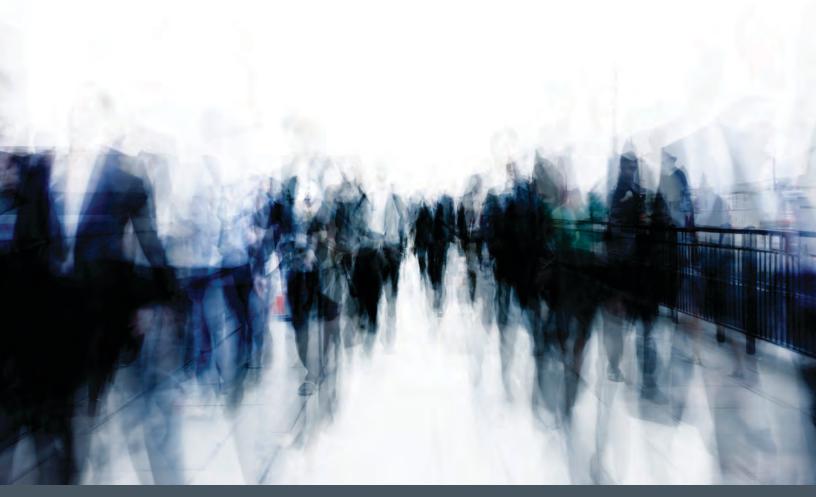
# Science to improve a changing health care system

2009 ANNUAL REPORT







Eric B. Larson, MD, MPH Executive Director, Group Health Research Institute

n health reform at our nation's doorstep, today's policy makers, clinicians, and patients all want the same thing: trustworthy, timely evidence for making important decisions about health and health care.

While the nation's new health reform law holds tremendous promise, the challenges ahead are enormous. American health care ranks low among industrialized countries for quality and efficiency. Meanwhile, like other countries worldwide, we face the difficulty of caring for an aging population as costs of care continue to soar. At the same time, we must find ways to provide care and coverage for more than 30 million Americans who previously had no health insurance. The need for high performing health care systems has never been greater.

Group Health Research Institute (GHRI) is responding with unprecedented results to opportunities that address these needs. Our Institute's success in 2009 is evident in grant dollars awarded, new research projects launched, and academic papers published. Meanwhile, recognition is growing that Group Health's research priorities are aligned to find pragmatic solutions to problems bearing down on our country's health care system. This recognition comes in part from our Institute's role within Group Health Cooperative, an integrated health plan that provides both care and coverage. Like our nation, Group Health must

address problems holistically balancing efforts to improve quality, lower cost, and sustain access for its population.

At GHRI, scientists work closely with Group Health care-delivery system leaders to make the organization a "learning health care system"—a living laboratory for innovation. Researchers help design demonstration projects, draw information from those demonstrations, evaluate the data. and provide feedback, spurring further improvement and innovation. In this way, Group Health becomes a place where practice influences science while science influences practice.

#### Our medical home run

One prominent example is GHRI's ongoing evaluation of Group Health's patient-centered medical home model of primary care. Using rigorous scientific methods, GHRI researchers determined in 2009 that after two years, patients at its prototype clinic had higher quality of care and fewer emergency visits and hospitalizations than controls, resulting in significant net savings. Plus, both patients and clinicians were more satisfied with care.

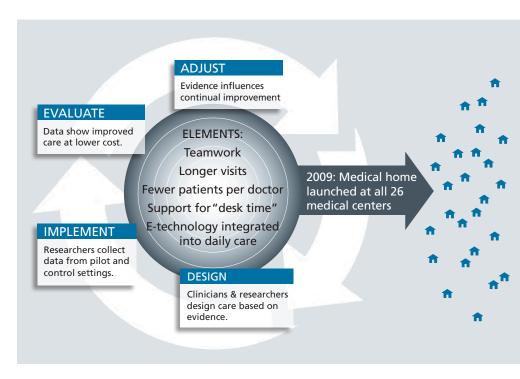
Based on these findings, Group Health recently spread the model to all 26 of its medical centers, attracting interest from policy makers and health care leaders nationwide who see primary care revitalization as key to reform.

#### Comparing what works in the real world

GHRI's success also comes from its track record in comparative effectiveness research (CER)—science that determines which tests, treatments, and preventive actions work best. Unlike research conducted in highly controlled experimental settings, CER takes place in populations that accurately reflect widespread community practice. CER is crucial to both improving value and reducing cost of care, and it figured prominently in the 2009 federal economic stimulus package. Beyond its traditional funding from the National Institutes of Health and others, GHRI won more than \$15 million in additional funds from federal stimulus awards mostly for research in cancer screening and the prevention and treatment of cancer, heart disease, depression, and musculoskeletal problems. GHRI also received stimulus grants for another national priority: building research capacity through large multi-site collaborations and networks—in our case, the HMO Research Network.

GHRI's progress provides a strong foundation from which to meet the challenges ahead. Our teams are engaged and ready to provide evidence that matters to those improving care for Group Health members and the nation.

"Based on the medical home findings, Group Health recently spread the model to all 26 of its medical centers, attracting interest from those who see primary care revitalization as key to reform."



The medical home continues to improve in Group Health's "learning health care system"

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## Seeking solutions to health problems

that matter most Examples of Group Health Research Institute's success in 2009 reflect its focus on preventing and treating our nation's most serious health concerns.

## 1. Heart disease

#### \$76 billion to treat

With colleagues at GHRI and the University of Washington (UW) Cardiovascular Health Research Unit, Bruce Psaty, MD, PhD, studies ways to translate Human Genome Project findings into clinical practice. Their aim: targeting use of common heart medications to improve safety and efficacy.



## 2. Cancer

#### \$70 billion to treat

Several Group Health researchers won federal stimulus grants to compare ways to screen for colorectal and cervical cancer and to image and treat breast cancer. Some are also examining environmental and genetic factors that can cause cancer of the pancreas.

Diana Miglioretti, PhD, and team are investigating the link between increased exposure to high-end radiology and cancer risk.



## 3. Hypertension

Beverly Green, MD, MPH, leads a \$1.2 million research project on the long-term effectiveness and costs of a Web-based communication intervention that her earlier randomized trial proved to improve blood

## 4. Lung diseases

\*From chronic lower respiratory diseases

\*\* Asthma and chronic obstructive pulmonary disease

Jennifer McClure, PhD, launched a \$2.2 million study to develop and evaluate tailored, Web-based programs to help smokers quit. Her team's ongoing projects include studies of genetics' role in treatment and nicotine addiction. They are also studying other motivational interventions for smoking cessation, such as encouraging smokers to address multiple risks.

## 5. Diabetes

72,000 U.S. deaths per year

Research shows intensive programs focusing on diet and exercise can prevent or delay diabetes. Katherine Newton, PhD, won a \$2 million grant to test the feasibility of delivering such interventions by phone.

David Arterburn, MD, MPH, won a \$1.2 million grant to study obesity and depression care.

## 6. Alzheimer's disease and dementia

72,000 U.S. deaths per year

#### \$24.6 billion to treat

The longest-running study of its kind, Group Health and UW's Adult Changes in Thought (ACT) project won a \$12 million grant to continue research on delaying and preventing dementia—including Alzheimer's disease. The team found adequately treating high blood pressure could reduce dementia risk by protecting blood vessels in the brain.

## 7. Influenza and pneumonia

Group Health's Vaccine and Treatment Evaluation Unit at GHRI was the first of eight such federally funded facilities nationwide to test the HIN1 (swine) flu vaccine in 2009. Studies continue on vaccines for infectious diseases in people of all ages.



Group Health pediatrician John Dunn, MD, MPH, is a GHRI affiliate investigator, working on childhood immunization research.

## 8. Mental health problems

33,000 U.S. suicides per year

#### \$56 billion to treat

Greg Simon, MD, MPH, was awarded a \$1 million grant to research more effective depression treatment The study will use electronic medical records to track how individuals respond to various treatments

In previous research, Group Health scientists showed that phone-based therapy works well for treating depression. In 2009, they found that it's also cost-effective.

## 9. Osteoarthritis and other joint diseases

Painful osteoarthritis can disturb sleep, leading to more health problems. Group Health researchers are testing whether focused counseling to address both pain and sleep can help patients to function better.

A study of opioid use for chronic pain linked higher doses to overdose risk.

## 10. Back problems

#### \$32 billion to treat

Group Health researchers found acupuncture can help soothe chronic back pain, but the relief may not come from penetrating the skin or tailoring treatment. Meanwhile, studies continue of alternative



treatments for muscle and bone problems—including a major new study of massage for neck pain.

Michael Von Korff, ScD, received a \$500,000 grant to study patients' transition from acute to chronic back pain.

> Sources: For all data on deaths other than suicide, Centers for Disease Control and Prevention. For data on suicides, National Institute of Mental Health. For data on costs to treat Alzheimer's disease, Alzheimer's Association. All other cost data, Agency for Health Research and Quality

## At Group Health Research Institute: Science is a team sport

roup Health Research Institute scientists study health problems not from an ivory-tower distance, but among real patients getting care in everyday clinical settings. This patient-centered approach often requires team work—among scientists from various disciplines, with clinicians, and with patients and their families. Here are three examples: One study tests treatment of depression and diabetes to improve outcomes for both conditions; another looks at treating childhood obesity in a family context; and the third asks whether giving people tools to make care decisions based on their own preferences and values raises satisfaction and lowers surgery rates.

#### Diabetes with depression:

## Is combined treatment key?

Gary Riggins was a big guy with bad knees and out-of-control diabetes when he had a heart attack. His health problems seemed overwhelming before he joined Group Health's TEAMCare study. But, after getting treatment for depression and learning to control his blood glucose levels, he's now taking charge of his health.



Group Health member Gary Riggins says regular coaching from nurse care manager Sue Reudebusch helped him take control of his diabetes.

The 58-year-old from Port Orchard credits his TEAMCare nurse care manager, Sue Ruedebusch, for coaching him with step-by-step goals that have added up to a healthier new life.

"She explained what the sugar was doing to my body," he says. "It took the

whole year of gentle cajoling" for him to give up what he calls his "addiction" to several cans of soda a day. He learned that managing his diet and medications were key to getting better.

Ms. Ruedebusch also helped him understand that depression treatment might help him overcome many obstacles to controlling his diabetes.

Mr. Riggins' experience illustrates an enormous challenge. Most U.S. health care costs go to caring for the 133 million Americans with chronic conditions, a number that's rising. Almost half have at least two chronic illnesses. One of those chronic illnesses is often depression, which can hinder a person's ability to manage... everything.

"Depression can magnify effects of diabetes on the body, mind, and behaviors," explains Elizabeth Lin, MD, MPH, a TEAMCare researcher and Group Health family physician. "It can make the body produce more cortisol and adrenaline, or cause more inflammation resulting in clogged arteries. It can make you feel helpless and hopeless, decreasing motivation to take better care of your health."

Research shows that programs work best when parents and their children make changes together. Group Health is testing designs for such programs.

"This study is the culmination of more than twenty-five years of collaboration by the UW and Group Health to improve care for patients with chronic diseases including depression," says Wayne Katon, MD. He is the vice-chair of Psychiatry and Behavioral Sciences at the UW and principal investigator of the TEAMCare study, funded by the National Institute of Mental Health.

Typical medical practice is not organized to combine care for depression and other chronic disease, says Michael Von Korff, ScD, a GHRI senior scientist and co-principal investigator in this study, which enrolled 214 patients from 2007 to 2009.

TEAMCare gives patients with depression and other chronic illnesses a care manager, like Ms. Ruedebusch, to see and call them often and coordinate treatment with others on the patient's care team. This role is

instance, to reduce their blood glucose level, a common goal in diabetes.

"Patients sometimes have a broken record in their brain, telling them 'I can't do anything about my diabetes," Lin says. The care manager concentrates on one-step-at-a-time goals that the patient has chosen, a process called "treat to target" in the study lingo.

"Treat-to-target goals help patients to focus on achievable goals, overcoming their sense of hopelessness," Dr. Von Korff says.

Study results clearly show significant progress in lowering patients' blood pressure, glucose, and cholesterol levels—and improving depression outcomes.

"When a patient-centered program addresses both physical and mental

"Depression can magnify the effects of diabetes on the body, mind, and behaviors."

vital to the changes that Drs. Katon, Lin, and Von Korff believe could cost-effectively revolutionize help for patients with multiple conditions. The care manager monitors patients' mental and physical health often, adjusting medication to reach specific goals. The care manager helps the patients choose realistic goals—for

problems, patients can work with their doctors to get chronic illness and depression under control," Dr. Lin adds. "So they can enjoy the activities that make their life worth living."



Overweight children:

## Is family-based approach the answer?

Health Educator Amy Mohelnitzky has heard every excuse. But as a Family Wellness Program coach, she has found a new incentive for parents to break old habits regarding food and exercise: their children.

The study is looking for answers to a perplexing problem: how to help children at risk for being overweight or obese. Since the 1970s, childhood obesity (defined as a BMI at or above the 95th percentile for children of the same age and sex) has more than tripled, according to the Centers for Disease Control and Prevention. About 12 to 18 percent of 2- to 19-year-olds are obese, putting them at higher risk for high blood pressure, high cholesterol, and Type 2 diabetes. And obese children and teens are more likely to become obese as adults.

"Parents tell me, 'I don't want my child to deal with what I've had to face," says Ms. Mohelnitzky. That concern motivates them to join the Group Health Research Institute study, which uses a rigorous, evidence-based intervention for parents and children in a real-world setting.

"We ask both the parents and children to set goals," explains Associate



The Family Wellness Program helps families find healthier approaches to meals and physical activity.

"We aim for realistic and meaningful. We say, 'Yes, this is difficult, and you can do it."

Investigator and pediatrician Paula Lozano, MD, MPH, who leads the pilot program, funded by the GHRI Development Fund and Group Health Permanente. "Evidence shows programs are most effective when parents make changes alongside their children."

Families choose the program after referral from their family doctor because at least one parent and one 6to 12-year-old child are overweight.

The 12-week pilot program begins with Group Health pediatrician Sarah Rudnick, MD, counseling each child and parent to learn behavioral skills and set their individual action plan. Next come group meetings with Ms. Mohelnitzky, a nutritionist, and a physical therapist, along with phone or e-mail follow-up.

Accountability is the key. "Parents say that knowing we'll meet with them weekly helps them stick to their plans," says Dr. Lozano. "We also give feedback: Is their plan too ambitious? Too modest to make a difference? We aim for realistic and meaningful. We say, 'Yes, this is difficult, and you can do it."

Fun and games engage the kids, including busting through boxes that represent their own barriers to routine healthy eating and physical activity. Once the real barriers to change are broken, families can look forward to a healthier future.



Group Health member Wanda Current discusses the risks and benefits of treatment for knee pain with orthopedic surgeon Thomas Stoll, MD. In shared decision making, patients' preferences and lifestyle help drive the decision.

Surgery's pros and cons:

## How do we help patients choose their best option?

Shedding more light on the risks and benefits of certain surgeries could boost patients' satisfaction and might change how often those procedures are done. That's the theory behind a Group Health Research Institute study on "shared-decision making," among the largest underway in the nation.

Led by Associate Investigator David Arterburn, MD, MPH, and launched in 2009, the two-year study focuses on 12 "preference-sensitive conditions." Such conditions, including knee and hip osteoarthritis, have two or more treatment options, but little evidence to support one choice over another.

Group Health Orthopedics Chief Charles Jung, MD, a physician participating in the study, believes in helping patients weigh the pros and cons of potential treatments. Unlike an emergency appendectomy, for example, joint replacement rarely requires a quick decision. And with no proof that surgery is best for everyone with osteoarthritis, each patient's preferences and lifestyle should drive the decision—along with their understanding of the risks and benefits of each choice for their particular situation.

Some patients prefer living with limited joint pain to spending months recovering from a surgery, says Dr. Jung. Others embrace the rehabilitation process, in hopes of eventually becoming pain free. Being informed can help patients cope with rehabilitation better, he contends.

To help guide patient–provider communication in shared decision making, the study encourages doctors to recommend using "decision aids." These can be brochures, DVDs, and Web tools that provide balanced, evidence-based information, along with real patients' stories of their experiences.

The Commonwealth Fund, the Foundation for Informed Medical Decision Making, and the Group Health Foundation are funding the study, with regularly updated decision aids donated by Health Dialog, a Boston company.

By April 2010, more than 4,000

Group Health patients had viewed the DVDs. In a preliminary survey of about 400 patients, 72 percent deemed the aids excellent or very good at helping them understand their treatment choices. And 69 percent rated the aids as very good or excellent at helping them prepare to talk with their care providers.

The research team continues collecting data on how shared decision making affects patient and provider satisfaction and surgery rates. Dr. Arterburn thinks the process might make some procedures rarer and others more common.

"We have a need—and obligation to educate our patients to be wise consumers of health care," Dr. Arterburn says.

#### SHARED DECISION MAKING:

#### Group Health is testing DVDs on 12 topics

- Hip osteoarthritis
- Knee osteoarthritis
- Coronary artery disease
- Benign prostatic hyperplasia
- Prostate cancer
- Uterine fibroids
- Abnormal uterine bleeding
- Ductal carcinoma in situ (a type of early-stage breast cancer)
- Other early-stage breast cancers
- Breast reconstruction
- Spinal stenosis
- Herniated disc

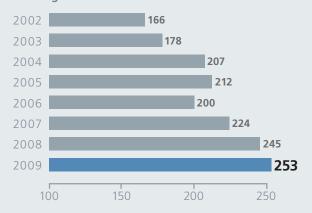
#### **Grant dollars awarded** in millions as allocated by year



#### Number of grants submitted



#### **Active grants**



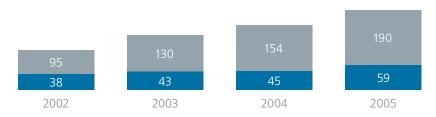
#### GHRI revenue by sponsor



2009 A year of impact, growth, and success in our scientific programs.

#### **Publications in peer-reviewed journals**





## Selected major findings:

A sample of articles Group Health researchers published in 2009

#### **Aging**

Nonsteroidal anti-inflammatory drugs (NSAIDs) do not prevent Alzheimer's disease or other forms of dementia. Risk of dementia in the study's very elderly population was 66 percent higher among heavy NSAID users than among people who used little or no NSAIDs. (Neurology)

#### **Cancer control**

Giving smokers biologically based evidence of smoking-related disease risk or physical impairment appears not to boost their motivation to guit smoking during the first month after this intervention. (Nicotine & Tobacco Research)

#### **Behavior change**

Radiation doses from common CT procedures vary widely and are higher than generally thought, raising concerns about increased risk for cancer. (Archives of Internal Medicine)

Rates of atypical ductal hyperplasia, a known risk factor for breast cancer, have recently declined in the United States, suggesting the drop may be linked to significantly reduced use of postmenopausal hormone therapy. (Cancer Epidemiology, Biomarkers & Prevention)

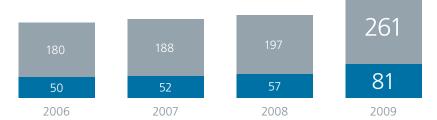
#### **Cardiovascular health**

A case-control study of Group Health members found that angiotensinconverting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs) may lower the risk of atrial fibrillation in patients without heart failure, not only in those with it. (American Journal of Hypertension)

#### **Health information technology**

Among 15,000 Group Health patients with diabetes, frequent use of Group Health's secure e-mail with clinicians was associated with better glycemic control and increased outpatient utilization. (Diabetes Care)

Group Health Research Institute set new records on nearly all performance measures in 2009. We disseminated our scientific findings through a record number of peer-reviewed journal articles. Partnering with research administration staff, our scientists submitted a record number of grant applications and now have more active grants than ever before. Plus, we significantly increased our actual and projected future revenue stream from externally sponsored research awards.



#### **Health services**

After one year, the patient-centered medical home model of primary care at Group Health benefits both patients and providers at no additional cost. Comparing patients in the pilot to controls, patients in the medical home had 29 percent fewer emergency room visits and 11 percent fewer hospitalizations. The model also scored higher for patient experience, provider work experience, and several indicators of quality of care. (American Journal of Managed Care)

The largest review of the Chronic Care Model (82 studies) found that redesigning medical practices according to the model generally improved health care and helped patients control a range of chronic diseases. (Health Affairs)

#### Obesity

Health care costs are 1.6 times higher for people with metabolic syndrome—a set of conditions that raises risk of diabetes, heart disease, and stroke—than for people without the syndrome. (Metabolic Syndrome & Related Disorders)

#### **Drug safety**

Higher opioid dose was linked to overdose risk in chronic pain patients. Those who received higher opioid doses were nine times more likely to overdose than were those receiving low doses. Still, most of the overdoses occurred among patients receiving low to medium doses, because prescriptions at those levels were much more common. (Annals of Internal Medicine)

Taking popular cholesterol-lowering statin drugs does not lower the risk of pneumonia. (British Medical Journal)

#### Women's health

Stopping hormone therapy for one to two months decreased breast density slightly, but did not decrease recall rates in women having screening mammograms. (Annals of Internal Medicine)

Compared with never-abused women, women abused by intimate partners had an almost six-fold increase in clinically identified substance abuse, a more than three-fold increase in receiving a depression diagnosis, a three-fold increase in sexually transmitted diseases, and a two-fold increase in lacerations. (Archives of Internal Medicine)

#### Financial Statement

Other sponsor revenue

**Total expenses** 

Net gain/loss

Federal grant and contract revenue

#### Revenue

Group Health Cooperative support	2,736,213
Total revenues	\$39,134,896
Expense	
Personnel expenses	\$21,545,753
Other expenses	17,589,143

\$32,155,140

\$39,134,896

\$0

4,243,543

#### Research Advisory Board 2009

The Group Health Research Advisory Board assesses the quality, innovation, and relevance of Group Health research in enhancing quality of care and consumer value.

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