Health Services Research Town Hall

April 14, 2011

12:30-5:00 p.m.
Oak Amphitheater
Emory Conference Center and Hotel

Refreshments to the Left in the Oak Break Area
Restrooms to the Right
Health Services Research Inventory

David S. Stephens, MD
Stephen W Schwarzmann Professor of Medicine
Vice President for Research, WHSC
Emory University
Health Services Research

“is a multidisciplinary field of inquiry, both basic and applied, that examines the use, costs, quality, accessibility, delivery, organization, financing, and outcomes of health care services to increase knowledge and understanding of the structure, processes, and effects of health services for individuals and populations.” (IOM, 1995)
Health Services Research

“is the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations.” (Academy for Health Services Research and Health Policy, 2000)
Health Services Research

“examines how people get access to health care, how much care costs, and what happens to patients as a result of this care. The main goals of health services research are to identify the most effective ways to organize, manage, finance, and deliver high quality care; reduce medical errors; and improve patient safety.” (Agency for Healthcare Research and Quality, 2002)
Comparative or Clinical Effectiveness Research

“conduct, support, or synthesize research that compares the clinical outcomes, effectiveness, and appropriateness of items, services, and procedures that are used to prevent, diagnose, or treat diseases, disorders, and other health conditions.”

ARRA 2009

JAMA 2010:303:2182-2184
Health Services Research

- Health Policy and Management
  - National and International Health Policy

- Health Outcomes
  - Quality, Safety, Satisfaction
  - Clinical Effectiveness Research

- Health Economics
  - Value, Resources, Technology

- Health Delivery
  - Access, Models

- Health Education and Practice
Other Health Services Research Topics

- Behavioral Research in Health
- Community/Health Care networks
- IT Infrastructure and Connectivity
- Primary Care Oriented Research
- Health Ethics
- Health Disparities
# 80 + Faculty with Health Services Research Interests / Funding

<table>
<thead>
<tr>
<th>Name</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Kathleen Adams</td>
<td>Benjamin Druss</td>
<td>Jessica Holmes</td>
<td>Stephen Pitts</td>
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<tr>
<td>Susan Bauer-Wu</td>
<td>Sandra Dunbar</td>
<td>Marcia Holstad</td>
<td>John Puskas</td>
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<tr>
<td>Loida Bonney</td>
<td>Ingrid Duva</td>
<td>Debra Houry</td>
<td>Arshed Quyyumi</td>
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<td>Arlene Chapman</td>
<td>Chris Flowers</td>
<td>Maeve Howett</td>
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<td>Elena Conis</td>
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<td>Nadine Kaslow</td>
<td>Leslee Shaw</td>
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<td>Hannah Cooper</td>
<td>Julie Gazmararian</td>
<td>Jeffrey Koplan</td>
<td>Iris Smith</td>
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<tr>
<td>Carlton Dampier</td>
<td>Ron Goetzel*</td>
<td>Joseph Lipscomb</td>
<td>Nancy Thompson</td>
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<td>Lyndsey Darrow</td>
<td>Victoria Green</td>
<td>Reynaldo Martorell</td>
<td>Kenneth Thorpe</td>
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<td>Neal Dickert</td>
<td>Patricia Griffiths*</td>
<td>Clair Null</td>
<td>Kevin Ward</td>
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<td>Jessica Holmes</td>
<td>Solomon Ofori-Acquah</td>
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<td>Kim Rask</td>
<td>Viola Vaccarino</td>
<td>Venkat Narayan</td>
<td>Larry Phillips</td>
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<td>Theresa Gillespie</td>
<td>Peter Wilson</td>
<td>Alex Isakov</td>
<td>Ken Brigham</td>
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</table>
# 80 + Faculty with Health Services Research Interests / Funding

<table>
<thead>
<tr>
<th>Martha Rogers</th>
<th>Richard Rheingans</th>
<th>Claire Sterk</th>
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<tr>
<td>Bob Lyles</td>
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<td>Rebecca Pentz</td>
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<td>Greg Berns</td>
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<td>Michael Goodman</td>
<td>Michael Kramer</td>
<td>Martha Rogers</td>
<td>Jim Curran</td>
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<td>Ya Wang</td>
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<td>Edmund Becker</td>
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<td>Richard Saltman</td>
<td>Joel Saltz</td>
<td>Steven Culler</td>
<td>Barbara Stoll</td>
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# Health Services Research by School / Center FY 2010

<table>
<thead>
<tr>
<th>School/Division</th>
<th>$ Total Dollars</th>
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<tbody>
<tr>
<td>Health Affairs</td>
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<tr>
<td>School of Medicine</td>
<td>4,887,565</td>
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<tr>
<td>School of Nursing</td>
<td>2,411,737</td>
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<tr>
<td>School of Public Health</td>
<td>9,215,577</td>
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<td><strong>Total</strong></td>
<td><strong>16,650,444</strong></td>
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## FY10 Health Services Research Funding by Department / Center

<table>
<thead>
<tr>
<th>Department/Center</th>
<th>$Total Dollars</th>
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<tbody>
<tr>
<td>SOM: Surgery</td>
<td>500,000</td>
</tr>
<tr>
<td>SOM: Cardiology</td>
<td>860,688</td>
</tr>
<tr>
<td>SOM: Gen Medicine</td>
<td></td>
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<tr>
<td>SOM: Infectious Dis</td>
<td>733,749</td>
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<tr>
<td>SOM: Nephrology</td>
<td>1,203,465</td>
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<tr>
<td>SOM: Peds</td>
<td>426,777</td>
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<td>SOM: Geriatrics</td>
<td>565,187</td>
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<td>SOM: Genetics</td>
<td>215,173</td>
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<tr>
<td>SOM: Psych</td>
<td>517,955</td>
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<tr>
<td>SOM: Radiation Onc</td>
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<table>
<thead>
<tr>
<th>Department/Center</th>
<th>$Total Dollars</th>
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<tbody>
<tr>
<td>SON: Fam &amp; Comm</td>
<td>860,233</td>
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<tr>
<td>SON: Adult &amp; Elder</td>
<td>1,220,234</td>
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<tr>
<td>SON: Other</td>
<td>331,280</td>
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<tr>
<td>SPH: Behav Science</td>
<td>2,028,957</td>
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<td>SPH: Health Pol</td>
<td>3,005,811</td>
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<td>SPH: Environ &amp; Occ</td>
<td>818,299</td>
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<tr>
<td>SPH: Epidemiology</td>
<td>642,130</td>
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<td>SPH: Global Health</td>
<td>987,415</td>
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<tr>
<td>SPH: GH Institute</td>
<td>1,732,965</td>
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</tbody>
</table>
Strengths

- Health Policy and Management (Thorpe, Druss, Goetzl)
- Health Economics (Adams)
- International Health Policy (Koplan, Martorell)
- Health Disparities (Kaslow, Quyyumi, CTSA, CFAR)
- Behavioral Research in Healthcare
- Health Ethics
- SPH
- SON: symptom and self management behavioral interventions, quality of life, family caregiver outcomes, prevention
- Partnerships: Children’s, MSM, CDC, GA Tech, Kaiser, Grady, ACS
Disease Specific Health Services
Research Strengths

- Cardiovascular (Vaccarino, Dunbar, Wilson, Shaw)
- Psychiatry (Kaslow, Rothbaum, Thompson, Druss)
- ID/Vaccines (Frew, Hughes, Omer, Swartz, Mulligan, Del Rio)
- Cancer (Lipscomb, Gillespie)
- Emergency Medicine (Houry, Isakov)
- Diabetes (Narayan, Phillips)
- Peds Hem/Onc (Woods, Dampier)
Weaknesses or Underdeveloped

- Clinical Effectiveness Research
- VA Program in HSR&D
- Links with Community/Health Care Networks
- Quality
- IT Infrastructure and Connectivity
- Primary Care Oriented Research
- New Healthcare Delivery Models
Threats

- Competition
  - AHCs
  - Non-AHCs
- Funding Uncertainties in Health Services Research
- Anticipated Reductions in R&D Expenditures
- Health Care Reform and Reimbursement Changes
- Fragmentation of Efforts
Opportunities

- Health Ethics
- Pediatric Health Services Research
- Global Health Policy
- Emory Institute for Advanced Policy Solutions
  - Emory Healthcare Innovation Program
- Health Disparities
- General Medicine
- Links to Quality Initiatives
- Business School / College Economics Dept?
- GA Tech Health Systems Institute
HSR&D Funding ~$2B and Increasing

- Patient Centered Outcomes Research Institute (PCORI)
- NIH
- AHRQ
- CMS (Center for Medicare and Medicaid Innovation)
- HHS
- DOD
- VA
- CDC
- National Center for Health Workforce Analysis-HRSA
- National Health Service Corp-HRSA
- FDA (Drug Effectiveness and Safety)
Benchmarking

- Tufts-New England Medical Center-Institute for Clinical Research and Health Policy Studies-Harry Selker
- Stanford-Department of Health Research and Policy
- Columbia/NY-Presbyterian-Harold Pincus
- Health Research and Education Trust with AHA, *(Health Services Research)*
- *Health Affairs*
- Kaiser / Geisinger / Intermountain Healthcare, Mayo Clinic
- RAND
- Dartmouth Institute for Health Policy and Clinical Practice
Next Steps

- Completion of Inventory
- Summit/Town Hall Meeting, April 2011
- HSR Committee
- Define Core Assets to Develop HSR&D
- Development of a Website
- Key New recruitments
- Integration with Health Care Quality Initiatives
- Better Define Opportunities for Federal Funding
- Better Define Benchmark Programs
Health Services Research in HPM

Kimberly Rask MD, PhD
Department of Health Policy and Management
Rollins School of Public Health
April 2011
Department overview

- 16 faculty members

- Range of methodologic disciplines including economics, statistics, behavioral science, evaluation sciences, health education, health policy, sociology and medicine

- Existing collaborations across disciplines and organizations
HSR is not new...

Health Services Research is the study of the “benefits of medical interventions in relation to their hazards and costs.”

Kerr L. White, M.D.

NEJM, 1961
One newer aspect is emphasis on translating information into practice

“..to assure Americans that the information needed for decision making will be available; that it will be translated into knowledge about health care outcomes, effectiveness, efficiency, and quality; and that it will be used wisely to enhance the health of the public”

John Eisenberg, MD, MBA
AHRQ, 1998
Where federal funds are focused...

Health Services Research examines how people get access to care, how much care costs, and what happens to patients as a result of this care. The main goals are to identify the most effective ways to organize, manage, finance and deliver high quality care, reduce medical errors, and improve patient safety.

AHRQ, 2002
First common theme to much of health services research...
A second theme stresses importance of population-based analyses and selection bias (White et al., NEJM 1961)
Research areas bridge science, policy, education and practice

Partners
- Georgia Hospital Association
- Kaiser
- AHRQ
- NIH
- CDC
- Grady
- CHOA
- Institute for Predictive Medicine
- VA

Tools
- Economic evaluations
- Health policy analysis
- Outcomes measurement
- Qualitative analysis
- Large database analysis

Chronic Disease (including obesity)
Mental Health
Cancer
Prevention, Identification, Management
Obesity and Cardiovascular Research

- **Workplace wellness initiatives**
  - Impact on productivity and health care costs (Goetzel)

- **Prevalence**
  - Obesity among African-American women in an inner city primary care practice (Jacobson)

- **Childhood obesity**
  - Impact of health insurance coverage on screening and treatment for childhood obesity (Rask)
Obesity and Cardiovascular Research

- CABG outcomes
  - Impact of gender and hospital quality on outcomes for women undergoing CABG (Culler)

- Health care costs of chronic conditions
  - Impact of growing burden of chronic diseases on health care costs (Thorpe)
Mental Health

- Promoting use of personal health records by persons with SMI (Druss)

- Improving the provision of primary care to persons with SMI (Druss)

- Racial and ethnic differences in use of mental health services by adolescents (Cummings)
Cancer

- Impact of Medicaid coverage on time to treatment for cancer (Adams)
- Impact of detection and treatment on lifetime medical costs for patients with polyps and colorectal cancer (Howard)
- Local practice and quality variations in breast and prostate cancer care (Lipscomb)
Economic evaluations

- Cost-effectiveness analyses
  - costs of implementing and EHR in primary care practices (Culler, Becker)
  - Advancing the science of health care costing (Lipscomb)

- Health care finance
  - Impact of HMOs in Medicaid populations (Adams)
  - International health care reform options (Saltman)

- Economic modeling and forecasting
  - Costs of public services for teenage mothers post-welfare reform (Adams)
Variations in quality of care

- Health care quality
  - Improving prescribing patterns of Medicaid providers (Becker)
  - Evaluating a quality improvement curriculum for health system leaders (Rask)

- Health disparities
  - Maternal and child health in diverse communities (Gaydos)

- Health literacy
  - Health literacy intervention to improve medication adherence (Blake)
Health Outcomes

- Health outcomes measurement
  - Effects of cigarette taxes and indoor air regulations on pre-pregnancy smoking, quit behaviors and birth outcomes (Adams)
  - Impact of IT adoption on patient outcomes (Culler)

- Patient Safety
  - Improving disaster planning in nursing homes, home health agencies and dialysis centers (Howard)
  - Impact of pharmacist detailing on adverse drug events post hospital discharge (Rask)
Administrative claims analyses

- Public use data sets
  - HCUP, ambulatory surveys, longitudinal surveys

- Medicare data
  - Medpar, Chronic care data warehouse

- Medicaid data
  - State-specific data sets

- Commercial claims databases
  - FFS and HMO
Linking Georgia Cancer Registry Data to Public and Private Sources

Current Application: Quality-of-Care Assessment for Breast and Colorectal Cancers: Does Care Received Match National Quality Forum Guidelines?

“Augmenting Georgia Cancer Registry Data from Multiple Sources to Track Outcomes and Quality” (Lipscomb, Adams, Ward, Chen, Flowers, Howard, Gillespie)

Future Applications: Comparative Effectiveness Research

2-year project (2009-2011) supported at 500K by Assoc of Schools of Public Health and CDC, with funding from NCI
In sum…

Successful health services research programs are built upon…

- teams of multi-disciplinary researchers
- with collaboration between content experts and methodologic experts
- who have an accessible data “laboratory”
- and are supported by a mix of internal, industry, foundation and federal funding
Healthcare Innovation Program

Fred Sanfilippo MD, PhD

Health Services Research Town Hall Meeting
April 14, 2011
Healthcare Innovation Program

Outline

- What, Who, Why
- Current status
- Website demo
- Next Steps
Healthcare Innovation Program

The What

Using combined approaches

• Virtual: www.hip.emory.edu “Wiki + Linked In”
• Real: meetings, workshops, projects

An interactive network that provides

• Information: content, links
• Resources: facilitate activities
• Connections: among faculty, staff, students

Focused on healthcare delivery/services/systems

• Research: sponsored projects
• Education: courses, public
• Programs: quality, access, cost
Healthcare Innovation Program
The Who: Engaged Institutions

**Emory:**
- HIP Strategic Planning Committee

**Georgia Tech:**
- EVP Research Office
- Health Systems Institute

**ACTSI:** institutional partners, including
- Morehouse School of Medicine
- Children’s Healthcare of Atlanta
- Grady Health System
- Atlanta VAMC

Supported by the Woodruff Fund and ACTSI
Healthcare Innovation Program
The Who: Emory HIP SPC

David Bederman, Law
Bill Bornstein, EHC
Shari Capers, WHSC
Maryam Carn, HIP
Steve Culler, RSPH
Lanny Liebeskind, CAS
Jeff Molter, WHSC
Joel Saltz, SOM, CCI
Fred Sanfilippo, HIP

Susan Shapiro, SON
David Stephens, WHSC, SOM
Anand Swaminathan, GBS
Gary Teal, WHSC
Ken Thorpe, RSPH
Viola Vaccarino, SOM, RSPH
Paul Wolpe, Ethics Ctr
Paul Spearman, SOM, CHOA
Healthcare Innovation Program

The Why

Increase Effectiveness
- Enhance faculty, student, staff interactions
- Identify and facilitate high priority research, education, and program opportunities

Increase Efficiency
- Leverage existing assets; cost avoidance
- Facilitate access to information, collaborators for grant submissions, educational offerings

Increase Recognition
- Invited speakers
- External advisory board members
Healthcare Innovation Program
Development Phases

Phase I: Sept 2010-Jan 2011
- HIP strategy, plan developed by SPC
- Emory inventory, internal website developed

Phase II: Jan- April 2011
- ACTSI, Georgia Tech, CHOA engagement
- Expand internal website, content
- Initiate internal workgroups, identify opportunities

Phase III: April-Sept 2011
- Launch website, enhance functionality; track use
- Expand partners, content
- Expand workgroups, prioritize opportunities

Phase IV: Sept 2011-Sept 2012
- Initiate external speakers, pilot projects programs
Healthcare Innovation Program
Information: Research and Education

Program Topics
- 4 major Healthcare categories: Delivery, Outcomes, Costs & Value, Education
- 30 total categories; 2-3 subcategories each

Sponsored Research
- Program topics, faculty PI, sponsor, project link
- > 125 projects; > 100 faculty; > 75 sponsors

Educational Offerings
- Program topics, courses, schools/colleges
- > 30 courses, 8 schools/colleges
- Seminars, Lectures, Meetings
Healthcare Innovation Program

Information: Resources

Faculty
- By University, College/School; Topics

Funding Sources
- Local/internal, regional
- Government, non-government

Support Programs
- Local/internal, regional
- Government, non-government

Databases
- Local/internal, regional
- Government, non-government
Healthcare Innovation Program
Information: Resources

News & Events
• Events: scheduled lectures, programs
• News from National Sources
• News from Local Partners

Innovation Highlights
• Recent Research Projects
• Recent Publications
• Links: sites, journals

Partner Organizations
• Emory, Georgia Tech, ACTSI affiliated
• Other local, regional
Healthcare Innovation Program
Website
Healthcare Innovation Program
Potential Website Uses

Faculty, Staff
• Identify potential collaborators by interest topic, research program, course offering, academic discipline
• Identify potential funding sources, support programs
• Keep up to date: news & events, publications

Students
• Find potential mentors by interest topic, research program, course offering, academic discipline
• Identify course offerings, support programs
• Keep up to date: news & events, publications

External Community
• Identify activities, individuals; news & events
Healthcare Innovation Program
Next Steps

Website
• Expand content; engage other local partners
• Enhance content; edits, updates
• Improve functionality, database content, utility

Seminars, Programs
• Internal speakers program
• External speakers program
• Promote existing programs among partners
Healthcare Innovation Program
Next Steps

Workgroups
• Initiate, facilitate “bottom-up” interest groups within and across topics, schools and institutions
• Identify research, funding opportunities
• Help identify internal priorities

Pilot Projects
• Internal, local seed funding
• Facilitate research, education proposals
• Regional, national collaboration
Leveraging Investments in Clinical Quality to Enhance Health Services Research

John F. Sweeney, MD
Chief, General and Gastrointestinal Surgery
Director, Clinical Quality and Patient Safety
Department of Surgery
Best Place for Surgical Care

• **Best possible outcomes and service**
  Perspective of patient and family, referring physician, managed care

• **Build systems of care**
  Paradigm shift from individual excellence model to integrated care delivery (DOS/.DOM/EUH/EUHM/SOM/TEC)

• **Data-driven multi-parameter assessment of Quality and Clinical Effectiveness**
  Net Health Outcomes and Service

• **Integrated clinical research and Health Services Research**

• **Culture of Quality and Service**
Objectives

• Outline Department Quality Program
• Overview of ACS/NSQIP and UHC/QAP
• “Bedside to Laboratory and Back Again”
  Readmission Project
How is quality measured?

• In general outcomes databases can be divided into two types based on how the data is obtained:
  1. Administrative
  2. Clinical
• The value of the product is directly related to the quality of the data.
• Bad data in = Bad data out
University Health System Consortium: Quality and Accountability Program

- Currently Emory Healthcare's outcomes vendor
- Only full UHC members participate
- Source data obtained from:
  - Clinical database (CDB)
  - Operational database (ODB)
  - Core measures submissions
University Health System Consortium: Quality and Accountability Program

- Institutional performance metrics grouped into 6 domains
  - Safety, mortality, effectiveness, equity, efficiency and patient centeredness
- The first 4 used to calculate overall score.
- Efficiency and patient centeredness reported but not included in calculations
- Implementation of standardized patient satisfaction survey in future
American College of Surgeons: National Surgical Quality Improvement Program

• Prospective data collection by nurse reviewer

Demographics: Six variables
Surgical Profile: 11 variables
Pre-Operative Data: 44 clinical variables and 13 laboratory variables
Intra-Operative Data: 16 clinical variables and 3 occurrence variables
Post-Operative Data: 20 occurrence variables, 12 laboratory variables, and 10 discharge variables
American College of Surgeons: National Surgical Quality Improvement Program

- Data then analyzed using validated risk adjustment models and Results reported as Observed/Expected occurrences (O/E ratio)
- Reports available for review on a semiannual basis (June and January)
- Online reports available to monitor outcomes between formal report cycles
- Use data to re-engineer workflows, foster and improve internal education, and to develop clinical performance improvement initiatives
Bedside to Laboratory and Back Again: Readmission Project

- Patient Protection and Affordable Care Act
- Specific focus on reducing readmissions
- Heart Failure, Acute Myocardial Infarction and Pneumonia
- Understand how this might impact surgical specialties
Bedside to Laboratory and Back Again: Readmission Project

- EUH readmission rate above UHC median
- General Surgery contributor
- Reviewed 6 month time frame of General Surgery readmissions from UHC databases
  - Heterogeneous population
  - Difficult to draw conclusions/identify areas for improvement
- Needed new strategy
# Key Indicator Report

## Emory University Hospital

### Jul - Sep 2010 (Q3)

#### 30-Day Readmission Rate (all cause)

**Definition - 30-Day Readmission Rate (all cause)**
The proportion of patients who return to the hospital within 30 days of discharge from the prior (index) admission. Index admissions will be drawn from the reporting period except for the most-recent quarter or year. Encounters in the last 30 days of the most-recent quarter or year are excluded as index admissions for the current reporting period. At the next report release (when another quarter of patient data is available to UHC), these rates will be updated to include index admissions for the entire reporting period. Chemotherapy, radiation therapy, dialysis, rehabilitation, and delivery/birth cases are excluded. Bad data and deaths at first admission are excluded from the numerator and denominator. The calculation formula is: Readmission Rate = number of readmissions/number of index admissions.

**Relative Performance**

<table>
<thead>
<tr>
<th></th>
<th>Observed</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Target</th>
<th>UHC Median</th>
<th>Rank</th>
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<tbody>
<tr>
<td>Current Quarter</td>
<td>13.3</td>
<td>845</td>
<td>6,377</td>
<td>10.4</td>
<td>11.7</td>
<td>87/113</td>
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<tr>
<td>Recent Year</td>
<td>12.6</td>
<td>3,119</td>
<td>24,702</td>
<td>10.8</td>
<td>12.1</td>
<td>70/113</td>
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</table>

### Data Source:
UHC CDB
Related Report: N/A
Contact: Jodi Neikirk, cdpsinfo@uhc.edu or Steve Meurer, meurer@uhc.edu

### Benchmarks:

#### A) UHC Primary Population (113)

<table>
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<tr>
<th>Current Quarter (n)</th>
<th>10th</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
<th>90th</th>
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<tr>
<td>395</td>
<td>6.0</td>
<td>7.5</td>
<td>10.0</td>
<td>11.3</td>
<td>14.0</td>
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**Related Metrics Current Quarter**

<table>
<thead>
<tr>
<th>Numerator</th>
<th>Denominator</th>
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<tr>
<td>395</td>
<td>6,377</td>
<td>6.2</td>
<td>89/113</td>
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</table>

**Current Quarter UHC Top 10 in this Metric**

- **PARKLAND**: 6.1
- **HARBOR-UCLA**: 6.2
- **HERMANN**: 6.4
- **NEVADA**: 7.4
- **UTMB-HEALTH**: 7.5
- **N.MEXICO**: 8.0
- **LOUISVILLE**: 8.5
- **UTAH**: 8.7
- **AHS-OVERLOOK**: 8.8
- **NYU**: 8.9

**Performance in Other Metrics Legend:**
- ■ Within Target Range
- ○ Substantially Better than Target Range
- ○ No Data Available
- A missing performance symbol means performance was worse than target range

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**30-Day Readmission Rate (all cause) Legend:**
- O Substantially Worse than Target Range
- ● Substantially Better than Target Range
- ○ Worse than Target Range
- O No Data From Your Institution
Prioritizing Quality Improvement in General Surgery

Peter L Schilling, MD, Justin B Dimick, MD, MPH, John D Birkmeyer, MD, FACS

BACKGROUND: Despite growing interest in quality improvement, uncertainty remains about which procedures offer the most room for improvement in general surgery. In this context, we sought to describe the relative contribution of different procedures to overall morbidity, mortality, and excess length of stay in general surgery.

STUDY DESIGN: Using data from the American College of Surgeons’ National Surgery Quality Improvement Program (ACS-NSQIP), we identified all patients undergoing a general surgery procedure in 2005 and 2006 (n = 129,233). Patients were placed in 36 distinct procedure groups based on Current Procedural Terminology codes. We first examined procedure groups according to their relative contribution to overall morbidity and mortality. We then assessed procedure groups according to their contribution to overall excess length of stay.

RESULTS: Ten procedure groups alone accounted for 62% of complications and 54% of excess hospital days. Colectomy accounted for the greatest share of adverse events, followed by small intestine resection, inpatient cholecystectomy, and ventral hernia repair. In contrast, several common procedures contributed little to overall morbidity and mortality. For example, outpatient cholecystectomy, breast procedures, thyroidectomy, parathyroidectomy, and outpatient inguinal hernia repair together accounted for 34% of procedures, but only 6% of complications (and only 4% of major complications). These same procedures accounted for < 1% of excess hospital days.

CONCLUSIONS: A relatively small number of procedures account for a disproportionate share of the morbidity, mortality, and excess hospital days in general surgery. Focusing quality improvement efforts on these procedures may be an effective strategy for improving patient care and reducing cost. (J Am Coll Surg 2008;207:698–704. © 2008 by the American College of Surgeons)
### Bedside to Laboratory and Back Again: Readmission Project

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>CPT CODE</th>
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<tbody>
<tr>
<td>COLECTOMY+/- COLOSTOMY</td>
<td>44140-44160, 44188, 44204-44208, 44210-44213, 44227, 44238</td>
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<tr>
<td>SMALL INTESTINE RESECTION</td>
<td>44187, 44202-44203, 44227, 44238, 44120-44121, 44125-44128, 44130</td>
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<td>PANCREATECTOMY</td>
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<td>APPENDECTOMY</td>
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<tr>
<td>BARIATRIC SURGERY</td>
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<td>PROCTECTOMY +/- COLECTOMY +/- ANASTOMOSIS</td>
<td>44155, 44157-44158, 44212, 45110-45114, 45116, 45119-45121, 45123, 45395, 45397</td>
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<td>LYSIS OF ADHESIONS</td>
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<td>LIVER RESECTION</td>
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<tr>
<td>Procedure</td>
<td>Over 72 hours</td>
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<td>VENTRAL HERNIA REPAIR</td>
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<td>PARATHYROIDECTOMY</td>
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<td>LIVER RESECTION</td>
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</tbody>
</table>
Bedside to Laboratory and Back Again: Readmission Project

- Preliminary analysis of factors associated with early readmission undertaken
- Collaboration with GSU Experimental/Behavioral Economics Group
  Jim Cox, PhD  Vjollca Sadiraj, PhD  Kurt Schnier, PhD
- NIH grant submitted 3/2010 and awarded 10/2010
- In depth econometric analysis almost complete
  Complex GI Surgery for Cancer
  8500 cases from CDW
  Over 250,000 data points
- Short term goal: “Triage” activities of the Transition Manager
- Long term goal: Redefine how decision to D/C made
Bedside to Laboratory and Back Again: Readmission Project

• Create discharge decision support software tool (risk calculator)

• Test the impact of tool in an experimental setting
  - Medical Students
  - Surgery Residents
  - Attending Surgeons

• Test the impact of switching D/C default from an “opt in” decision to an “opt out” decision
  - Maintain physician autonomy
  - Changes the transaction costs

• “Decision Software Tool” required for these experiments can be used in future to educate Medical Students about D/C decision during preclinical curriculum
Department of Surgery Quality Program

- LAPAROSCOPIC VERSUS OPEN APPENDECTOMY: An Analysis of Outcomes in 17,199 Patients Using ACS/NSQIP
  Accepted for publication in *Journal of Gastrointestinal Surgery*
- Left Subclavian Artery Coverage During Endovascular Thoracic Aortic Aneurysm Repair: Risk of Perioperative Stroke or Death
  Presented at Society of Vascular Surgery and manuscript in preparation
- Uptake of Comparative Effectiveness Research: Implications for Discharge Decision
  NIH Grant Awarded
- A Behavioral Model of Organ utilization in Patients with Chronic Renal Failure
  NIH Submission 3/2010
- Georgia Surgical Quality Collaborative
  WellPoint Signature Grant 10/2010
- Resident Participation During CEA: Impact on Perioperative Outcomes
- Impact of End Stage Renal Disease on Outcomes for Bariatric Surgery
- Single versus Multiple Operative Teams during Endovascular Abdominal Aortic Aneurysm Repair: 30-Day Mortality Analysis from the ACS-NSQIP Dataset
Thank You

Questions?
Georgia Tech
Institute for People and Technology

WHAT IF?

Transforming Complex Human Enterprises
Through Disruptive Research
Lead Domains

Healthcare

Media

Education
Our Approach

**Transformative**
What is the vision?

**Transdisciplinary**
Who needs to be at the table?

**Translational**
How to pave the road for real world impact?
Networked Model

Academic/applied research, prototyping at GTRI

An “onramp” to GT for external partners

Joint investment in competitive infrastructure
Healthcare Subdomains

Transforming Delivery Systems

Enabling Everyday Healthcare
Enabling Everyday Healthcare

What if robots could intelligently and adaptively assist disabled or elderly people in achieving and maintaining independence at home?

Healthcare Robotics

Robots designed to care for people in home settings can provide continuous, personally tailored care. At Georgia Tech, we are combining novel robotic design with innovations in human-robot interaction.

Mobile manipulation for older adults at home
Personal robots can retrieve fallen items, lift heavy objects, and gently pass household items to older adults. A robotic assistant can enable older adults to live independently at home in contrast to moving to an institutional care setting.

Health monitoring with cloud robotics
Home health robots can communicate with home health services that extend beyond the physical reach of the home. Robotic assistants can act on cloud-based health monitoring and deliver immediate care.

Enabling people with severe physical impairments
Home and mobile robotics provide a new set of tools for people with severe physical impairments, including wounded soldiers and people with visual and hearing impairments.
Enabling Everyday Healthcare

What if everyone could make decisions about healthcare and lifestyle based on a unique personalized view of their own health?

Empowered Personal Health

What if everyone could make decisions about healthcare and lifestyle based on a unique personalized view of their own behavior, health risks and clinical status?

The dominant health challenges in the modern world stem from chronic disease and the behaviors that lead to poor health. Georgia Tech is inventing new human-centered technologies and models of care that empower individuals, families and care providers to achieve healthier lifestyles.

Ongoing calibration of treatment, monitoring and management based on personal data

The vast majority of healthcare takes place outside of the hospital and doctor’s office. New technologies enable people to monitor their health condition and adjust treatment and behavior as part of their daily routine. Greater engagement and confidence leads to better health.

Improve patient outcomes and physician involvement by taking an ecological approach to technology development

Monitoring technologies can provide a wealth of information to clinicians by creating a fully detailed and robust description of health challenges outside of the exam room. Care teams can monitor and adjust treatment avoiding costly ER visits and lengthy delays between routine appointments.

Visualizing the data

Personalized nutrition tools empower consumers to make informed food choices when dining out, grocery shopping and cooking at home.

Salut! (below) is a system managing appropriate health goals through tracking and analysis of self-collected data, such as exercise, diet, and sleep patterns.
Enabling Everyday Healthcare

What if even subtle changes in children with autism or elderly patients could be easily monitored to make timely decisions?

Behavior Imaging

What if even subtle behavioral changes in children with autism or elderly chronic disease patients could be easily monitored in order to make timely healthcare choices?

Faculty from several schools at Georgia Tech, Emory University and the Marcus Autism Institute are leading this ground-breaking research program. Specific challenges include:

- How to differentiate intentional and meaningful interactions from coincidental encounters
- How to characterize normal and abnormal patterns of behavior

Each patient is the norm. This common wisdom in medicine calls for the need for individualized models that answer the question, "Is this behavior normal for this individual?" and with that answer open the door for calibrated models of human behavior in a range of common situations.

From X-ray to MRI to Behavioral Imaging

Medical science leaps forward with the invention of new imaging technologies. Behavior imaging promises a new world of medical insights as it enables sensing of social, dynamic and everyday activities.
Transforming Delivery Systems

What if innovative healthcare applications could simply “plug in” to health information exchanges?

trusted Application Platforms

What if innovative health care applications for tomorrow’s mobile and home-based media technologies could simply “plug in” to health information exchanges and mesh seamlessly with the complex mix of data representations, structures, and standards used in the system?

Georgia Tech is assembling an open source Health IT test bed as the basis for creating an environment and architecture that will enable health application designers and developers to invent and deploy tools for health care delivery.

Patients can control what information they want accessible to whom and under what circumstances

Data security and liquidity are key. Information architectures for Health IT must meet the demands of a modern, dynamic, and heterogeneous care ecosystem.

Health care providers, patients, and others can access authorized data in precise ways

Georgia Tech is advising the design of Georgia’s Health Information Exchange (HIE). Through partnership with the Department of Community Health (DCH), this project aims to create a heterogeneous flexible network that meets demands ranging from dense urban centers and rural healthcare.

Georgia Tech is assisting primary care providers implementing health records systems through partnership with Morehouse School of Medicine (NCPC).
Transforming Delivery Systems

What if care spaces, health IT and medical devices were designed to work together seamlessly based on care processes?
Transforming Delivery Systems

What if managers and policy makers could “test drive” new ideas with a simulated virtual model that encompasses our health system as well as their care processes, organizations, and personnel?

Health Policy Flight Simulator

What if managers and policy makers could “test drive” new ideas with a simulated virtual model that encompasses our health system as well as their care processes, organizations, and personnel?

Engineering simulators guide the design of complex systems, from manufacturing plants to spacecraft. Georgia Tech is now creating equally powerful tools to guide the design of healthcare systems. Health care stakeholders, from payers to providers to employers, need powerful tools to inform transformational healthcare programs.

Employer-based wellness programs
Employers can assess current wellness programs in addition to projecting the healthcare demands in the future.

Economic valuation of prevention initiatives
Wellness programs are cheaper than doing nothing, but only in the short term. Simulation tools can assess the longer-term impact of increased health risks and regional economic consequences.

Specific Flight Simulators for Medicare/ Medicaid or other insurance plans
Medicare and Medicaid policy drives huge percentages of immediate healthcare costs and incur a long tail of healthcare repercussions. Policy simulators can provide tools for regional optimizations that meet current and future healthcare demands.

Healthcare demands stemming from the prevalence of chronic disease and obesity are pushing current systems to the breaking point. New tools are needed to chart a path forward.
WHAT IF?
Professional HIT Certificate Program at GT

Four 2-day Friday/Saturday Courses:
Understanding the changing dynamics of the health care industry
Contemporary health care IT technologies
Managing change to solve your customers’ future challenges
Hands on project

Contact Sherry Farrugia
404-385-0534
sherry.farrugia@innovate.gatech.edu

Georgia Institute of Technology proudly announces the new
Health Information Technology Certificate
# Breakout Session Assignments

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<tr>
<th>Session</th>
<th>Room</th>
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<tbody>
<tr>
<td>HSR Funding &amp; Program Development</td>
<td>Dogwood</td>
<td>Green</td>
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<tr>
<td>HSR Key Faculty, Partnerships &amp; Collaborations</td>
<td>Mountain Laurel</td>
<td>Yellow</td>
</tr>
<tr>
<td>HSR Programs 1</td>
<td>Maple</td>
<td>Blue</td>
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<tr>
<td>HSR Programs 2</td>
<td>Magnolia</td>
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