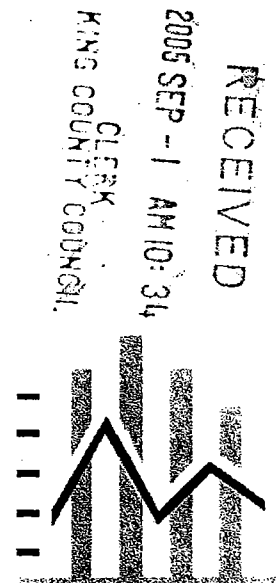


King County Health Reform Initiative

Measurement & Evaluation Design

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September 1, 2005



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Council Motion 12131

Adopted by the King County Council on May 31, 2005

By September 1, 2005, the executive is requested to provide a program evaluation plan for the King County Health Reform Initiative. The plan shall be prepared by a consulting firm and concurrently submitted to council and the Health Reform Initiative policy oversight steering committee. The plan shall include a description of the research design and performance measures that will be used to evaluate the contribution of each program towards the county's overall goals of improving employee/dependent health and reducing employee/dependent health benefit costs. The plan shall include baseline county employee/dependent benefit costs, the approach to data collection and analysis, and the proposed timeline for reporting on achievement of annual targets for the four-year period 2006-2009. If a new evaluation and reporting unit is proposed by the executive and approved by the council, a revised King County Health Reform Initiative Program Charter reflecting this change shall be submitted to council. The program evaluation plan must be filed with the clerk of the council, who will retain the original and will forward copies to each councilmember and to the lead staff for the labor, operations and technology committee and the budget and fiscal management committee.

Chapter One

Background

Terminology

The term “employee medical costs” is used throughout this report to describe the costs King County (hereafter referred to as “the County”) incurs to cover the medical expenses of its employees and their dependents. The use of “employee medical costs” provides a uniform term for the “employee health benefit costs” and “employee benefit cost” terminology included in the Council’s Motion 12131.

On a related note, the County’s definition of dependents includes either spouse or domestic partner (either same or opposite sex) and the children of the employee, spouse or domestic partner. The inclusion of dependents in the discussion is particularly relevant; between July 2004 and August 2005, dependents accounted for 44% of the County’s medical care costs. (Employees were responsible for the balance of 56%.)

The Baseline

At this point, the County has projected that the cost of covering employee and dependent medical care costs will increase from \$144 million in 2005 (the baseline) to \$219 million in 2009.

History

The County is not alone in facing rapidly escalating medical care costs for its employees and their dependents. Businesses and governments across the nation are seeking new and improved methods of helping their employees and their dependents remain in good health, or, for those employees/dependents who are no longer in optimal health, to effectively manage their health care conditions. This has led to increased attention to the development and evaluation of health promotion and health care management interventions that address both employee/dependent health and the associated medical care costs.

This approach is proving effective in other organizations because, many times, a relatively small proportion of employees and their dependents account for a large share of an employer’s medical

care costs. For example, a July 2004 Mercer Human Resources Consulting study indicated that 5% of the members in the KingCare Plan accounted for 58% of the total plan costs and 20% of the members were responsible for 83% of the plan's costs. Correspondingly, 80% of the plan members used only 17% of the resources.

The County realized that the escalating cost of medical care would not abate unless it implemented a comprehensive effort to address some of the important underlying causal factors:

- Heart disease and certain types of cancer are the leading diagnoses among County employees and dependents with the most expensive medical claims
- The high body mass index, high rates of tobacco use, and high blood pressure prevalent in the County population are significant contributors to chronic disease and the associated costs
- An estimated 50% of the risk for conditions common in the County population is related to lifestyle and health behavior (Centers for Disease Control estimates)

In response to this information, the Health Reform Initiative Policy Committee developed a set of policy directions to be used in designing and negotiating benefit plans with the Joint Labor Management Insurance Committee (JLMIC). Two key directives were:

- Improve the health of County employees and their dependents
- Reduce the rate of growth of medical plan costs by one-third (which would produce \$40M in savings for the 2005-09 benefit plan years)

The Health Reform Initiative

In 2004, the County launched an ambitious initiative to address the two inter-related issues of employee/dependent health status and employee/dependent medical care costs. This far-reaching effort, known as the Health Reform Initiative (HRI), comprises an array of interventions to address the health care needs of County employees and their dependents, and to reduce the rate at which the County's medical care costs are increasing.

HRI Goals, Components, and Implementation Timeline

The HRI includes strategies to address six major goals:

1. Assist employees/dependents in identifying their personal health risk factors and actions they can take to reduce and manage those factors
2. Provide active support for addressing health risk factors through nutrition, exercise, cessation of tobacco products, and other activities
3. Improve employee/dependent ability to select appropriate individual health care providers, i.e. increase their knowledge and confidence in identifying a provider with whom they will be comfortable
4. Assist employees/dependents in selecting the most appropriate and cost-effective services
5. Improve organizational alignment, i.e. the extent to which County worksites support good health among employees
6. Improve health care provider performance, i.e. the ability of specialists to deliver efficient services, and the participation of providers in practice improvement efforts

In order to achieve these goals, the HRI has developed specialized program components. These components are organized by target population and intervention type, as follows:

HRI Component	Target Population	Intervention Type
Wellness Assessment/ Personalized Action Plan	Employees/Dependents	Health Promotion
Live Well	Employees/Dependents	Health Promotion Campaigns
Choose Well	Employees/Dependents	Consumer Education Campaigns
Use Well	Employees/Dependents	Health Care Management
Organizational Alignment	Managers/Supervisors	Organizational Development
Provider Performance	Health Care Providers	Quality and Efficiency Improvement

Table 1: HRI Components, Target Population, Intervention Types

From 2005 through 2009, the County will design and implement each of these components through the interventions outlined below. Each of these interventions incorporates a variety of specific program activities delivered by a combination of King County staff and vendors.

Component	2005-09 Interventions
Wellness Assessment/Personalized Action Plan	Wellness Assessment/Personalized Action Plan
Live Well	Eat Smart Campaign Move More Campaign Quit Tobacco Campaign
Choose Well	Choose a Health Provider Campaign
Use Well	Nurse Line Service Disease Management Service Case Management Service
Organizational Alignment	Healthy Workplace Funding Initiative Vending Machine Pilot Project and County-wide Implementation Manager Toolkits and Technical Assistance Policies Leadership Forum and Manager Workshops
Provider Performance	Provider Best Practices Service Specialist Efficiency Service

Table 2: HRI Components and 2005-2009 Interventions

The 2005-09 timeline for the planning/design and implementation of these interventions is as follows:

Component	Launch Date (Program Start)
Wellness Assessment/ Personalized Action Plan	January 2006
Live Well Eat Smart Campaign Move More Campaign Quit Tobacco Campaign	September 2005 September 2005 September 2005
Choose Well Choose a Health Provider Campaign	June 2006
Use Well Nurse Line Service Disease Management Service Case Management Service	December 2004 January 2005 January 2005
Organizational Alignment Healthy Workplace Funding Initiative Vending Machine Pilot Project and County-wide Implementation Manager Toolkits and Technical Assistance Policies Leadership Forum and Manager Workshops	January 2006 April 2004 September 2005 (Policies) May 2006 (Toolkits) May 2005 (Leadership Forum) January 2006 (Manager Workshops)
Provider Performance Provider Best Practices Service Specialist Efficiency Service	January 2005 January 2005

Table 3: HRI Components and Launch Dates

Connection to the Puget Sound Health Alliance

During the development of the HRI, the County also provided leadership in the creation of the recently-formed Puget Sound Health Alliance (hereafter referred to as “the Alliance”). Formed in late 2004, the Alliance is a private non-profit organization that resulted from recommendations by the King County Health Advisory Task Force.

The Alliance is a complementary effort that will enhance the impact of the HRI on the health of the County’s employees and their dependents. While the HRI focuses internally on County employees/dependents, and on building the County as a work environment that supports better health, the Alliance is putting in place a broad-based strategy that will improve the quality of our region’s health care providers and systems, provide tools that will help health care consumers make use of high quality providers and systems, increase the role of prevention in helping consumers stay in good health, and contain health care costs. This mission is captured in the Alliance’s vision, mission, goals, and products and services:

The Alliance’s Vision

A state of the art health care system in our region that consistently achieves healthier people, high quality health care, and affordable costs.

The Alliance’s Mission

To forge a sustainable leadership alliance among patients, providers, purchasers, and health plans to design and implement an innovative, high quality, and affordable health care system in the Puget Sound region.

The Alliance’s Goals

1. Improve the quality of health care provided throughout the five-county region (King, Pierce, Kitsap, Snohomish, and Thurston Counties)
2. Improve the health outcomes for people living and working in the region
3. Slow the rate of increase in health care expenditures experienced by consumers and purchasers of health care throughout the region
4. Improve the ability of the region’s consumers and health care professionals to become

partners in managing health

5. Ensure that evidence-based health care decision-making becomes the norm throughout the region
6. Develop a regional ethic that incorporates collaborative approaches into health care quality improvement efforts. Collaboration and synthesis guide the Alliance's work, rather than duplication of effort and competition

The Alliance's Products and Services

The Alliance's broad focus on providers, consumers, health plans, and purchasers will result in the development and implementation of a variety of products and services that will create the structures and information required to continuously measure, analyze, report, and communicate critical information regarding the performance of our region's health care systems. The Alliance is currently in the process of developing the following products and services:

- A shared repository of clinical guidelines for providers
- A shared repository of tools for consumers/patients
- A data repository/warehouse
- Regional reports on quality and cost
- A regional infrastructure to support quality improvement

Measurement and Evaluation of the HRI

Note: This report addresses the measurement and evaluation of HRI's impact on the health status, utilization of health care services, and medical care costs of employees/dependents participating in the KingCare Plan. Those employees/dependents who obtain their care from Group Health Cooperative will be the focus of a subsequent measurement and evaluation effort.

One essential component of the HRI focuses on the design and implementation of a comprehensive measurement and evaluation system. This system, described in this report, will provide the County with information it needs to assess the effectiveness of each HRI intervention and determine

whether the initiative as a whole is contribution to employee/dependent health and slowing the projected increases in medical care costs.

In addition, the evaluation will provide critical information that will enable the program managers responsible for the HRI interventions to make design improvements during the implementation period. This approach to plan, launch, check, and adjust is a well-established methodology for ensuring that ongoing enhancements in program design occur in order to achieve improved results.

Figure 2 below depicts this process.

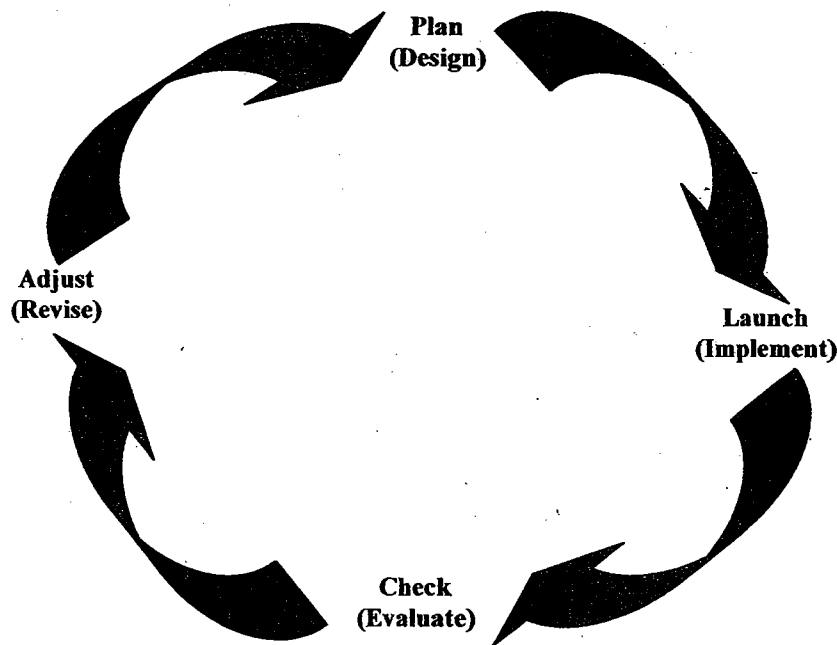


Figure 2: Quality Improvement Cycle

In order to ensure a high quality evaluation design with broad support, the Human Resources Department (HRD) convened a Measurement and Evaluation Steering Committee to work with the consultants retained to develop the evaluation design. The Steering Committee met regularly between May and August 2005. In addition, individual committee members conducted a great deal of work outside the meetings, including reviewing drafts, developing evaluation design materials, and researching data collection methodologies. The Steering Committee membership included the individuals listed below.

Measurement and Evaluation Steering Committee	
Individual	Representing
Karleen Sakumoto	Human Resources Division
Kerry Schaefer	Human Resources Division
Nicholas Maxwell	Budget Office
David Lawson	Budget Office
Chris Haugen	Budget Office
Julie Andrijeski	Finance and Business Operations Division
David Solet	Public Health Department
Steve Helgerson, M.D.	Public Health Department
David Randall	King County Council
Judith Clegg, Jill Marsden, James Andrianos	Clegg and Associates Consulting Team

Table 4: Steering Committee

In addition to the Measurement and Evaluation Steering Committee, a work group met to develop the evaluation designs for the health promotion and consumer education components of the HRI. Work Group participants included Karleen Sakumoto from the Human Resources Division, Syd Phillips and Pam Mitchell from the Health Matters Project (Human Resources Division), David Lawson from the Budget Office, and Judith Clegg and Dawn Hanson Smart from the Clegg and Associates Consulting Team.

Client Privacy Protections

During the design of the HRI interventions, County employees were diligent in building in strict confidentiality safeguards for the health data involved. This commitment not only stems from County policy in general, but also conforms to the legal requirements of the federal Health Insurance Portability and Accountability Act (HIPAA). This legislation requires that client privacy

be protected, particularly with regard to client health information. Section 1173 of the Act requires that each person

who maintains or transmits health information shall maintain reasonable and appropriate administrative, technical, and physical safeguards to ensure the integrity and confidentiality of the information; to protect against any reasonably anticipated threats or hazards to the security or integrity of the information; and unauthorized uses or disclosures of the information. (*Public Law 104-191, Health Insurance and Portability Act of 1996, August 21, 1996*)

The Privacy Rule, another regulation that was adopted in August 2002, created a national standard for HIPAA implementation by protecting all “individually identifiable health information held or transmitted by an organization, in any form or media, whether electronic, paper, or oral.”

The HRI evaluation design builds in the necessary safeguards to ensure that this high level of confidentiality is in place regarding employee/dependent health data. For example, the design incorporates the following privacy assurances:

1. “De-identified data,” i.e. data that has had individual identifying information removed
2. Large sample sizes, i.e. sizes large enough to ensure that survey responses remain anonymous
3. Aggregation of samples, i.e. combining data from smaller samples to ensure the confidentiality of individual responders
4. Informed consent, i.e. employees/dependents will be informed about the purpose of the County’s intent to collect data for measurement and evaluation purposes through the formal notification process for employees/dependents that is currently in place
5. Voluntary participation, i.e. employees/dependents will decide whether or not to participate in the surveys that are part of the design (inclusion of vendor claims data for individual employees/dependents will not be voluntary, but will be collected and “de-identified” as described above)

Appendix A describes key terminology related to the privacy and confidentiality requirements related to the handling of personal health information pursuant to HIPAA. It includes the list of specific information that is protected under HIPAA and how this information needs to be de-identified.

The County will retain a third party data integrator vendor to perform the de-identification of all

claims data before this information is passed on to measurement and evaluation staff and consultants for analysis.

Audiences for the Evaluation Results

There are many audiences that are interested in tracking the results of the HRI. Each of these audiences has a unique role in ensuring that the County plan, implement, evaluate, and adjust the HRI to achieve the maximum benefit possible. During the development of the evaluation design, the Measurement and Evaluation Steering Committee and the Consulting Team considered the interests and roles of these audiences and built in the information each will need to carry out its respective role. Table 5 on the following page summarizes the types of information each audience will need to fulfill its mandated responsibilities.

Entity	Role vis à vis HRI	Required Evaluation Information
King County Executive	Leadership in HRI design, implementation, and adjustments Decisions re: HRI resource allocation Forging connection to Puget Sound Health Alliance	Effectiveness of HRI in influencing cost trends HRI program implementation costs Results for Organizational Alignment interventions
King County Council	Policy direction regarding resource allocation Assessment of overall effectiveness	Effectiveness of HRI in influencing cost trends HRI program implementation costs
Joint Labor Management Insurance Committee (JLMIC)	Integration of HRI evaluation results into negotiation of labor agreements Decision-making re: use of employee surveys for data collection	Effectiveness of HRI in influencing cost trends HRI program implementation costs Results for individual interventions
Human Resource Division Staff	Planning, implementation, and adjustment of HRI interventions Negotiations with vendors	Effectiveness of HRI in influencing cost trends HRI program implementation costs Results for individual interventions
Vendors	Implementation of contracted HRI interventions Provision of data necessary to conduct evaluation	Data indicated in evaluation design
King County Employees and Dependents	Participation in data collection activities included in the evaluation design, e.g., surveys Provision of feedback on interventions Review of evaluation reports	Evaluation design and timelines Confidentiality guidelines Evaluation reports

Table 5: Target Audiences for Evaluation

Chapter Two

HRI Strategies for Change

In order to achieve the health improvement and cost containment goals, the HRI has developed a set of interventions targeting employees and their dependents, health care providers, and managers and supervisors. Each of these interventions is based on a hypothesis that describes how and why the intervention will produce the intended change. The information below lays out the underlying goals, change strategies, and hypotheses for the interventions that comprise the HRI.

Interventions for Employees/Dependents

The HRI has a number of fundamental goals that underlie the employee/dependent interventions that focus on achieving gains in health status. The achievement of these goals drives the types of interventions included in the HRI:

1. To help healthy employees/dependents remain healthy by encouraging them to participate in health promotion activities focused on diet, exercise, and tobacco cessation
2. To assist employees/dependents who are at risk of losing ground on their health, due to obesity, high cholesterol, or other factors, and to arrest this progression through recognition of their health risks and promoting their participation in assisted health improvement activities
3. To enable employees/dependents who have already developed chronic conditions, such as congestive heart failure, diabetes, or coronary artery disease, to avoid further deterioration of their health by effectively managing these conditions through disease management and case management services
4. To provide assistance to employees/dependents who are suffering from catastrophic conditions, such as cancer or head injuries, by coordinating the services they require in order to deal with the severity of their health problems

Given these goals, the HRI starts with a Wellness Assessment/Personalized Action Plan which provides a foundation for employees/dependents to determine their current health status and identify specific actions they can take to improve/maintain better health status. The next level of interventions (Live Well) focuses on supporting employees/dependents in actually building better health habits. The Choose Well interventions provide information and tools employees/dependents can use to select health care providers who can best meet their needs. Finally, the Use Well

interventions provide assistance at the time employees/dependents are actively seeking care. This set of interventions is designed to produce gains in health status for employees/dependents in the short-term, and containment of employee/dependent medical care costs over the long term. Figure 3 below depicts the distribution of components/interventions across the County's employee/dependent population.

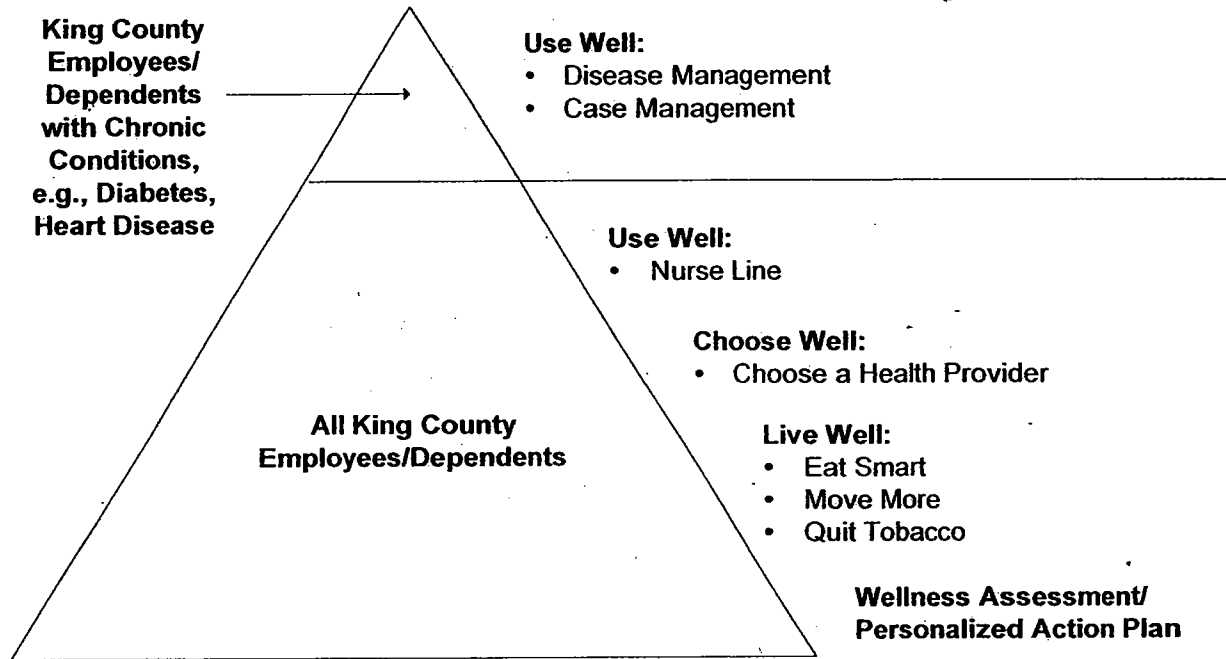


Figure 3: Employee/Dependent Participation in HRI Interventions

Similarly, the medical care cost containment goals of the HRI build on a parallel foundation:

1. Keep as many employees/dependents as possible at low risk (and therefore at lower cost)
2. Limit the deterioration of employees'/dependents' health status (and, therefore, limit the growth in medical care costs)
3. Manage the demand side of health care, i.e. controlling spending by educating employees/dependents about how best to use health care resources

This interactive foundation provides the underpinning for the inclusion of the HRI's different employee/dependent components. By offering employees/dependents the tools they need to maintain and even improve their health, and by providing them with the health information they

need to manage difficult chronic and catastrophic conditions, the HRI is addressing multiple factors that contribute to employee/dependent reductions in health status and the associated increases in the cost of insuring employees/dependents.

All the HRI's employee/dependent interventions are built on a learning model approach to change, i.e. the interventions must provide employees/dependents with information and opportunities for change in a sequence that builds on their continued mastery. Figure 4 depicts this learning model.

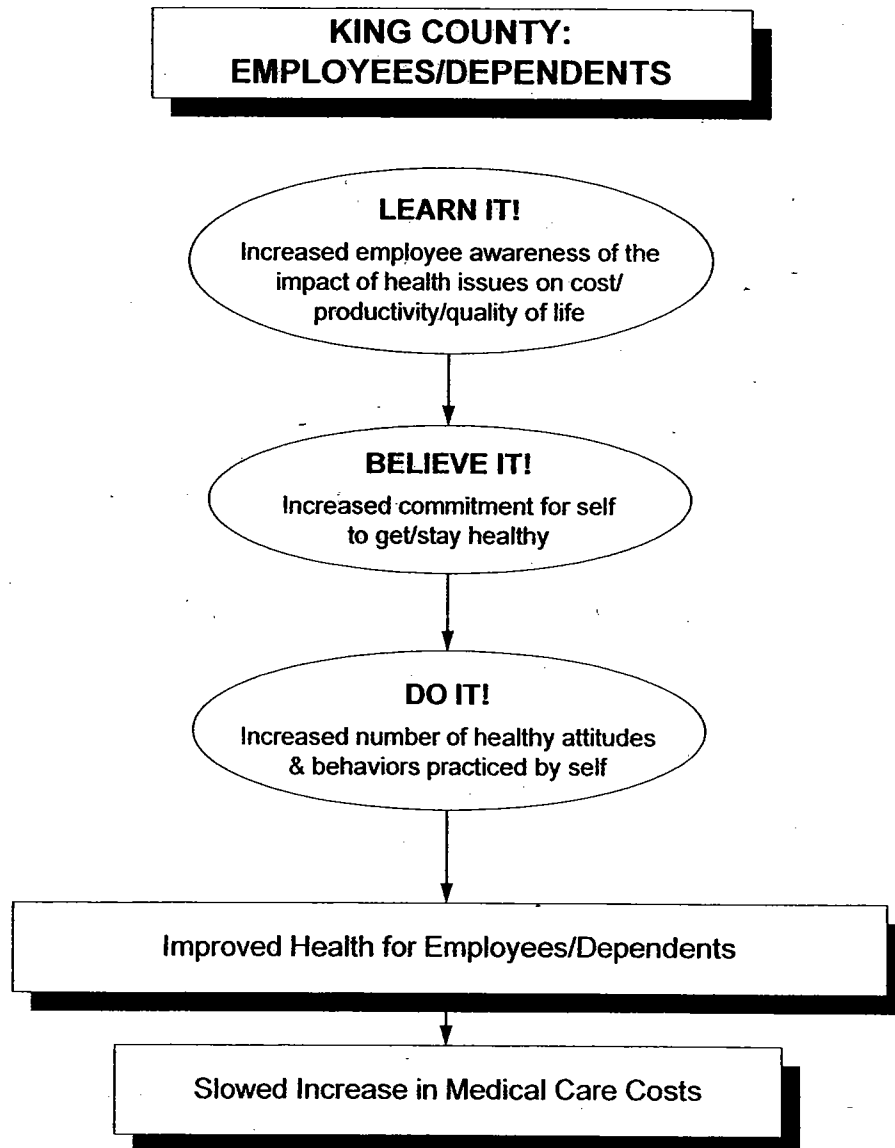


Figure 4: Employee/Dependent Change Model

This learning model is built on the basic hypothesis that employees/dependents will make positive changes over time, provided they have access to information that supports their change process. This model, therefore, builds in progressive levels of information and involvement on the part of employees/dependents, timed in such a way as to enable them to take action and sustain that action over time.

The purpose of designing and implementing a measurement and evaluation system is to test whether or not the hypotheses underlying the program design hold true. In the area of employees and dependents, the evaluation will test the following assumptions:

Intervention	Hypothesis
Wellness Assessment/Personalized Action Plan	<ol style="list-style-type: none"> 1. Employees/dependents will become more active in maintaining/improving their health if they know what personal risk factors they face, e.g., obesity, high blood pressure. 2. Once employees/dependents have learned about the risk factors they face, they will be more motivated to complete a Personal Action Plan as a means of taking action. 3. The provision of a "coach" will make it more likely that employees/dependents will follow through on their Personal Action Plans.

Intervention	Hypothesis
Live Well: Eat Smart	<ol style="list-style-type: none"> 1. Employees/dependents who are more aware of the impact of diet on their health will make changes to move toward a healthier diet. 2. Employees/dependents who have knowledge regarding healthy diet options will be more likely to follow a healthy diet. 3. Following a healthier diet will enable more employees/dependents to maintain, improve, or prevent the deterioration of their health status. 4. The improvement in their diets and health status will reduce the amount of health care services employees/dependents utilize and reduce the associated costs over the short and long term.
Live Well: Move More	<ol style="list-style-type: none"> 1. Employees/dependents who are more aware of the impacts of exercise on their health are more likely to increase their activity level. 2. Employees/dependents who have easy access to options for exercising will be more likely to increase their activity levels. 3. Obtaining more exercise will enable more employees/dependents to maintain or improve their health status. 4. Increased exercise will reduce the amount of health care services employees/dependents utilize and reduce the associated cost over the short and long terms.
Live Well: Quit Tobacco	<ol style="list-style-type: none"> 1. Employees/dependents who have easier access to tobacco cessation products and services, such as nicotine patches and telephone coaching, are more likely to attempt to stop. 2. Employees/dependents who successfully stop using tobacco products will utilize fewer health care services over the short and long term, and will incur fewer costs.

Intervention	Hypothesis
Choose Well: Choose a Health Provider	<ol style="list-style-type: none"> 1. Employees/dependents with a more complete understanding of the factors to consider in choosing a health provider, such as quality rating, special expertise, personal style, will be more likely to select a health care provider with whom they are satisfied. 2. Employees/dependents who have selected a provider with whom they are satisfied are more likely to work cooperatively with their provider to improve their health. 3. Employees/dependents who work well with their providers will become more aware of the relationship between the utilization of health care services and cost, to themselves and to the County.
Use Well: Nurse Line	<ol style="list-style-type: none"> 1. Employee/dependent use of the Nurse Line will assist employees/dependents in choosing the most appropriate and efficient health care services to meet their needs.
Use Well: Disease Management	<ol style="list-style-type: none"> 1. Participation in disease management services by employees/dependents with chronic conditions will reduce complications, increase timely treatment, and promote the most efficient use of health care dollars. 2. Reduction of complications and increased timeliness will reduce the utilization of additional, more costly health services over time, e.g., hospitalizations
Use Well: Case Management	<ol style="list-style-type: none"> 1. Participation in case management services will enable employees/dependents to obtain needed health services without incurring unnecessary costs.

Table 6: Employee/Dependent Intervention Hypotheses

Interventions for Managers/Supervisors

In order for the HRI to prove successful over time, the County must align its organizational practices to support improved health among its employees. This change in philosophy and practice will take time to accomplish. However, without this change, the other employee/dependent interventions may not be as effective.

The underlying goals for aligning the County's organizational practices with the employees' health are clear:

1. To create a workplace that provides active support for employees' investment in improving and/or maintaining their health status
2. To increase employee participation in workplace-sponsored health improvement activities
3. To reduce the ways in which the workplace contributes to the deterioration of employees' health status
4. To address the workplace-related causes of employee health problems, both acute and chronic
5. To address the medical costs associated with preventable deteriorations in health status

The HRI's organizational alignment interventions are built on a learning model that parallels that of the employee/dependent intervention. This model reflects the current research regarding how organizational changes can enhance the effectiveness of employee health promotion and cost containment efforts. Figure 5 on the following page depicts this model.

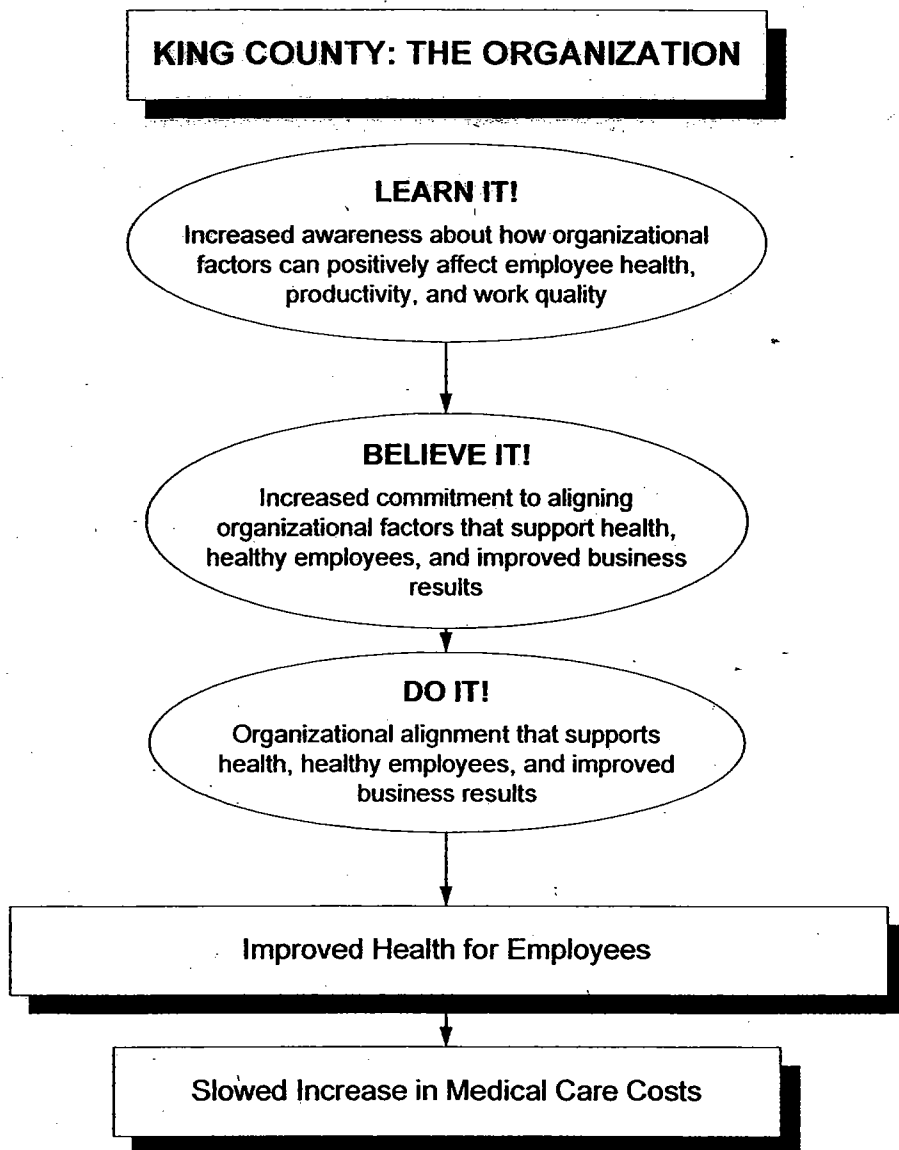


Figure 5: Organizational Alignment Change Model

The hypothesis underlying the organizational alignment component of the HRI is as follows:

Intervention	Hypothesis
Organizational Alignment	1. Manager and supervisor development of worksites that support improved employee health will increase the likelihood that other HRI interventions, such as Eat Smart or Move More, will be successful

Table 7: Organizational Alignment Hypothesis

Interventions for Providers

The HRI's goals related to providers focus on their performance in two respects: quality improvement and specialist efficiency. These two interventions are coming on-line as initial strategies prior to the more complete provider quality improvement systems the Puget Sound Health Alliance will implement over the next several years.

The HRI's goals for provider performance are:

1. To improve the quality of care providers deliver by offering them real-time clinical best practices information, with a particular focus on reducing medication errors
2. To improve specialist efficiency, i.e. to reduce the cost for different courses of treatment

As with the interventions for employees/dependents and managers/supervisors, the HRI interventions for providers have hypotheses that underlie their design:

Intervention	Hypothesis
Provider Best Practices	<ol style="list-style-type: none"> 1. Provider utilization of on-line clinical information regarding employee/dependent health, e.g., information regarding potential medication interactions, will reduce unnecessary medical complications. 2. A reduction in medical complications will avoid potential employee/dependent health care problems, reduce medical care costs, improve comfort, and enhance functionality.
Specialist Efficiency	<ol style="list-style-type: none"> 1. Employee/dependent use of specialists who are deemed "efficient" will reduce the cost of their episodes of care.

Table 8: Provider Intervention Hypotheses

Chapter Three

Evaluation Measurement Design

Linking Program Design, Hypotheses, and Measurement

The program design and hypotheses for each HRI intervention guide the measurement approach by articulating the relationship between the activities provided and the intended results. In this way, the hypotheses provide the research questions for each program that the evaluation should answer. For example, one of the hypotheses for the Wellness Assessment/Personalized Action Plan asserts that “employees will become more active in maintaining/improving their health if they know what personal risks they face, e.g., obesity, high blood pressure.” This leads the evaluator to identify methods for determining whether or not the Wellness Assessment/Personalized Action Plan did, in fact, contribute to this result.

It is important to recognize that many of the HRI’s interventions are taking place alongside other changes in the employees’/dependents’ lives. For example, an employee might review health promotion literature encouraging him/her to “Eat Smart” at the same time s/he learns that a seriously overweight sibling has been diagnosed with diabetes. If the employee begins adhering to a healthier diet, it would be hard to know whether it is because of the “Eat Smart” literature, the news about the sibling, some combination of both, or neither. For this reason, the HRI evaluation will seek to determine whether the HRI interventions contributed to the intended impacts rather than caused them, i.e. contribution vs. attribution.

In addition, a number of employees/dependents will be participating in multiple HRI interventions simultaneously. Once again, this compounds the challenges associated with determining the impact of individual interventions. For example, a person with a chronic heart condition may be participating in Disease Management, Case Management (related to an upcoming hospitalization), using the Nurse Line, changing his/her diet in response to materials distributed through the “Eat Smart” campaign, etc. One of the most important features of the evaluation design is to take into account the multiple HRI interventions underway while analyzing the impacts of individual interventions and the aggregate effects of the multiple interventions combined.

Logic Models and Evaluation Plans

In order to create a clear picture of the relationship among each intervention's program activities, intended impacts, and the measurement methodology, the evaluation design employs logic models and evaluation plans. The logic model describes each intervention's resources, activities, outputs, and outcomes. The evaluation plan includes the accompanying methodology for measuring whether each outcome has been achieved: indicators that make each outcome measurable; the data required to determine to what extent the indicator has occurred; the source(s) of the required data; the types of analysis that must take place to determine what the data mean; and how a baseline will be established to identify the amount of change that has taken place. The logic model describing the overall HRI may be found on the following pages. In addition, the evaluation design includes a complete logic model and evaluation plan for the overall HRI and each of the HRI interventions (see Appendix B).

PROGRAM EVALUATION LOGIC MODEL

OVERALL HEALTH REFORM INITIATIVE: All Interventions

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
<p>Health Reform Initiative Interventions</p> <p>Research on evidence-based approaches to employee/dependent health improvement</p> <p>Research on employer experiences with medical care cost containment</p> <p>HRI annual budget allocations</p> <p>Human Resources Department (HRD) Staff</p> <p>Third Party Administrator</p> <p>Benefit Plan Consultant</p> <p>King County employees and their dependents</p> <p>King County managers and supervisors</p>	<p>HRI Interventions: Wellness Assessment/ Personalized Action Plan</p> <ul style="list-style-type: none"> ▪ Live Well ▪ Eat Smart ▪ Move More ▪ Quit Tobacco <p>Choose Well</p> <ul style="list-style-type: none"> ▪ Choose a Health Provider ▪ Use Well ▪ Nurse Line ▪ Disease Mgt ▪ Case Mgt <p>Organizational Alignment</p> <p>Provider Performance</p> <ul style="list-style-type: none"> ▪ Provider Best Practice ▪ Specialist Efficiency 	<p>All HRI Initiative outputs that provide:</p> <ul style="list-style-type: none"> ▪ A quantitative measure for the level of effort that each intervention produced ▪ Level of effort is measured through the number or amount of each activity performed ▪ The volume of activity that took place for each intervention 	<p>A. Reduced rate and acceleration in rising medical care costs</p> <p>B. Increased ability of employees and dependents to maintain or improve their health status (controlling for health predictors such as demographics, pre-existing conditions)</p> <p>C. Increased employee and dependent responsibility for maintaining and/or improving their health status</p> <p>D. Increased support for positive employee/dependent decision-making and action related to health</p>	<p>A1. Trend in medical care costs compared to forecasted costs</p> <p>A2. Trend in medical care costs per employee compared to forecasts</p> <p>A3. Trend in per-member medical care costs, controlling for medical care cost predictors, compared to forecasts</p> <p>B. Forecasted per-member medical care costs (healthier members are forecasted to have lower costs)</p> <p>C1. Proportion of employees and dependents that report very high or high levels of belief in the importance of actively managing their own health</p> <p>C2. Proportion of employees and dependents that participate in HRI programs</p> <p>D. Number and percentage of employees who express a "satisfied" or "highly satisfied" level in regard to the information and assistance they received through HRI</p>

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DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	All Health Reform Initiative outputs			
INDICATOR	<p>A1. Trend in King County medical care costs compared to forecasted costs</p> <p>A2. Trend in King County medical care costs per employee compared to forecasts</p> <p>A3. Trend in per-member medical care costs, controlling for medical care cost predictors, compared to forecasts</p>	<p>A1. King County expenditure reports</p> <p>A2. Expenditure reports and King County records of employee benefits enrollment</p> <p>A3. Medical and pharmacy claims data</p>	<p>A1. Tabulation, trend, and significance testing</p> <p>A2. Tabulation, trend, and significance testing</p> <p>A3. Risk modeling, tabulation, trend, and significance testing</p>	<p>A1. King County health care costs, 2000-2004</p> <p>A2. Per-employee King County health care costs, 2000-2004</p> <p>A3. Claim data</p>
	B. Forecasted per-member medical care costs (healthier members are forecasted to have lower costs)	B. Claim data	B. Risk modeling	B. Claim data
	C1. Proportion of employees and dependents that report very high or high levels of belief in the importance of actively managing their own health	C1. Survey	C1. Tabulation	C1. 2005 Employee survey
	C2. Proportion of employees and dependents that participate in HRI programs	C2. Program records	C2. Tabulation	C2. 2005/06 Program participation

In addition to each logic model and evaluation plan, there is a set of caveats/comments for each intervention. This section, which can be found at the end of each intervention's evaluation plan, identifies specific methodological issues the County should pay attention to during the implementation of the evaluation. For example, the caveats/comments included for the Case Management evaluation plan include:

1. Comparing diagnostically-related claim costs for members of similar illness burden will require their risk adjustment statistics and episode-of-care grouped claims
2. Cost savings estimates should be net against unit cost program expenses

Considerations for Claim-based Measurement

A number of the HRI interventions rely on claim data for their measurement (Wellness Assessment/Personalized Action Plan, Disease Management, Case Management, and the Nurse Line). These types of data bring up specific evaluation issues that must be addressed in order to ensure high quality measurement results.

In the "laboratory" of health service research, there is no true control group. How can the evaluation compare what happened to what would have happened in the absence of the intervention? The short answer is it cannot. However, the evaluation can take measures to estimate projections of what would have happened and use those projections as a surrogate control group.

Care Management Return on Investment (ROI) Challenges

Savings estimates made in advance of an intervention are often based on ROI figures gleaned from the research literature. When multiplied against program fees proposed by the vendors of care management interventions, a rough estimate of potential savings emerges. Since ROI is the ratio of savings to program costs, this approach can be problematic. When ROI is said to be high, it may be due to below average program fees charged by the vendor or a mistaken accounting of true operating costs. Likewise, overstated savings, or otherwise incorrectly tabulated savings, can drive attractive ROI figures. By keeping track of both the budgeted and actual program operating costs/fees, in addition to measuring cost savings reflected in the health information over time, a more grounded approach is possible. Reporting both ROI and total estimated savings believed to

be linked to a care management intervention provides a more complete picture of the intervention's scale and value.

The HRI Business Case indicates that proper ROI studies require specialized data analytic techniques, as well as dedicated data processing tools. Considerable care is required to define diagnostic-, demographic-, and enrollment-based rules for assigning members to baseline and comparison groups. Overlaying this are considerations for member (non)participation when eligible for a given intervention. Finally, rules establishing special cases of disqualification should be built into group definitions. For example, catastrophic trauma care is usually considered an exogenous event that should disqualify a patient from being included in the baseline and/or comparison populations. Highly specialized data processing tools, such as illness burden statistics (also known as member risk scores), along with software to organize a patient's encounters into clinically-related events over time, are generally required to support intervention evaluation. These tools are discussed more fully in Appendix C.

The HRI Business Case also cites two common methodological errors in tabulating ROI in care management interventions: patient selection bias and mean regression. Selection bias occurs when the measured patients represent unusually high or low levels of utilization, severity, health status, cost, etc., relative to those eligible for the intervention but not taking advantage of it. Mean regression occurs when a patient who was ill during a prior period appears healthier and less risky in the current period. Often the reason for the recovery has little to do with the intervention but is instead caused by the natural course of recovery.

Selection and mean regression effects can be reduced by taking special care in establishing two key comparison groups: the baseline and comparison populations.

The Proposed Approach

The following table depicts two approaches for establishing baseline and comparison groups¹. The evaluation design will generally employ one or both, depending on the specific intervention and the final structure of its underlying claim and program data.

¹ Adapted from Duncan I. "An Actuarial Method for Evaluating Disease Management Outcomes," March 29, 2005, in Actuarial Issues in Care Management Interventions.

Approach 1**Health Information and Claim Data:**

2003 2004 2005 2006 2007 2008 2009

Evaluated In:

2006	Q	B	C				
2007		Q	B	C			
2008			Q	B	C		
2009				Q	B	C	
2010					Q	B	C

B: Baseline Year -- pre-intervention baseline group

Q: Qualifying Year -- used to confirm baseline group membership

C: Comparison Year -- post-intervention comparison group

Note: Each year, some members can be in both the B and C groups

Approach 2**Health Information and Claim Data:**

2003 2004 2005 2006 2007 2008 2009

Evaluated In:

2006		B	C				
2007			B	C			
2008				B	C		
2009					B	C	
2010						B	C

B: Baseline Year -- pre-intervention baseline group

C: Measurement Year -- post-intervention comparison group

Note: Each year, no member can be in both group B and group C

Table 9: Approaches for Establishing Baseline and Comparison Groups

Approach 1 does a better job of reducing the impact of mean regression and selection bias by pre-qualifying membership in both the baseline or comparison groups using historic data profiles.

Approach 2 more closely resembles a scientific cohort study but is in greater need of risk stratification adjustments. In these illustrations, the measured time periods are one year long, but they may be extended as program evaluation stretches through 2010.

Note the practical influence on results reporting of claim lag. Claim lag refers to the period of time after the close of a reporting period that must pass before all services delivered during the reporting period have been incurred as claims, adjudicated, and either paid or denied. So for the calendar year 2003, the evaluator may need to wait several months before all the services rendered as late as December 31, 2003 have been processed, appear in the claim repository, and become available for

study. Extra time may be required for the claim processor to package all claims in the 2003 calendar year for delivery to the analyst. The evaluation design and timeline anticipates that, each May, the claims from the prior calendar year should be available and delivered to the County for analysis.

Global versus Intervention-Specific Evaluation

When an employee/dependent participates in multiple interventions, it can be challenging to attribute accurately the effects of individual interventions on changes in the member's medical costs, quality of care, or health status, etc. Even with complete, claim-based cost data, the interactions among interventions suggested by advanced statistical methods will carry margins of error, could reflect limitations of the methodology itself, or might be confounded by an obvious but often forgotten reality: claim data are artifacts of a service delivery and reimbursement system that is laced with incentives, both well-intentioned and perverse. These data are only surrogates for the employees'/dependents' pre- and post-intervention utilization patterns.

Despite these caveats, there is interest and reason in attempting to measure interaction effects. The County's portfolio of interventions is more far-reaching than the typical purchaser's initiative. As interventions are layered onto one another, one might expect incremental benefits to accrue less rapidly -- and be offset more rapidly by multiple program administration fees and related set-up costs. A thorough measurement and evaluation program should aim to provide some high level guidance on the optimal constellation of interventions.

The Health Reform Initiative Business Case suggests a multivariate analysis to infer interactions between interventions. As cited in Appendix C, intervention-specific measures of cost savings conducted at Washington Mutual frequently exceeded overall cost changes. This double counting is probably the interaction effects of multiple programs. A more nuanced sense of overlap is anticipated by combining intervention-specific analyses with global, multivariate modeling.

Issues around Survey-related Measurement

While the evaluation design calls for some HRI interventions to be measured via claim data, other interventions do not have these types of data and must be measured through other means, usually through surveys of employees/dependents. However, survey data do not provide the same level of validity as claim data. For example, claim data track what health services employees/dependents

have actually used, while survey data rely on self-reporting and are therefore open to a variety of inaccuracies. Nonetheless, surveys are an important component of the evaluation design, as they seek information from employees/dependents that is not obtainable through other means.

In addition, the evaluation design for the interventions related to Health Promotion, Consumer Education, and Organizational Alignment tracks the progression of these interventions through the Learn It!, Believe It!, and Do It! phases. The resulting survey designs used to evaluate the impact of these interventions in achieving this type of change among employees/dependents will change from year to year. (The evaluation designs for the Believe It! and Do It! phases will be developed during 2006 and will guide the focus of the surveys developed during that period.)

In the first year (2006), the surveys will focus on the outcomes in the Learn It! phase and will seek answers to these types of questions:

- Did the information-sharing interventions reach employees/dependents?
- Did employees/dependents gain awareness of the key messages in those campaigns?
- Did the County's managers and supervisors learn about the organizational factors that positively affect employees' health, productivity, and work quality?

In subsequent years, the evaluation and the associated surveys will move toward measuring the longer-term changes related to Believe It! and Do It!, answering the following questions:

- Did employees/dependents increase their commitment to getting and staying healthy?
- Did employees/dependents gain the knowledge and skill they need to make positive health choices?
- Did employees/dependents take action and change behaviors to positively affect their health?
- Did the County increase its commitment to and take the steps necessary to align the organization in ways that support health, healthy employees, and improved business results?

As with the claim data, it is important to establish a baseline for the interventions included in the Health Promotion, Consumer Education, and Organizational Alignment components of the HRI. This baseline should be established via an employee survey no later than the end of 2005.

Evaluation Timeline

The timing outlined above leads to an interval between the initiation of HRI interventions and the ability to make definitive statements regarding their effectiveness. However, while complete evaluation results will not be available immediately, the process will yield important information that policy makers and program staff can use to make adjustments. Generally speaking, we expect to derive *Indicative Findings* in 2006, *Directional Guidance* in 2007, *Early Trends* in 2008, and *Program Trends* by 2009-2010.

Results	Period	Comment
Indicative Findings	2006	Early point estimates too preliminary to signal directional change
Directional Guidance	2007	Initial indications of serial results that could represent emerging trends
Early Trends	2008	Likely emerging trends
Program Trends	2009-2010	Statements of cumulative change, 2005-2009

Table 10: Evaluation Timeline

Appendix D includes a detailed timeline that describes the HRI implementation from 2004 through 2009. The plan, launch, check, and adjust quality improvement cycle is reflected for each intervention. A review of the plan, launch, and check activities for each intervention, combined with the discussion of claim data and survey data timing constraints, demonstrates the underlying reasons for the overall evaluation timeline outlined above.

The evaluation process will produce reports for program managers and policy makers during August of each year. These reports will detail the results of the data analysis included in the evaluation plans for each of the HRI interventions, and for the HRI as a whole.

Implementation Planning

The next steps in the HRI measurement and evaluation process call for the development of a workload management strategy (including a staffing plan with job descriptions, salary levels, and reporting relationships), and a budget (including costs for staff, computing systems, data access, and

data analysis). The completion of these remaining tasks will provide the County with a complete system for measuring the effectiveness of the HRI in achieving its critical health improvement and cost containment goals.

Appendix A

Required Protected Health Information (PHI)

(Adapted from Appendix 1-05-05-010 – Health Information Privacy Definitions, Public Health Seattle & King County)

Protected Health Information (PHI): Individually identifiable health information in any form, whether oral, written, or electronic. This includes Information about a client’s health that is individually identifiable. Identifiable refers not only to data that is explicitly linked to a particular individual, it also includes health information with data items which reasonably could be expected to allow individual identification. This definition excludes health information contained in employment and Family Educational Right and Privacy Act (FERPA) records.

Limited Data Set: PHI that is generally used for research, public health, or health care operations and that excludes direct identifiers, with the following exceptions: *(see also Protected Health Information (PHI) definition)*

- 1) Dates related to a client
- 2) Geographic designations except street or postal address and other unique identifiers not specifically listed as a protected health information data element

De-Identified Data: Any information that does not include any of the 18 elements identified under the “Protected Health Information” (PHI) definition below

The following table describes the difference between PHI that “links” Health Information to an individual and Limited Data Sets.

Item No. (18 total)	Individually identifiable data (PHI Elements that may not be included in de-identified data sets)	Elements that will be removed for a Limited Data Set	Elements allowed in a Limited Data Set
1	Names--includes clients, employers, household members, and relatives	X	
2	All geographic subdivisions smaller than a State, including street address, city, county, precinct, zip code, and their equivalent geocodes ¹	Address information other than →	State, county, city, precinct, and five digit zip code

¹ except for the initial three digits of a zip code if, according to the current publicly available data from the Bureau of the Census, the geographic unit formed by combining all zip codes with the same three initial digits contains more than 20,000 people . The initial three digits of a zip code for all such geographic units containing 20,000 or fewer people are changed to 000.

Item No. (18 total)	Individually identifiable data (PHI Elements that may not be included in de-identified data sets)	Elements that will be removed for a Limited Data Set	Elements allowed in a Limited Data Set
3	All elements of dates directly related to an individual, including birth date, admission date, discharge date, date of death, and all ages over 89 ²		Admission, discharge, and service dates, birth date, date of death, and age (including age 90 or over)
4	Telephone numbers	X	
5	Fax numbers	X	
6	Electronic mail addresses	X	
7	Social Security numbers	X	
8	Medical record numbers	X	
9	Health plan beneficiary numbers	X	
10	Account numbers	X	
11	Certificate/license numbers	X	
12	Vehicle identifiers and serial numbers, including license plate numbers	X	
13	Device identifiers and serial numbers	X	
14	Web Universal Resource Locators (URL)	X	
15	Internet Protocol (IP) address numbers	X	
16	Biometric identifiers, including finger and voice prints	X	
17	Full face photographic images and any comparable images	X	
18	Any other unique identifying number, characteristic, or code ³	Subject to review	Subject to review

Table 1: Elements in Protected Health Information (Per 45 CFR § 164.514)

² Re: birthdates - cannot use any combination (year, month and day, etc., except that such ages and elements may be aggregated into a single category of age 90 or older.

³ Except a code assigned by PUBLIC HEALTH for re-identification purposes (used for Research)

APPENDIX B

PROGRAM EVALUATION LOGIC MODEL

OVERALL HEALTH REFORM INITIATIVE: All Interventions

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
<p>Health Reform Initiative Interventions</p> <p>Research on evidence-based approaches to employee health improvement</p> <p>Research on employer experiences with medical care cost containment</p> <p>HRI annual budget allocations</p> <p>Human Resources Department (HRD) Staff</p> <p>Third Party Administrators</p> <p>Benefit Plan Consultant/Actuaries</p> <p>King County employees and their dependents</p> <p>King County managers and supervisors</p>	<p>HRI Interventions:</p> <p>Wellness Assessment/Personalized Action Plan</p> <p>Live Well.</p> <ul style="list-style-type: none"> ▪ Eat Smart ▪ Move More ▪ Quit Tobacco <p>Choose Well</p> <ul style="list-style-type: none"> ▪ Choose a Health Provider <p>Use Well</p> <ul style="list-style-type: none"> ▪ Nurse Line ▪ Disease Mgt ▪ Case Mgt <p>Organizational Alignment</p> <p>Provider Performance</p> <ul style="list-style-type: none"> ▪ Provider Best Practice ▪ Specialist Efficiency 	<p>All HRI Initiative outputs that provide:</p> <ul style="list-style-type: none"> ▪ A quantitative measure for the level of effort that each intervention produced ▪ Level of effort is measured through the number or amount of each activity performed ▪ The volume of activity that took place for each intervention 	<p>A. Reduced rate and acceleration in rising medical care costs</p> <p>B. Increased ability of employees and dependents to maintain or improve their health status (controlling for health predictors such as demographics, pre-existing conditions).</p> <p>C. Increased employee and dependent responsibility for maintaining and/or improving their health status</p> <p>D. Increased support for positive employee decision-making and action related to health</p>	<p>A1. Trend in medical care costs compared to forecasted costs.</p> <p>A2. Trend in medical care costs per employee compared to forecasts</p> <p>A3. Trend in per-member medical care costs, controlling for medical care cost predictors, compared to forecasts (if feasible)</p> <p>B. Forecasted per-member medical care costs (healthier members are forecasted to have lower costs)</p> <p>C1. Proportion of employees and dependents that report very high or high levels of belief in the importance of actively managing their own health</p> <p>C2. Proportion of employees and dependents that participate in HRI programs</p> <p>D. Number and percentage of employees expressing a "satisfied" or "highly satisfied" level in regard to the information and assistance they received through HRI</p>

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	All Health Reform Initiative outputs	HRD and Vendor data	Data summary	Varies by Intervention
INDICATOR	A1. Trend in medical care costs compared to forecasted costs. A2. Trend in medical care costs per employee compared to forecasts A3. Trend in per-member medical care costs, controlling for medical care cost predictors, compared to forecasts (if feasible)	A1. Expenditure reports A2. Expenditure reports and records of employee benefits enrollment A3. Medical and pharmacy claims data	A1. Tabulation, trend and significance testing A2. Tabulation, trend and significance testing A3. Risk modeling, tabulation, trend, and significance testing	A1. King County health care costs 2003-2004 A2. Per-employee King County health care costs 2003-2004 A3. Claims data
	B. Forecasted per-member medical care costs (healthier members are forecasted to have lower costs)	B. Claims data	B. Risk modeling	B. Claims data
	C1. Proportion of employees and dependents that report very high or high levels of belief in the importance of actively managing their own health C2. Proportion of employees and dependents that participate in HRI programs	C1. Survey C2. Program records	C1. Tabulation C2. Tabulation	C1. 2005 Employee survey C2. 2005/06 Program participation
	D. Number and percentage of employees expressing a "satisfied" or "highly satisfied" level in regard to the information and assistance they received through HRI	D. Survey	D. Tabulation	D. 2005 Employee Survey

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PROGRAM EVALUATION LOGIC MODEL

Wellness Assessment/Personalized Action Plan

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
<p>Health Matters staff to provide initial information preparing employees and families for this program.</p> <p>Third party vendor to provide the following tools and services.</p> <ul style="list-style-type: none"> ▪ Wellness Assessment (WA) tool ▪ Personal Action Plan (PAP) ▪ Telephonic and on-line coaching to support members in completing their action plans ▪ Additional communication materials for promoting the program 	<p>Employee and dependent complete a wellness assessment (on line or paper) and receive a feedback report.</p> <p>Employee and dependent opt into completing their personalized action plans.</p> <p>Program contacts the member and offers on-line and telephonic coaching to keep the member focused and motivated.</p>	<ol style="list-style-type: none"> 1. Number of employees and dependents participating in WA. 2. Number of employees and dependents participating in PAP. 3. Number of employees and dependents reached through telephone, Web requests or alternative formats. 	<p>A. High level of participation to complete WA (in comparison to 60% target).</p> <p>B. Increased member knowledge of personal health risks and recommended actions</p> <p>C. High level of participation in follow-up activities recommended in PAPs.</p> <p>D. Reductions in claims costs over projected increases.</p> <p>E. Members are satisfied with the ease of access and the technical support provided to take the WA/PAP.</p> <p>F. Increased knowledge of resources available to make recommended changes, reduce personal risks, and maintain healthy behaviors.</p>	<p>A. Number and percentage of employees/dependents completing WA</p> <p>B. Number and percentage of employees/dependents reporting increased knowledge of personal health risks and recommended actions, comparing participants and non-participants in WA/PAP</p> <p>C. Number and percentage of employees/dependents who completed the WA who are participating in the recommended intervention programs.</p> <p>D1. Per-member claims costs vs. forecasted</p> <p>D2. Per-member cost deviations from forecast for KingCare members vs. cost deviations for other local employers</p> <p>D3. Claims costs of participants vs. non-participants, controlling for other HRI programs & prior health risk.</p> <p>E. Participation in PAP, reported level of satisfaction with each of access and technical support provided to take the WA/PAP.</p> <p>F. # and % of members reporting that they are aware of resources available to them on making recommended changes, reducing personal risks, and maintaining healthy behaviors.</p>

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	<p>1. Number of employees / dependents participating in WA.</p> <p>2. Number of employees and dependents participating in PAP.</p> <p>3. Number of employees and dependents reached through telephone, Web requests or alternative formats.</p>	Vendor data	Data summary	2006 (1 st yr) program data
INDICATOR	<p>A. # and % completing WA</p> <p>B. # and % of members reporting increased knowledge of personal health risks and recommended actions, comparing participants and non-participants in WA.</p> <p>C. # and % participating in the recommended intervention programs.</p> <p>D1. Per-member claims costs vs. forecasted</p> <p>D2. Per-member cost deviations from forecast for KingCare members vs. cost deviations for other local employers</p> <p>D3. Claims costs of participants vs. non-participants, controlling for other HRI programs & prior health risk.</p> <p>E. Participation in PAP, reported level of satisfaction with each of access and technical support provided to take the WA/PAP.</p> <p>F. # and % of members reporting that they are aware of resources available to them on making recommended changes, reducing personal risks, and maintaining healthy behaviors.</p>	<p>A. De-identified Vendor info.</p> <p>B. Vendor info.</p> <p>C. Vendor info/ De-identified claims data.</p> <p>D1-D3. Vendor info/ De-identified claims data.</p> <p>E. Vendor info/ member survey data</p> <p>F. Vendor info/ member survey data.</p>	<p>A. Trend</p> <p>B. Trend</p> <p>C. Trend</p> <p>D1. Trend</p> <p>D2-3. Multivariate predictive modeling & significance testing</p> <p>E. Trend</p> <p>F. Trend</p>	<p>A. 2006-1st yr.</p> <p>B. 2006-1st yr.</p> <p>C. 2005 per Bus. Case, actual; 2006-1st yr. (Other programs may be added in succeeding yrs.)</p> <p>D1-D3. 2006-1st yr.</p> <p>E. 2006-1st yr.</p> <p>F. 2006-1st yr.</p>

CAVEATS / COMMENTS:

Programs may change year-to-year; new programs added in later years will have different baseline years.

PROGRAM EVALUATION LOGIC MODEL

LIVE WELL: Eat Smart

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
Staff Time Integrated messages and information on the benefits of a healthy diet and how to make healthy food choices Resource materials Decision-making tools	Newsletter articles in the Health Matters newsletter Worksite posters displayed Web-site articles posted Distribution of resource materials and decision-making tools	1. Number of articles produced and distributed 2. Number of worksites that display Eat Smart campaign posters 3. Number of articles posted on website 4. Number of resources provided to make healthy food choices 5. Number of decision tools provided to make healthy food choices	A. Increased awareness of solid nutrition facts and the benefits of good nutrition B. Increase awareness of poor nutrition and health risks C. Increased awareness of how to make healthy food choices	A1. Number and percentage of employees reporting an increased awareness of what constitutes good nutrition A2. Number and percentage of employees reporting increase in awareness of the benefits of good nutrition B. Number and percent of employees reporting an increased awareness of the risks associates with poor nutrition C. Number and percentage of employees demonstrating an awareness of factors to consider in making food choices

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	1. Newsletter archives 2. Work site feedback 3. Web site hits 4. Resource lists archives 5. Decision tools	HRD records, work site check-in	Data summary	9/05 – 9/06 (1 st yr) program data
INDICATOR	A1. Number and percentage of employees reporting an increased awareness of what constitutes good nutrition A2. Number and percentage of employees reporting an increase in awareness of the benefits of good nutrition B. Number and percent of employees reporting an increased awareness of the risks associates with poor nutrition C. Number and percentage of employees demonstrating an awareness of factors to consider in making food choices	Employee surveys, focus groups, feedback from web	Trend analysis of survey results and other data collected from employees	2005 Employee Survey

CAVEATS / COMMENTS:

- This logic model and evaluation plan focus on the Learn It! (the awareness) stage of the Live Well: Eat Smart campaign (2006). The evaluation designs for 2007, 2008, and 2009 will address the Believe It! and Do It! phases and will include outcomes and indicators that measure changes in belief/commitment
- There will be considerable overlap with the education/messages regarding healthier nutrition for the employees/dependents who take the Wellness Assessment and complete the Personalized Action Plan.

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PROGRAM EVALUATION LOGIC MODEL

LIVE WELL: Move More

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
Staff Time Integrated messages and information on the benefits of regular physical activity and how to incorporate physical activity into daily life Resource materials Decision-making tools	Newsletter articles in the Health Matters newsletter Worksite posters displayed Web-site articles posted Stairwell campaign: point of decision prompts Distribution of resource materials and decision-making tools	1. Number of articles produced and distributed 2. Number of worksites where posters are displayed 3. Number of articles posted on website 4. Number of resources provided to learn how to incorporate regular physical activity into daily life 5. Number of building housing County employees where access to stairs is possible	A. Increased awareness of what defines physical activity B. Increased awareness of the relationship between physical inactivity and health risks C. Increased awareness of available resources, tools and information to incorporate into daily physical activity D. Increased awareness of the benefits of stair use	A. Number and percentage of employees reporting an increased awareness of what constitutes physical activity B. Number and percentage of employees reporting an increase in awareness of the benefits of physical activity to their health C. Number and percentage of employees reporting an increased awareness of how to incorporate physical activity into daily life D. Number and percentage of employees reporting an increased awareness that stair use is a beneficial physical activity

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT 1. Newsletter archives 2. Worksite feedback 3. Web site hits 4. Resource lists archives 5. Work site feedback		HRD records, worksite check-in	Data summary	9/05 – 9/06 (1 st yr) program data
INDICATOR A. Number and percentage of employees reporting an increased awareness of what constitutes physical activity B. Number and percentage of employees reporting an increase in awareness of the benefits of physical activity to their health C. Number and percentage of employees reporting an increased awareness of how to incorporate physical activity into daily life D. Number and percentage of employees reporting an increased awareness that stair use is a beneficial physical activity		Employee surveys, focus groups, feedback from web, and anecdotal reports	Trend analysis of survey results and other data collected from employees	2005 Employee Survey

CAVEATS / COMMENTS:

- This logic model and evaluation plan focus on the Learn It! (the awareness) stage of the Live Well: Eat Smart campaign (2006). The evaluation designs for 2007, 2008, and 2009 will address the Believe It! and Do It! phases and will include outcomes and indicators that measure changes in belief/commitment and behavior.
- There will be considerable overlap with the education/messages regarding increasing physical activity for those employees/dependents who take the Wellness Assessment and complete a Personalized Action Plan

PROGRAM EVALUATION LOGIC MODEL

LIVE WELL: Quit Tobacco

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
<p>Staff Time</p> <p>Integrated messages and information on the benefits of quitting smoking and how to how to do so</p> <p>Health plan coverage that includes</p> <ul style="list-style-type: none"> ▪ Telephone tobacco cessation counseling ▪ Access to over-the-counter and prescription NRT (nicotine replacement therapy) including gum, patches, and other drugs 	<p>Newsletter articles in the Health Matters newsletter</p> <p>Worksite posters displayed</p> <p>Web-site articles posted</p> <p>Distribution of resource materials and decision-making tools</p> <p>Active referrals from the Wellness Assessment and other programs to the programs covered in the health plan (Telephone Tobacco quit line and the NRT)</p>	<ol style="list-style-type: none"> 1. Number of articles produced and distributed 2. Number of posters displayed 3. Number of articles posted on website 4. Number of resources provided to help quit smoking 5. Number of decision tools provided to help quit smoking 7. Number of calls to the Quit Line 	<p>A. Increased awareness of the health risks associated with smoking</p> <p>B. Increased understanding of smoking cessation techniques</p>	<p>A. Number and percent of employees reporting an increased awareness of the dangers of smoking</p> <p>B. Number and percentage of employees reporting they know more about smoking cessation techniques than in the past.</p>

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	<ol style="list-style-type: none"> 1. Newsletter archives 2. Poster archives 3. Web site hits 4. Resource lists archives 5. Decision tools 7. Quit Line calls 	HRD records	Data summary	9/05 – 9/06 (1 st yr) program data
INDICATOR	<p>A. Number and percent of employees reporting an increased awareness of the dangers of smoking</p> <p>B. Number and percentage of employees reporting they know more about smoking cessation techniques than in the past.</p>	Employee surveys, focus groups, feedback from web, and anecdotal reports	Trend analysis of survey results and other data collected from employees	2005 Employee Survey

CAVEATS / COMMENTS

1. This logic model and evaluation plan focus on the Learn It! (the awareness) stage of the Live Well: Eat Smart campaign (2006). The evaluation designs for 2007, 2008, and 2009 will address the Believe It! and Do It! phases and will include outcomes and indicators that measure changes in belief/commitment and behavior.
2. There will be considerable overlap with education/messages regarding quitting tobacco in the results for employees/dependents who take the Wellness Assessment and complete the Personalized Action Plan

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PROGRAM EVALUATION LOGIC MODEL

CHOOSE WELL: Choose a Health Provider

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
Information on health provider options Decision-making tool HRD staff	Face to face presentations Distribution of information and decision-making tools Newsletter and website articles	1. Number of people who participate in face to face presentations 2. Number of newsletters distributed 3. Number of web hits on the page that has "Choose a Provider" information and tools	A. Employees have an increased awareness of the criteria to use in selecting and/or changing a health provider B. Employees are satisfied with their provider and are actively involved in decision-making around their health care C. Employees have an increased awareness of the connection between the impact of their health care choices the costs they and the County incur	A. Number and percentage of employees demonstrating awareness of the factors to consider in selecting and/or changing a health care provider B1. Number and percentage of employees who express a "satisfied" or "highly satisfied" level in regard to their choice of health care provider B2. Number and percentage of employees/dependents reporting an active role in provider-related decision-making C. Number and percentage of employees who report a greater awareness of the relationship between their health provider choices and health care costs

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	1. Presentation attendance 2. Newsletter archives 3. Web site hit counter	HRD records	Data summary	6/06 - 6/07 (1 st yr) program data
INDICATOR	A. Number and percentage of employees demonstrating awareness of the factors to consider in selecting and/or changing a health care provider B1. Number and percentage of employees who express a "satisfied" or "highly satisfied" level in regard to their choice of health care provider B2. Number and percentage of employees/dependents reporting an active role in provider-related decision-making C. Number and percentage of employees who report a greater awareness of the relationship between their health provider choices and health care costs	Employee surveys	Trend analysis of survey results	2004 Employee Survey results, 2005 Employee Survey results

CAVEATS / COMMENTS

Resources: Program operating costs should be collected for potential future use and general documentation purposes.

PROGRAM EVALUATION LOGIC MODEL

USE WELL: Nurse Line

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
<p>A. Phone-based staff nurses.</p> <p>B. Program promotion and education efforts.</p>	<p>Nurses are available 24/7 by telephone for nursing consultations (members with health questions or seeking medical care and advice).</p>	<p>Telephone nursing consultations</p>	<p>A. Members receive nursing consultations</p> <p>B. Illness/injury are diagnosed & treated earlier, diminishing costs</p> <p>D. Member satisfaction with nurse line</p> <p>E. Members report they made a different treatment choice after talking with the Nurse Line</p>	<p>A. Number and percentage of members using nurse line</p> <p>B. Risk-adjusted per-member medical care costs for nurse-line callers vs. non-callers</p> <p>C. Member found service useful / met their needs</p> <p>D. Members' treatment choice alterations</p>

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	Telephoned nursing consultations	Vendor data	Data summary	2005 (1 st yr) program data
INDICATOR	<p>A. # and % of members using nurse line</p> <p>B. Risk-adjusted per-member health care costs for nurse-line users vs. non-callers</p> <p>C. Member found service useful / met their needs</p> <p>D. Members' treatment choice alterations</p>	<p>A. De-identified vendor nurse line admin data</p> <p>B. Claims & participation data</p> <p>C. Survey</p> <p>D. Survey</p>	<p>A. Tabulation & Trends</p> <p>B. Outcomes assessment: multivariate modeling of costs checking for impact of nurse line use</p> <p>C. Tabulation & trends</p> <p>D. Tabulation & trends</p>	<p>A. Not Applicable</p> <p>B. Pre-12/04 claims.</p> <p>C. Not applicable</p> <p>D. Not applicable</p>

CAVEATS / COMMENTS

1. Program capital, operating and/or vendor costs should be collected to estimate cost per call.
2. Nurse Line will need to collect certain member demographic and nature-of-call data.
3. Obtaining diagnostically-related claim cost information for members of similar illness burden will require (1) access to episode-of-care grouped claims as well as (2) member risk adjustment statistics.
4. Notes on Indicators B and C: most members will use the nurse line to see if they really need "expensive" interventions like a ER visit; its also possible that members using the nurse line may decide to seek treatment that they may have not sought because they did not think there was a timeliness issue, or they may have known there was a treatment option. We need to capture and analyze information to determine if members made "more appropriate, evidence-based decisions" as a result of nurse consultations.
5. Note on Indicator E: example - member waited until next day to see doc instead of ER visit at night; member decided to make an appointment with doc when they found out a symptom might be more critical than they originally thought.

PROGRAM EVALUATION LOGIC MODEL

USE WELL: Disease Management

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
<p>Vendor-sponsored disease-specific health management and compliance assistance -- initially for diabetes, congestive heart failure, and coronary artery disease</p>	<p>KingCare members with the target diseases are invited to join program to be guided to improve their compliance with prescribed treatments Counseling, guidance, & social support provided to improve compliance</p>	<p>1. Members with diseases identified and invited to enroll. 2. Consultations with program participants</p>	<p>A. Members with target diseases enroll in program B. Increased compliance C. Improved health among participants D. Drop in medical costs related to target diseases & consequences of target diseases E. Participant satisfaction</p>	<p>A1. Number invited to enroll in program A2. Percentage agreeing to participate A3. Percentage staying in program B. Self-reported levels of compliance C1. Self-reported health C2. Forecasted health care costs (risk group) D1. Per-member costs related to target diseases & their consequences vs. forecasted costs D2. Target-disease cost deviations from forecast for participants vs. non-enrolled invitees D3. Target cost deviations from forecast for KingCare members vs. cost deviations for other local employers E. Self-reported satisfaction</p>

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	1. Members with diseases found & invited to enroll. 2. Consultations with program participants	Vendor data	Data Summary	2005 (1 st yr) program data
INDICATOR	A1. Number invited to enroll in program A2. Percentage agreeing to participate A3. Percentage staying in program B. Self-reported levels of compliance C1. Self-reported health C2. Forecasted health care costs (risk group) D1. Per-member costs related to target diseases & their consequences vs. forecasted costs D2. Target-disease cost deviations from forecast for participants vs. non-enrolled invitees D3. Target cost deviations from forecast for KingCare members vs. cost deviations for other local employers. E. Self-reported satisfaction	A1-A3. De-identified vendor program-administration data. B. Survey C1. Wellness Assessment Survey C2. De-identified Medical & Pharmacy claims data D1. De-identified Medical & Pharmacy claims data. D2. De-identified Program-administration data D3. De-identified Medical & Pharmacy data from other local employers E. Survey	A1-A3. Tabulation & trend B. Tabulation & trend C1. Tabulation & trend C2. Multivariate predictive modeling, tabulation, & trend. D1-D3. Outcomes analysis: multivariate modeling & significance testing E. Tabulation & trend	A1.-A3. Not Applicable B. Survey regarding recalled compliance C1. Wellness Assessment C2. Analysis based on de-identified medical and Pharmacy claims from 2003-2004 D1-D3. Analysis based on de-identified medical and Pharmacy claims from 2003-2004 E. 2005 Employee Survey

CAVEATS / COMMENTS

1. B, C1, & E. Survey: A short survey to follow up with employees/dependents who are participating in Wellness Assessment/Personalized Action Plan must be through outside vendor using confidential (de-identified) data; not all Disease Management participants will elect to participate in Wellness Assessment/Personalized Action Plan.
2. Comparing diagnostically-related claim cost information for members of similar illness burden will require members' risk adjustment statistics and episode-of-care grouped claims.
3. Note for D1-D3: in addition to cost, utilization rates for services such as ER visits, admissions, and hospitalization for disease-managed conditions are important.
4. Cost saving estimates should be net against unit program expenses.

PROGRAM EVALUATION LOGIC MODEL

USE WELL: Case Management

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
<p>Predictive algorithms developed and deployed by vendor (Predictive models of the relationship between demographic data and medical and pharmacy claims and later health care costs).</p>	<p>Flag members for outreach related to upcoming or potentially needed health care, e.g., hospitalization</p> <p>Advise members regarding potential health care needs</p> <p>Encourage members to participate in program</p>	<p>1. Member contact and consultation pre- and post-hospitalization</p> <p>2. At-risk member contact and consultation regarding medical screening & physician evaluation in light of estimated risks of disease.</p> <p>3. Disease management services for diseases not covered in the <i>Disease Management Program</i>.</p>	<p>A. Increased member understanding regarding hospitalization</p> <p>B. Improved member health</p> <p>C. Reduced long-run costs</p> <p>D. Improved member satisfaction with need for and decisions surrounding hospitalization(s)</p>	<p>A1. Number and percentage of members flagged for contact</p> <p>A2. Percentage of contacted members participating</p> <p>A3. Percentage of contacted members reporting inappropriate contact</p> <p>B1. Risk-adjusted per-hospitalization length of stay</p> <p>B2. Re-admission rates</p> <p>C1. Risk-adjusted per-hospitalization costs</p> <p>C2. Risk-adjusted post-hospitalization costs</p> <p>C3. Initial change in health care costs</p> <p>C4. Long-run change per-diagnosis/per-episode medical care costs</p> <p>C5. Costs associated with diseases involved in vendor's predictive models</p> <p>D. Number and percentage of employees who express a "satisfied" or "highly satisfied" level in regard to the assistance received regarding their need for and experience with hospitalization(s)</p>

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	<p>1. Member contact and consultation pre- / post-hospitalization</p> <p>2. At-risk member contact & consultation for medical screening & physician evaluation given disease risk.</p> <p>3. Disease management services for diseases not covered in the Disease Management Program.</p>	Vendor data	Data summary	2005 (1 st yr) program data
INDICATOR	<p>A1. Number and percentage of members flagged for contact</p> <p>A2. Percentage of contacted members participating</p> <p>A3. Percentage of contacted members reporting inappropriate contact</p> <p>B1. Risk-adjusted per-hospitalization length of stay</p> <p>B2. Re-admission rates</p> <p>C1. Risk-adjusted per-hospitalization costs</p> <p>C2. Risk-adjusted post-hospitalization costs</p> <p>C3. Initial change in health care costs</p> <p>C4. Long-run change per-diagnosis/per-episode medical care costs</p> <p>C5. Costs associated with diseases involved in vendor's predictive models</p> <p>D. Number and percentage of employees who express a "satisfied" or "highly satisfied" level in regard to the assistance received regarding their need for and experience with hospitalization(s)/A1. # of members flagged for contact.</p>	<p>A1-A2. De-identified program-admin data.</p> <p>A3. Survey</p> <p>B1-B2. De-identified medical/drug claims.</p> <p>C1-C4. De-identified medical/pharmacy claims records</p> <p>C5. Vendor report of diseases in predictive models</p> <p>D. Survey</p>	<p>A1-A3. Tabulation & Trend</p> <p>B1. Tabulation & trend of risk-adjusted LOS.</p> <p>B2. Tabulation & trend of risk-adjusted re-admission rates</p> <p>C1 - C2. Tabulation & trend of 1-2) risk-adjusted per- and post-hospitalization costs</p> <p>C3 - C4. Multivariate model of health costs, controlling for impact of other HRI programs and prior health risks</p> <p>C5. Tabulation and significance tests</p> <p>D. Tabulation & trend</p>	<p>Not Applicable</p> <p>B1 - B2. Analysis of claims data from 2003-2004.</p> <p>C1-C5. Analysis of claims data from 2003-2004.</p> <p>D 2005 Employee Survey.</p>

CAVEATS / COMMENTS

1. Comparing diagnostically-related claim cost for members of similar illness burden will require their risk adjustment statistics & episode-of-care grouped claims.
2. Cost saving estimates should be net against unit program expenses.

PROGRAM EVALUATION LOGIC MODEL

Organizational Alignment

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
Staff time (e.g. Health Matters Forum and Partners, HRI Program Managers, HRI Communicatio ns Director, Health Promotion Leadership Committee, etc.) Policy projects and related programming (e.g. education, county-wide healthy promotion programs, and toolkits) Policy projects	Leadership Forum and manager workshops	<ol style="list-style-type: none"> Number of directors, deputy directors, and their managers who participate in the Leadership Forum(s) Number of managers who attend manager workshops 	<p>A. Increased awareness about how organizational factors can positively affect employee health, productivity, and improved business results.</p> <p>B. Increased commitment to aligning organizational factors that support health, healthy employees, and improved business results</p> <p>C. Increased action among King County leadership and management to support health, healthy employees, and improved business results</p>	<p>A. Number or percentage of King County leaders who can articulate the benefits of supporting health and healthy employees</p> <p>B1. Number of requests for assistance in reviewing policies, processes, standard operating procedures, etc. to assess whether they support health and healthy employees</p> <p>B2. Number of recommendations for changes or improvements from mechanisms such as committees whose purpose is to research policies, processes, standard operating procedures, etc.</p> <p>C1. Number of revised policies, processes, standard operating procedures, etc. that were modified to support health and healthy employees</p> <p>C2. Number of employees who report that positive changes have been implemented in their work locations to support health and healthy employees</p>
	Manager toolkits & technical assistance policies	<ol style="list-style-type: none"> Number and appropriateness of toolkits suggested, requested, and/or created Number and appropriateness of technical assistance policies suggested, requested, and/or created (technical assistance policies provide policy guidelines for implementing health promotion programming) 	<p>D. Increased awareness among managers that there are resources available to help them support health and healthy employees</p> <p>E. Increased usage of manager technical assistance policies and toolkits</p>	<p>D. Number of toolkits and technical assistance policies downloaded</p> <p>E. Number of managers who report that they use technical assistance policies and toolkits to make changes in the work environment to support health and healthy employees.</p>
	Vending machine pilot project and county-wide implementation	<ol style="list-style-type: none"> Healthier snacks in vending machines 	<p>F. Increased demand for healthier snacks in vending machines at King County work locations</p>	<p>F1. Increased sales of healthier snacks in vending machines</p> <p>F2. Number and percent of vending machines at King County locations that have healthier snacks</p>
	Healthy Workplace Funding Initiative	<ol style="list-style-type: none"> Department participation in Healthy Workplace Funding Initiative funds 	<p>G. Departments use funds available through the Healthy Workplace Funding Initiative for tailored worksite health promotion programming</p>	<p>G1. Number and percent of departments that apply for Health Workplace Funding Initiative Funding</p> <p>G2. Number of vendors requested and/or contracted to implement tailored worksite health promotion programming</p>

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DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	<ol style="list-style-type: none"> 1. Leadership Forums attendance 2. Manager workshop attendance 3. Web site downloads, Manager toolkit archive 4. Web site downloads, technical assistance policy archive 5. Vending machine sales 6. Healthy Workplace Funding Initiative applications 	HRD records Vending machine vendors	Data summary	5/05-5/06 (1 st yr)
INDICATOR	<p>A. Number or percentage of King County leaders who can articulate the benefits of supporting health and healthy employees</p> <p>B1. Number of requests for assistance in reviewing policies, processes, standard operating procedures, etc. to assess whether they support health and healthy employees</p> <p>B2. Number of recommendations for changes or improvements from mechanisms such as committees whose purpose is to research policies, processes, standard operating procedures, etc.</p> <p>C1. Number of revised policies, processes, standard operating procedures, etc. that were modified to support health and healthy employees</p> <p>C2. Number of employees who report that positive changes have been implemented in their work locations to support health and healthy employees</p>	<p>A. Survey (provided at Leadership Forums)</p> <p>B1-2. HRD records</p> <p>C1-2. HRD records and Survey (provided at Manager workshops)</p> <p>D: Web site reporting data</p> <p>E: Survey (provided at Manager workshops)</p> <p>F1-2. Vendor data; HRD/facilities records</p> <p>G1-2. HRD records</p>	Trend year-to-year	<p>A. 5/05 survey at forums</p> <p>B1-2. 1st yr records</p> <p>C1-2. 1st yr records and surveys at manager workshops</p> <p>D. 1st yr web data</p> <p>E. 1st yr manager forum surveys</p> <p>F1-2. 1st yr vendor data/facilities records</p> <p>G1-2. 1st yr HRD records</p>

CAVEATS / COMMENTS

The additional organizational alignment intervention will include additional projects over time; these will require the creation of a logic model and evaluation plan in order to evaluate their effectiveness.

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PROGRAM EVALUATION LOGIC MODEL

PROVIDER PERFORMANCE: Provider Best Practices:

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
Data-mining service that informs physicians and can improve clinical quality and patient safety.	Weekly data-mining of claims history, current medical claims, pharmacy, physician encounter reports, and patient demographics. Data is compared with evidence-based treatment recommendations to find possible errors, gaps, omissions, and commissions in care. When data indicates that there may be an opportunity to improve care, outreach is made to the treating physician based on the apparent urgency of the situation.	1. Number of claims reviewed 2. Number of errors, gaps, omissions, and commissions identified 3. Number of outreach contacts with treating physicians	A. Outreach contacts with physicians take place B. Lower per-episode costs for episodes that prompted a contact C. Improved physician willingness to consider such advice	A1. Number of contacts A2. Number of contacts per member and per member seeking treatment B. Deviation of treatment cost from forecasted costs for episodes that prompted contacts C. Physicians' evaluation of the contacts

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT				
INDICATOR	A1. Number of contacts A2. Number of contacts per member and per member seeking treatment B. Deviation of treatment cost from forecasted costs for episodes that prompted contacts C. Physicians' evaluation of the contacts	A1-A2. Program administration data & plan enrollment counts B. Claims data & program administration data C. Physician survey	A1-A2. Tabulation & trend B1. Multivariate predictive modeling of duration, based on pre-program data. Tabulation & significance tests of episodes with contacts compared to model estimates C. Tabulation & trend	A1-A2. Not applicable B. Analysis of claims data from 2002-2004 C. Not Applicable

CAVEATS / COMMENTS

- Program fees should be collected for potential future use and general documentation purposes.
- Do physicians opt in and opt out? Or does the program just contact each physician showing up in the claims data?
- Aetna, through its recently acquired affiliate Active Health Management, will be expected to provide evidence of cost savings associated with improved provider practice patterns.

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PROGRAM EVALUATION LOGIC MODEL

PROVIDER PERFORMANCE: Specialist Efficiency

RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	INDICATORS
A. Identified and established network of efficient specialists B. Program promotion and education efforts.	Passively encourage members to utilize these via passive directory flags and promotional activities.	1. Efficient specialists manage members' episodes requiring specialty care. 2. Members are aware of efficient specialists and self-directed data resources.	A. Below average cost per episode of care for members seeing efficient specialists. B. Improved member program awareness.	A1. Claim cost savings for members utilizing efficient specialists vs. those who do not. A2. Volume of episodes of care managed by efficient specialists over time. B1. Number and percentage of employees/dependents reporting awareness of efficient specialist concept and self-directed information resources.

DATA:	REQUIRED	ACQUISITION	ANALYSIS	BASELINE
OUTPUT	1. Efficient specialists manage members' episodes requiring specialty care. 2. Members are aware of efficient specialists and self-directed data resources.	Vendor data	Data summary	2005 (1 st yr)
INDICATOR	A1. Claim cost savings for members utilizing efficient specialists vs. those who do not. A2. Volume of episodes of care managed by efficient specialists over time. B1. Number and percentage of employees/dependents reporting awareness of efficient specialist concept and self-directed information resources. A1. Prior year's actual average episode cost by clinical episode category for events being managed by efficient specialists. A2. Prior year's actual count and rate of episodes of care being managed by efficient specialists.	A1. Past claim costs for complete episodes for members seeing efficient providers, and corresponding episode costs for matching clinical events linked to members not seeing efficient providers. A2. Past counts of complete episodes for members seeing efficient providers, and corresponding episode counts for matching clinical events linked to members not seeing efficient providers. B1 Member awareness surveys.	A1. Comparison of average cost per episode for members seeing efficient specialists vs. those who did not. A2. Comparison of volume of episodes for members seeing efficient specialists vs. those who did not. B1. Trend analysis of member awareness.	A1. Prior year's actual average episode cost by clinical episode category for events being managed by efficient specialists. A2. Prior year's actual count and rate of episodes of care being managed by efficient specialists. B1. Prior year's actual awareness levels.

CAVEATS / COMMENTS

- "Seeing efficient providers" means that the clinical episode of care in question was attributed to specialists deemed efficient in advance.
- Historic trend results should be updated across all years every year, since past episodes may become completed as the claims lag comes due.
- Program participation costs should be collected and documented.
- We probably would not be able to see the cost savings in just County members who see efficient specialists. However, we would want to see calculations Aetna has done to determine the efficiency of each provider vs. all other providers.

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Appendix C

Learning and Observations from Aetna and Washington Mutual

Background and Challenges

King County is embarking on an unusual and ambitious program to measure the performance of health reform programs. Though it may seem odd, few purchasers currently measure and evaluate vendor-sponsored programs.

- Aetna reports that, while they make standard reports available to customers implementing their programs, only one current customer has requested detailed, underlying program activity data. Still, Aetna has expressed interest in accommodating the County's requests, with strong interest in collaborating on a measurement program for their Aexcel specialist network offering. Whether standard or custom, Aetna charges a fee for data extraction services.
- One pioneering purchaser is Washington Mutual, who is committed to using technology and data to develop optimal health and benefit programs for its members. One of their goals is to link information from their Health Information Database to member behavior, in order to guide program offering enhancements (their current capacity does not allow this). Member behavior would be inferred from nurse line activity, WebMD research patterns, human resources records, etc. In the future, claim data and inferred behavior would be linked using encrypted member identifiers and observing minimum group size requirements for presenting descriptive statistics. The role of survey data at Washington Mutual is limited.

Performance measurement for cost reduction and behavior modification programs is challenging for at least two reasons. First, medical care costs and trends would not be stable without interventions. Second, medical care costs are the result of probability-related processes. For example, even if the probability of a specific catastrophic event occurring was known, the number of these events would still fluctuate from year to year. For these and other reasons, there is no completely reliable baseline against which to compare costs.

- This challenge will be heightened for King County, which will attempt to tease apart the impacts of multiple intervention programs. Aetna, seconded by Mercer, has underscored these challenges. Washington Mutual indicates considerable difficulty in parsing the impact of separate programmatic changes, implemented both concurrently and sequentially. Their experience is that documenting return on investment is often confounded by such factors.

Technical Infrastructure and Data

Health plans typically establish dedicated servers, multiple processors, at least several gigabyte of RAM, and multiple terabyte of storage space to support performance measurement efforts based on large claim and eligibility repositories. Given that health plans typically store and analyze data for hundreds of thousands of members, the County's computing platform appears to be more than sufficient for its more limited population.

- Washington Mutual's Health Information Database is currently supported on a personal computing platform, and contains about one year's worth of claim and eligibility data for about 100,000 members, including dependents.

Critical data files used in performance measurement and evaluation are the detailed claim extract and member eligibility history. The claim extract should feature the totality of health care delivered to the studied population: professional care, facility-based care (both outpatient and inpatient), ancillary services (laboratory, radiology, durable medical equipment, etc.), and pharmacy activity. It is essential to include pharmacy claims in the extract, even if this requires working with additional entities such as pharmacy benefit management firms.

- Aetna offers services for obtaining standardized claims records to self-insured entities. Where needed, County staff will work with Aetna and their pharmacy benefit manager to procure the critical pharmacy claims. As mentioned earlier, both standard and custom data extraction are fee-based services through Aetna.

Other valuable data, if existing and available, are the detailed program-specific activity records underlying interventions like Case Management, Disease Management, Nurse Line, and so forth.

- Aetna maintains data at varying levels of detail in a dedicated repository known as ETUMS. County staff have established contact with the ETUMS database staff at Aetna and are discussing specialized data extracts with them.

County staff and consultants explored a strategy to save time and effort in data acquisition involving an initiative called Care-Focused Purchasing (CFP). CFP was originally a Mercer-led undertaking to pool claim and eligibility data from all major health plans across the country. Measures of provider quality and efficiency would be derived from this very large database of service activity. Because a comprehensive and standardized data extraction specification has been developed by CFP for all health plans, there was hope that the County might simply request the subset of data related to its members from Aetna. However, this strategy is not feasible because of uncertainties regarding health plan participation and the time required to assemble the CFP data extracts.

Research Tools

Health services researchers often employ specialized tools and algorithms to reorganize administrative claim data into more clinically meaningful information. One tool, risk scoring, quantifies the total burden of illness carried by a member. These statistics are used to forecast future health costs and consumption, and they can be an aid in evaluating disease management programs.

Another tool, episode grouping, examines highly fragmented claim and eligibility data to identify the onset and resolution of clinically distinct events over the course of patient care. For example, a heart attack will have a variety of services related to hospitalization, outpatient care, professional services, drug prescriptions, and follow-up testing. To see the impact of a program aimed at reducing the costs of heart attacks, all of the encounters that were part of the heart attack episode must be bundled for analysis. In short, the episodic perspective permits a more fair evaluation of cost, utilization, duration, and provider involvement for clinically similar circumstances.

County staff and consultants are still exploring how best to address risk scoring and episode grouping within the County's Measurement and Evaluation framework.

- Washington Mutual, in the current iteration of their home-grown Health Information Database, does not employ either risk scores or episode grouping. They report having outgrown their current database arrangement and are now requesting proposals for outsourced health database services and support. In

their proposal request, Washington Mutual will be requesting both risk scoring and episode grouping. Health plans routinely employ both tools, so it may be possible to obtain risk scores and episode data from Aetna.

Appendix D

King County Health Reform Initiative Measurement & Evaluation Timeline

	2004 - 2005												2006														
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Set Up King County M/E Technical Infrastructure																											
Use King County Overall/Multivariate Model								P	P	L																	
Live King County Eat Smart																											
Live King County Move More																											
Live ASO/Insurer Quit Tobacco*																											
Choose Vendor Wellness Assessment*																											
Choose King County Choose a Health Provider																											
Use ASO Nurse Line*																											
Use ASO Disease Management*																											
Use ASO Case Management*																											
King County Organizational Alignment																											
Use ASO Provider Best Practice*																											
Use ASO Specialist Efficiency*																											

* De-identified vendor data may be linked with Evaluation Measurement claim repository.

LEGEND: P = Plan L = Launch
C = Check A = Adjust
= Program or intervention is operational

	2007 BUDGET SEASON												2008 BUDGET SEASON											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Set Up King County M/E Technical Infrastructure																								
Use King County Overall/Multivariate Model																								
Live King County Eat Smart	A	A	P	P	P								A	A	P	P	P							
Live King County Move More	A	A	P	P	P								A	A	P	P	P							
Live ASO/Insurer Quit Tobacco*																								
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Choose King County Choose a Health Provider	P												P											
Use ASO Nurse Line*																								
Use ASO Disease Management*																								
Use ASO Case Management*																								
Use King County Organizational Alignment	A	A	P	P	P								A	A	P	P	P							
Use ASO Provider Best Practice*																								
Use ASO Specialist Efficiency*																								
* De-identified vendor data may be linked with Evaluation Measurement claim repository.	LEGEND: P =Plan L =Launch C =Check A =Adjust =Program or intervention is operational																							

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		BUDGET SEASON												
		2009	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Set Up	King County M/E Technical Infrastructure													
Use	King County Overall/Multivariate Model													
Live	King County Eat Smart	A	A	P	P	P								
Live	King County Move More	A	A	P	P	P								
Live	ASO/Insurer Quit Tobacco*													
Choose	Vendor Wellness Assessment*													
Choose	King County Choose a Health Provider	P												
Use	ASO Nurse Line*													
Use	ASO Disease Management*													
Use	ASO Case Management*													
	King County Organizational Alignment													
Use	ASO Provider Best Practice*	A	A	P	P	P								
Use	ASO Specialist Efficiency*													
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