The Key to Implementation
Science Research:
Learn Who Wants What

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Executive Vice President Medical and Academic Affairs, GHS
PROPOSITION: What Vehicle Can Routinely Transport a GHS Surgeon Most Quickly?
**Formula 1 Race Car**

- 1415 lbs / 900 horsepower;  
  Top speed ~ 220 mph
- *The most technologically advanced car on the planet*

**Important Considerations for Driving Across Town:**

- Must preheat the oil for 1 hour prior to starting
- No starter (*Requires 2 people to start the vehicle*)
- Ground clearance approx. 1 inch
- Must be moving or the engine will overheat
- Engine rebuild every 400 miles ~$1,000,000/rebuild
- Open cockpit (*Tough in the rain and snow!*)
- No headlights, tail lights or brake lights

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**NASCAR Race Car**

- 3400 lbs / 850 horsepower;  
  Top speed ~240 mph
- *America’s most popular race car*

**Important Considerations for Driving Across Town:**

- Must preheat the oil for 1 hour prior to starting
- No doors; *Driver must crawl in through the narrow window opening!*
- 1 seat; No AC (*Usually over 120°F inside!*)
- No windshield wipers; *Extremely loud!*
- Engine rebuild every 650 miles ~$100,000/rebuild
- No headlights, tail lights or brake lights.
- Fire out of exhaust pipes (*Bad for pedestrians!*)

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![Formula 1 Race Car](image1.png)  
![NASCAR Race Car](image2.png)
Implementation Science Research
A Timely Topic

Supporting Organizations
U.S. Government: NIH, PCORI, OGAC, USAID, CDC

International: the Global Fund, World Bank, the World Health Organization
“Implementation science is the study of methods to promote the integration of research findings and evidence into healthcare policy and practice. It seeks to understand the behavior of healthcare professionals and other stakeholders as a key variable in the sustainable uptake, adoption, and implementation of evidence-based interventions.”
• There is often a gap between the expectations of researchers who generate and report implementation science results and implementers who use them.

• Researchers and funders must recognize the value of research results from less tightly controlled real-world settings for effective implementation of health interventions.

• Scientific rigor must be balanced with a need to conduct research that applies to real world settings. In this context, research rigor should not be confused with the quality of research. Rather, this form of research may not produce results with the same precision as other forms of research.

• We may need to use both qualitative and quantitative methods, perhaps modified from various fields such as economics and business, to evaluate the implementation of health interventions.
Key Considerations

• By intent, the effort must be collaborative
• The delivery system is the laboratory
• The work must accept and take into account real-world circumstances
• The work must not disrupt the delivery system
• The work must consider if the public health or clinical practice communities will adapt the intervention
• Each collaborator must recognize value in the effort
Health Sciences South Carolina (HSSC)

**SC Legislature**
- Attributable Jobs
- New Businesses
- Votes

**Faculty**
- Publications
- Grants and Grant Renewals
- Promotion and Tenure

**Providers**
- Billable services
- Referral business
- Market share
### Implementation Science Research

<table>
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<tr>
<th>Payers</th>
<th>Faculty</th>
<th>Providers</th>
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<td>?</td>
<td>Publications</td>
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<td>Promotion and Tenure</td>
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The Road Map for Implementation Science Research:
Solutions to America’s Unsustainable Health Care Cost Growth
What is Driving U.S. Health Care Spending?

Bipartisan Policy Center, September 2012
Tom Daschle (D-SD), Bill Frist (R-TN)
Pete Domenici (R-NM), Alice Rivlin

Inventing the Future of Health Care
Third Annual Huron Health Care CEO Forum
32 CEOs, 2013
Figure 2: U.S. National Health Expenditures as a Share of GDP, 1960-2021

Source: Centers for Medicare and Medicaid Services.
AMERICA’S HEALTH CARE COST GROWTH

1960, $27 billion; 5% of the GDP

2010, $2.6 trillion; 18% of the GDP

2021 projection is $5 trillion; 20% of the GDP
### U.S. Expenditures

<table>
<thead>
<tr>
<th>Category</th>
<th>1980</th>
<th>2000</th>
<th>2017 Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>9.0</td>
<td>14.0</td>
<td>19.5</td>
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<tr>
<td>Pensions</td>
<td>5.6</td>
<td>5.9</td>
<td>6.6</td>
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<tr>
<td>Defense</td>
<td>5.0</td>
<td>3.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Welfare</td>
<td>11.4</td>
<td>13.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Education</td>
<td>5.2</td>
<td>5.3</td>
<td>5.7</td>
</tr>
<tr>
<td>Transportation</td>
<td>4.0</td>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Total</td>
<td>40.2</td>
<td>44.2</td>
<td>46.5</td>
</tr>
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</table>

Percent of GDP
Rising Health Care costs cripple business competitiveness
POOR ROADS COST MILLIONS

DOT-paid claims range from car damage to lost lives

By Tim Smith
Staff writer
tsmith@greenvilleonline.com


According to his family, he was taking proper safety precautions on a rainy night. He drove below the posted highway speed limit and wore his seat belt.

But somewhere along the wet highway, Elmore lost control, drove into the median and sat helpless as his car rolled over several times. He later died from his injuries.

His mother filed a suit against the state Department of Transportation, alleging the agency was negligent in failing to properly maintain the highway and its median, which she alleged was...
THE DRIVERS OF HEALTH CARE COSTS

• Health Care Financing and Delivery
• Population Needs for Care
• Advancing Medical Technology
• Insurance Design
• Lack of Transparency in Cost and Quality Information
• Competition and Consolidation
• Legal and Regulatory Environment
• Health Professional Workforce
Fee-for-service (FFS) Reimbursement Through Third Party Payment

The more services provided, the more fees are paid
Rewards high volume of tests, procedures, inpatient stays, and outpatient visits
Many prospective payment experiences have shown approximate 30% reduction in procedures
Typically does not pay for prevention, coordination of care, patient education, non-physician services
Third party payment masks true cost of care to the consumer

Fragmentation of care

FFS pays for individual service volume, leading to poor care coordination
In a 2008 survey, 32% of adult patients reported duplicative or unnecessary care
Fragmentation contributes to overtreatment with estimated costs of $158-$226B annually

Administrative burden

Complex system of payment leads to excess paperwork and consumption of patient and physician time
Estimated to cost $156-$183B annually, and growing rapidly.
POPULATION NEEDS FOR CARE

Aging

10% of those every having lived to age 65 are alive today
Over the next 25 years, population aging will be responsible for 52% of the growth in health care spending

There will be 81 million Medicare enrollees by 2030, an increase of 1.6M annually
25% of total Medicare spending occurs on patients in their last year of life
Ratio of those aged 65 or older to those of working age will grow from 22% in 2012 to 30% in 2022

Chronic disease

Half of the US population suffer from chronic diseases, which account for 84% of health care costs
Preventable chronic conditions and related morbidity are accelerated by engagement in unhealthy behaviors
Epidemic obesity and mental disorders (depression, bipolar disorder, substance abuse) complicate treatment of chronic conditions
Figure 3: Population Over 65 as Share of Working Age Population

Source: Congressional Budget Office.
Patients and physicians associate use of advanced technology, more tests, and more procedures with better care.

Unnecessary use of new technology drives health care spending even when not proven effective for improving outcomes.

Interestingly, in most other industries new technology drives down cost or it does not survive.
Supplemental coverage protects patients from impact of cost-sharing, leading to higher utilization of both appropriate and inappropriate services.

Past failure to pay for screening and preventive services led to more complex and expensive downstream care.

Non-targeted application of screening and preventive services will drive up cost of care with little demonstrable benefit.
LACK OF TRANSPARENCY IN COST AND QUALITY INFORMATION

Limited consensus on standards of care

The US lacks a uniform, widely-accepted standard for evaluating cost-benefit effectiveness of medical treatments and technologies.

It takes an average of 18 years to get a proven new therapy into widespread standard of care use.

Typically neither the patient nor the physician are aware of costs associated with an episode of care, or often the cost of even a single test or drug.

Cultural and institutional influences

In general, our patient and physician culture tends to favor medical interventions to prolong life or improve function even in the face of low probability of success, high risk, anticipated limited improvement, and high cost.

Our reimbursement system, fragmented delivery system, and institutional practices do not facilitate open discussions about such matters by clinicians with patients and families.

Cultural and language barriers in our increasingly diverse patient population further aggravate this communication gap.
COMPETITION AND CONSOLIDATION

Excessive consolidation of either providers or insurers in a single market can limit consumer choice and impede competitive price negotiation

1990’s data showed an association between hospital consolidation and increase in inpatient PRICES by 5%

On the other hand, comparative unit pricing from around the world suggests that American desire for broad provider choice constrains government leverage to control cost and to coordinate care
LEGAL AND REGULATORY ENVIRONMENT

Anti-trust, anti-kickback, and physician referral ethics laws (Stark) are legal barriers to more cost-effective systems of care and related mechanisms of payment.

Our medical malpractice system causes expense of law suits, high malpractice insurance premiums, and defensive medicine.

80-95% of physicians surveyed report ordering diagnostic tests and procedures in response to threat of lawsuits.

Defensive medicine cost estimates range from $45.6B to $650B per year.

Provider administrative costs related to fraud, waste, and abuse are estimated to now be 10% of annual system-wide spending ($250B).
HEALTH PROFESSIONAL WORKFORCE

Restrictions preventing PA’s and NP’s from practicing at the “top of their license” drives up costs by wasting valuable physician time.

Two of every five adults receive primary care services from more expensive specialists.

In 2011, 31% of physicians refused new Medicaid patients and 17% refused new Medicare patients, causing them typically to seek care in the ED.
Cost Reduction and Revenue Enhancement Can Yield 20-40% Benefit

To thrive in the new healthcare landscape, most providers will need to improve performance by 20 to 40 percent. Improvement of this magnitude necessitates a multi-pronged, multi-year, strategic approach in each of the four categories illustrated here.

**OPPORTUNITY**

- **PERFORMANCE IMPROVEMENT**
  - 8% to 12% total improvement

- **SCALE AND INTEGRATION**
  - 4% to 8% total improvement

- **CLINICAL TRANSFORMATION**
  - 6% to 14% total improvement

- **ASSET RATIONALIZATION**
  - 3% to 6% total improvement

**MARKET DRIVERS**
- Payment Reform
- Improving Care Quality
- Cost Pressures

Source: Huron Healthcare Performance Improvement Database
Healthcare Delivery and Payment Reform

The healthcare industry is undergoing a fundamental shift in how healthcare is delivered.

<table>
<thead>
<tr>
<th>ELEMENTS OF CHANGE</th>
<th>TODAY</th>
<th>FUTURE</th>
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<tbody>
<tr>
<td>HEALTHCARE FOCUS</td>
<td>Sick care</td>
<td>Wellness and prevention</td>
</tr>
<tr>
<td>CARE MANAGEMENT</td>
<td>Manage utilization and cost</td>
<td>Manage ongoing health (and optimize care episodes)</td>
</tr>
<tr>
<td></td>
<td>within a care setting</td>
<td></td>
</tr>
<tr>
<td>DELIVERY MODELS</td>
<td>Fragmented/silos</td>
<td>Care continuum and coordination (right care, right place, right time)</td>
</tr>
<tr>
<td>CARE SETTING</td>
<td>In office/hospital/person</td>
<td>Home health, e-health, m-health</td>
</tr>
<tr>
<td>PHYSICIAN PLATFORM</td>
<td>Solo practitioner</td>
<td>Multi-specialty, integrated</td>
</tr>
<tr>
<td>CLINICAL SYSTEMS / EMR</td>
<td>Transactional</td>
<td>Interoperable, health information exchanges</td>
</tr>
<tr>
<td>QUALITY MEASURES</td>
<td>Process-focused, individual</td>
<td>Outcomes-focused, population based</td>
</tr>
<tr>
<td>REIMBURSEMENT</td>
<td>Fee-for-service</td>
<td>Value-based (outcomes, utilization, total cost)</td>
</tr>
<tr>
<td>FINANCIAL INCENITVES</td>
<td>Do more, make more</td>
<td>Perform better, make more</td>
</tr>
<tr>
<td>FINANCIAL PERFORMANCE</td>
<td>Margin per service, procedure,</td>
<td>Margin per life</td>
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<tr>
<td></td>
<td>etc.</td>
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</table>

Source: Huron Healthcare
Recent deceleration because Americans cut back on purchasing all goods and services, including health care, during the economic downturn.
Implementation Science Research

**Payers**
- Access
- Quality
- Cost Containment

**Faculty**
- Publications
- Grants and Grant Renewals
- Promotion and Tenure

**Providers**
- New models of care
- Clinical Transformation
- Payment Reform
QUESTIONS
AND
COMMENTS
The Real Winner: The Mini Cooper!

- 2535 lbs / 121 Horsepower
- Top speed ~110 mph
- Street legal; Price ~$25,000; Practical
- Great stereo; Sporty
- Engine rebuild every 300,000+ miles
- Designed for stop & go city driving
The Real Solution:

CHANGE THE SURGEON’S SCHEDULING BEHAVIOR