members of the Alliance. Although CDEMS is a disease-specific registry
- WSMA grants: The Alliance has been approached by the Washington State Medical Association (WSMA) to collaborate with them on the development of patient registries for the disease conditions that form the Alliance's four initial areas of focus, i.e. diabetes, heart disease, depression and back pain, as well as asthma and antibiotic use. WSMA has obtained funding for this venture, and plans to contract with a data vendor to set up pre-populated patient registries for these disease conditions.
- Qualis Health DOQ-IT: The Doctors Office Quality-Information Technology program was initiated by the Centers for Medicare and Medicaid Services (CMS) to accelerate the transition to EHRs in medical clinics across the country. In Washington and Idaho, Qualis Health has been contracted by CMS to provide assistance to select and implement EHR systems in participating practices. DOQ-IT participants are required to report on clinical measures to CMS. This effort is distinct from Qualis' participation in the grants for EHR's discussed above, and might present an opportunity for coordination with other efforts. Web link to DOQ-IT: http://www.qualishealth.org/doqit/index.cfm

Action Plan:

- **Emphasize the importance of electronic health records (EHRs) or electronic disease-specific patient registries for meaningful quality improvement efforts.**
- **Facilitate the dissemination of EHRs or patient registries to clinics in the region by developing collaborative partnerships with groups working on this issue, such as:**
  - **(1) HCA, First Choice and Qualis**
  - **(2) The Washington State DOH Heart Disease Collaborative**
  - **(3) The WSMA disease registry project**
  - **(4) Qualis DOQ-IT Program.**

3.	Promotion of patient behavior change and therapeutic lifestyle choices	Develop tools and vetted community referral networks to facilitate consumer behavior changes and appropriate therapeutic lifestyle choices

- The Heart Disease CIT strongly recommends that promotion of therapeutic lifestyle choices in patients with heart disease (as well as more broadly in the general population) be a priority for the Alliance.
- The Heart Disease CIT recommends that the Alliance promote the expansion of health plan benefits to cover smoking cessation programs, and to expand employer worksite opportunities to include smoking cessation, nutrition and physical activity programs.
- The Alliance could work with brokers and employee benefits consultants to explore ways to encourage employers to offer wellness programs and to further employee participation in such programs when they are offered. Clearpoint, an employee benefits consulting firm based in Seattle, indicates that while 53% of employers offer a smoking cessation program, only 1% of employees participate. Likewise, 43% of employers offer weight loss programs, but only 7% of employees take advantage of them. http://www.clearpoint.com/pe/clearpoints.htm
- KC Employee Health Incentives Program: The Alliance should highlight and endorse programs such as the King County Employee Healthy Incentives Program, which rewards employees for participating in wellness activities by reducing their out-of-pocket costs for health insurance premiums. The Alliance could use the power of its membership to encourage other employers in the region to adopt similar programs.
- The Alliance could highlight existing community resources on therapeutic lifestyle choices and explore ways of facilitating referrals to these resources. Examples of existing community resources include:
  Tobacco cessation programs:
  - Washington State DOH Tobacco Quit Line: http://www.quitline.com/ 1-877-270-STOP (7867)
  - American Lung Association *Freedom from Smoking*: http://www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=22542
  - Other smoking cessation programs and resources in WA State

(American Lung Association web site): http://www.alaw.org/tobacco_control/quit_smoking_today/quit_kit/smoking_cessation_programs_in_washington_state.html

Other wellness programs:

- Seattle King County Public Health "Steps to Health": http://www.metrokc.gov/health/steps/
  Physical activity: http://www.metrokc.gov/health/exercise/index.htm
  Nutrition: http://www.metrokc.gov/health/nutrition/index.htm
- American Heart Association: www.americanheart.org
- Washington Health Foundation Healthiest State in the Nation Campaign and "Counting Points" program.

Action Plan:

- **Promote therapeutic lifestyle choices for patients with heart disease (and by extension the general population) by recommending that health plans include wellness programs such as smoking cessation in their benefit design.**
- **Encourage employers to provide smoking cessation, nutrition and physical activity programs in the worksite.**
- **Promote employee incentive programs such as the King County Employees Health Incentives Program.**
- **Work with community organizations to promote existing wellness programs and facilitate the development of resource networks for providers and consumers.**

4.	Leveraging work of others in the region to promote systems change	Develop collaborations, partnerships or networks with regional organizations involved in health care systems change, such as state, county and city governments, nonprofit organizations, universities, health care facilities and others

- Academic collaborations. The Alliance should look for opportunities to develop collaborative and mutually beneficial relationships with academic institutions in the region, such as the University of Washington Schools of Medicine, Pharmacy, Nursing and Public Health, the School of Nursing at Pacific Lutheran University and Bastyr University.
  - As an example, students in the Clinical Informatics and Patient-Centered Technologies Program at the University of Washington are required to complete 6 project credits in health care organizations working on improving care at a clinical or organizational level.
- NCQA Heart /Stroke Recognition Program- The NCQA program to recognizes physicians who provide quality care to patients with heart disease or who have had a stroke. A set of 5 ambulatory care measures (BP control, lipid measurement, lipid management, aspirin use, smoking cessation) have been chosen, and target achievement levels have been set for each measure. Providers achieving the target levels in all 5 measures receive a certificate of recognition. http://www.ncqa.org/hsrp/

- Current fees for enrollment in the program are $450 per individual provider, and $2700 for clinics with 6-200 providers. The WA State DOH Heart Disease and Stroke Prevention Program has received CDC funding to market and promote the NCQA Recognition Program among providers, and to offset the application fees. http://www.doh.wa.gov/cfh/heart_stroke/
- The Bridges to Excellence coalition recognizes and reward providers who meet the NCQA targets. In the Cardiac Care program physicians who demonstrate high levels of performance in cardiac care are eligible for incentive bonuses funded by participating purchasers. http://www.bridgestoexcellence.org/bte/

The Alliance could partner with NCQA, the DOH and Bridges to Excellence to encourage participation in the NCQA Heart Stroke Recognition program, and to identify and promote providers in the region who have achieved certification.

♦ The Bureau of Primary Health Care Health Disparities Collaboratives include several Chronic Disease Collaboratives which focus on the management of chronic diseases, such as cardiovascular disease and others, at Community Health Centers. These collaboratives are similar to the DOH Collaboratives, but have a different funding stream and are coordinated through the Institute for Healthcare Improvement. http://bphc.hrsa.gov/quality/Collaboratives.htm
The Alliance could foster collaboration between the BPHC Collaboratives in the region and those of the DOH.

Action Plan:

- ♦ **Form collaborative partnerships with academic organizations such as the University of Washington, Pacific Lutheran University School of Nursing, and Bastyr University on health care quality improvement initiatives.**
- ♦ **Encourage provider participation in the NCQA Heart/Stroke recognition program and Bridges To Excellence reward program.**
- ♦ **Work with the DOH and Bureau of Primary Health Care to coordinate their Heart Disease Collaborative efforts.**

5.	Discharge planning and patient hand-off between the inpatient and ambulatory care settings	Develop coordinated care management and follow-up systems for chronic heart failure patients at the time of discharge from the hospital

- ♦ Many patients with chronic heart failure are in a fragile state of health and require optimal coordination between many parameters of their care. The time of transfer of care from one setting to another is particularly vulnerable for these patients. The Heart Disease CIT therefore recommends the Alliance make efforts to promote improved coordination between inpatient and outpatient care for this group.
- ♦ Algorithm for identification of high risk heart failure patients: It has been shown that 30% of heart failure patients consume 90% of health care costs attributable to the group. While discharge planning is important for all heart failure patients, identifying this group is an important consideration for planning more extensive interventions such as case management. Virginia Mason has developed an algorithm to aid in the identification of heart failure patients who are at risk of

complications. The Alliance could promote and disseminate the use of such an algorithm to other institutions in the region.

- WSHA Safe Table Forums: The Alliance will participate with regional hospitals in the Washington Hospital Association Safe Table Forums, and could suggest discharge planning for heart failure patients as a topic for discussion.
- IHI 100,000 Lives Campaign- All hospitals in the state are participating in the 100,000 Lives quality improvement campaign. One aspect of this campaign is the prevention of adverse drug reactions through medication reconciliation at times of transfer of care, such as admission to, or discharge from, the hospital. As an example, Harborview Medical Center is an active participant in this program, and has developed a medication reconciliation form and protocol.
- Personal Health Records: The Heart Disease CIT felt that personal health records, which patients could carry with them or have available online, would facilitate the coordination of their care. They recommend that the Alliance seek ways to foster the development of personal health records for residents of the Puget Sound Region. Examples of ongoing projects in this area include:
    - University of Washington Schools of Nursing and Bioengineering Personal Health Record Project at the Housing Authority in Everett.
    - Pursuing Perfection Program, Bellingham, WA
    - Cleveland Clinic web-based Epic Personal Health Record System http://www.epicsys.com/Company/News.php
- DSHS Medicaid Heart Failure Disease Management Demonstration Project: The Alliance should review the Department of Social and Health Services (DSHS) experience with the Medicaid Disease Management Demonstration Project for heart failure patients, in which a disease management vendor was contracted for service. Process and outcome evaluations performed by the University of Washington failed to indicate a benefit of this program in the population studied. It appeared that costs were shifted from one arena to another, but that there were no overall cost savings. Lessons learned from this demonstration would be helpful as the Alliance moves forward in this area.

Action Plan:

- **Focus on the point of discharge from hospital for high risk patients with heart failure.**
- **Work with hospitals and others to develop disease management programs, medication reconciliation protocols, and personal health records in order to facilitate the coordination of care at this vulnerable interface between inpatient and outpatient settings.**

Appendix 4: Members of the Alliance Heart Disease CIT

Title	First Name	Last Name	Job Title	Affiliation
Dr.	Cindi	Brennan	Assistant Director of Pharmacy, Clinical Associate Professor of Medicine	Harborview Medical Center, UW School of Pharmacy
Dr.	Mark	Doescher	Family Physician	University of Washington
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Ms.	Lindsay	Geyer	Director, Human Resources	Port Blakely Companies
Dr.	Ted	Gibbons	Cardiologist	Virginia Mason
Dr.	Al	Golston	Cardiologist	Group Health Cooperative - Tacoma
Dr.	Rick	Goss	Vice Chair, Clinical Outcome Assessment Program	Harborview Medical Center
Dr.	Mary	Gregg	Cardiac Surgeon, Medical Director COAP at FHCQ	Swedish Medical Center
Dr.	Erica	Oberg	Associate Professor	Bastyr University
Dr.	Ed	Wagner	Director, MacColl Institute	Group Health Cooperative
Ms.	Kristin	Wurz	Senior Director of State Health Alliances	American Heart Association
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Appendix 5: Alliance Heart Disease CIT Staff and Consultants

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