

## For Doing More and Better with Less: Improving Efficiency and Effectiveness

### Multicare Health System

#### Urinary Tract Infection Reduction Program

Multicare Health System used a bundle approach to identify urinary tract infections (UTI) present on admission and prevent foley-related UTIs acquired during hospitalization. In light of the current CMS standards, this issue has become an economic priority, as well as a clinical one. After initial success in one trial unit, Multicare expanded the use of standardized urinary management to six adult inpatient units and are currently implementing the program in its critical care units. Pre-intervention, there were 77 UTIs over 40,274 patient days for a rate of 1.91 per 1,000 patient days over a period of nine months in two units and six months in two other units. Post-intervention identified 31 UTIs over 44,329 patient days for a rate of .70 per 1000 patient days over the same time frame. The intervention provided a 273% improvement ( $p=0.000000342$ ). A dramatic reduction in the most frequently occurring HAI (healthcare-associated infection) UTIs was achieved utilizing Six Sigma methods. Increased detection of UTI present on admission and reduced foley-related UTI were accomplished using the Foley UTI Bundle. Non-foley UTI was decreased by using increased attention to patient hygiene. In the last 12 months during implementation, this program has eliminated 187 UTIs, saved 1,300 patient days and avoided \$1.5 million dollars in added costs, none of which would be reimbursed under the new CMS rules.

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### Hall Health Primary Care Center

#### Acute Pharyngitis

The Hall Health Primary Care Center (Hall Health) project focused on improving the efficiency and cost-effectiveness of diagnosing and treating patients with sore throat. At baseline, providers received no specific direction about the most efficient care processes or diagnostic and therapeutic approach. Using evidence-based practice guidelines, Hall Health defined areas for quality improvement, including specific measures, and developed and implemented a local practice guideline for pharyngitis. This had a significant impact on the choice of diagnostic tests. The practice moved away from throat cultures and “double testing” to a best practice of rapid strep antigen testing only under specified circumstances and use of cultures only in special situations. This reduced the number of tests per case and the cost per case of diagnostic testing. Lastly, the project had significant positive impacts on treatment utilization. Although it was thought there might be a rise in follow-up encounter rates, instead the project achieved a significant reduction in overall utilization of services.

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## For Innovations in the Use of HIT

### Harborview Medical Center

#### Hospital Acquired Pressure Ulcer Tracking Program

Patient suffering and excess costs of care associated with hospital acquired pressure ulcers (HAPU) have fueled national and local initiatives to address prevention. Caring for the most critically injured patients in the state provided Harborview with special challenges. Some lifesaving interventions or transfer conditions for these vulnerable patients actually created increased risk for HAPU development. The medical center undertook a focused study of the risk factors inherent in its specialty patient populations. By targeting interventions associated with specialty risks, Harborview was able to reduce or eliminate several specialty risk-based HAPU and add to the body of evidence regarding HAPU. The medical center simultaneously implemented daily incidence tracking, deployed Certified Wound Care Nurse (CWCN) experts, tracked prevention metrics and conducted an intensive HAPU review guided by an innovative algorithm. Harborview was able to reduce the overall rate of HAPU, increase detection of HAPU in early stages and eliminate stage III and IV HAPU development for the past three quarters.

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### Virginia Mason Medical Center

#### Health Maintenance Module

A clinical information team, including input from front-line clinical providers, enhanced an electronic medical record tool called the Health Maintenance Module (HMM) via innovative programming to expand the number of screening tests, strengthen the alert rules and document preventive care for patients at Virginia Mason Medical Center in Seattle. As a result, the rate of providing on-time, age appropriate, gender specific and evidence-based preventive health interventions to an adult primary care patient population increased 25% from baseline in less than six months. Standard care processes have been modified and training accomplished on how to utilize the HMM at each point of care with patients, including during the appointment-making process by patient access specialists at the centralized call center, rooming process by medical assistants, and episodic/planned assessments by nurses, physicians and/or pharmacists. By using the Health Maintenance Module, Virginia Mason staff can now reliably offer evidence-based, preventive healthcare intervention such as cancer screenings, vaccinations and monitoring of chronic disease management/progression.

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## For Improving Access and Delivery of Care

### Tacoma General Hospital

#### Low-Risk Chest Pain Process Improvement Initiative

In 2006, Tacoma General formed a Low-Risk Chest Pain Task Force to address the lack of a standardized evidence-based approach for low-risk chest pain evaluation in the emergency department (ED), a growing hospital observation admission rate of chest pain patients, limited information and data regarding low-risk chest pain patient care, limited resources and availability for cardiac stress testing services, a poor return rate of emergency department outpatient referrals for stress testing and the need to increase the confidence level in safely discharging low risk-chest pain patients directly from the ED. The task force was comprised of physician and allied health representatives from the ED, inpatient hospitalist services, cardiology, preventive cardiology, nuclear medicine and quality/data services. Based on task force recommendations, a Low-Risk Chest Pain Process Improvement Initiative was developed. Literature was researched and reviewed and an evidence-based Low-Risk Chest Pain Guideline was developed, approved and distributed, a treadmill stress test system was obtained and placed in the ED area, and 21 volunteer ED nurses were trained and met competencies to perform treadmill stress tests during the evening and nighttime hours with supervision provided by hospitalists. Process improvement data was gathered and analyzed. The first year of implementation has resulted in a reduction in chest pain hospital admissions (observation and inpatient) for the first time since 2004. Nearly 250 stress tests have been performed in the ED prior to patient discharge. Survey responses received from ED physicians have been overwhelmingly positive, and the initiative received recognition for its innovation and accomplishments from the Chest Pain Society of America during its 2008 Chest Pain Center Accreditation Survey. After one year of initiative implementation, task force members and physicians are confident that this initiative has helped to improve patient care and supports better utilization of healthcare resources for low-risk chest pain patients.

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## For Patient and Family Centered Care

### Providence St. Peter Hospital

#### AMI Door to Dilation

The Centers for Medicare & Medicaid Services and Joint Commission standard for Acute Myocardial Infarction (heart attack) Door to Dilation is performance within 90 minutes. Providence St. Peter Hospital's (PSPH) AMI Door to Dilation performance from July to December 2006 was 65% (mean=94 minutes, standard deviation=47 minutes). In May 2007, PSPH launched an improvement project with representation from all internal departments involved in the process, the two community cardiology groups, Thurston County Medic One and two Six Sigma Belts from Operational Excellence. PSPH followed the DMAIC cycle (Define, Measure, Analyze, Improve, Control) using Lean Six Sigma methods. The hospital implemented some improvements

along the way, with final implementation occurring on 12/14/07. During the project's sustain period from 12/14/07 to 12/31/08, PSPH increased its performance to target from the baseline of 65% to 98%. The mean improved from 95 minutes to 56 minutes and the standard deviation was reduced from 47 minutes to 21 minutes.

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## For Improving Care Transitions

### Virginia Mason Medical Center

#### Resident Handoffs

Leadership, engagement and standardized communication expectations by internal medicine and general surgery residents at Virginia Mason Medical Center's Graduate Medical Education department showed >25% improvement and >90% satisfaction in the transfer of patient information between providers at shift-to-shift handoffs. Residents created templates to reflect the essential background and current clinical information, and to document important clinical concerns/plans of care, as well as direction for key if/then events to the physician assuming night-coverage responsibility for patient care. Variation was reduced, expectations were strengthened and collected examples provided the basis of an orientation program used to on-board new interns. Contributing to the organization's quality and patient safety initiatives strengthened residency training and promoted future quality improvement involvement. Finally, the impressive efforts to improve a paper-based handoff process garnered the attention of hospital leadership, resulting in the funding for programming to automate the handoff content within a computerized order entry and electronic medical record system.

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#### Thank you to the 2009 award panel for their time and care in reviewing applications:

**John Arveson** Director, Professional Affairs, Washington State Medical Association

**Myron E. Bloom, MD, MMM** Medical Director, Rural Healthcare Quality Network

**William Boyan, MD, MHA** Associate Medical Director, Qualis Health

**Susie Dade, MPA** Director, Quality Improvement & Administration, Puget Sound Health Alliance

**L. Gordon Moore, MD** Faculty, Institute for Healthcare Improvement

**Jan Norman, RD, CDE** Chronic Disease Prevention Unit Director, Washington State Department of Health

**Marc Pierson, MD** Regional Vice President of Quality and Clinical Information, St. Joseph Hospital

**Lynn Tungseth** Director of Quality, Providence Senior & Community Services

**Carol Wagner** Vice President of Patient Safety, Washington State Hospital Association

**Ed Wagner, MD, MPH, FACP** Director, MacColl Institute for Healthcare Innovation at the Center for Health Studies, Group Health Cooperative