Why is overuse important?

• At age 15, Zach was prescribed a short course of oxycodone for a back injury due to wrestling

• After the prescription ended, he continued to use opioids illicitly, then later switched to heroin

• At age 21, he overdosed on heroin leading to cardiac arrest, anoxic brain injury, and now walks with a limp; later he contracted hepatitis C
Overuse can harm

• As a primary care physician, I am particularly troubled by the harms of overuse

• In this case, prescribing a young man with a musculoskeletal injury opioids – clear overuse leading to a cascade of consequences

• This unfortunate story illustrates a tangible example of the harms of overuse, and provides a moral framework behind this work

Access to Prescription Opioids—Primum Non Nocere
A Teachable Moment

But why am I here?

• Recently appointed assistant professor

• My goal is to discuss a potentially contentious topic – not trained for this

• Why do we need to transition our nation to a system that provides high value care?

• The reason is because of two numbers: life expectancy and healthcare spending
Life expectancy at birth and health spending per capita, 2011

How can we improve value

• Because of these two numbers, growing consensus that something has to be done

• Goal is to summarize some of the fundamentals and what interventions can be done

• No matter what specialty you’re in, this is going to be all hands on deck

• Must ensure that the physician groups that survive in the future are truly high value and not just cheaper and you would never want to go there
OBJECTIVES

• Define value in healthcare

• Provide US health policy context on value

• Introduce strategies to identify and reduce low-value care
Value in Healthcare

Health Outcomes

Costs
Health Outcomes

Costs

80-90%

Structure

10-20%

Socioeconomics, environment, genes

Process

Is the care appropriate?

Health Outcomes
The United States struggles to provide high value care

~50% of Americans receive recommended care

~30% of health spending has no impact on health outcomes


What are US policy solutions to improve value?

But these are blunt tools and are not designed to improve appropriateness of care
Trends in utilization rates of all advanced noninvasive diagnostic imaging modalities and x-rays by fee-for-service Medicare beneficiaries, 2001–14.

David C. Levin et al. Health Aff 2017;36:663-670
Health outcomes are influenced by appropriateness

- Appropriateness has to do with the outcomes not the costs. It’s purely a patient’s clinical risk/benefit consideration.
- But it has everything to do with value because appropriate processes of care directly impact health outcomes.

\[
\begin{align*}
\text{Appropriate Care} & = \text{Benefit} > \text{Harm} \\
\text{Equivocal Care} & = \text{Benefit} \approx \text{Harm} \approx 20\% \text{ of care} \\
\text{Inappropriate Care} & = \text{Benefit} < \text{Harm} \approx 10\% \text{ of care}
\end{align*}
\]

"Low value care"

What is low value care?

“Whether they had really been healed or were simply better in the natural course of the disease was a question which did not exist for Alyosha…”

~Fyodor Dostoevsky, 1879
What is low value care?

“Though the doctors treated him, let his blood, and gave him medications to drink, he nevertheless recovered.”

~Leo Tolstoy, 1869
Low value care is more than an academic exercise

• Low value care = patient care that provides no average benefit in specific clinical scenarios

• Low value care can harm patients both physically and financially

  • Cancer-causing radiation exposure from diagnostic imaging

  • Chasing false positives, complications, stress

  • Co-payments and high deductibles for tests and services
A Bigger Bite

Middle-class families’ spending on health care has increased 25% since 2007. Other basic needs, such as clothing and food, have decreased.

Percent change in middle-income households’ spending on basic needs (2007 to 2014)

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care</td>
<td>24.8%</td>
</tr>
<tr>
<td>Food at home</td>
<td>-3.6%</td>
</tr>
<tr>
<td>Housing</td>
<td>-6.0%</td>
</tr>
<tr>
<td>Total</td>
<td>-6.3%</td>
</tr>
<tr>
<td>Transportation</td>
<td>-6.4%</td>
</tr>
<tr>
<td>Total food</td>
<td>-7.6%</td>
</tr>
<tr>
<td>Food away from home</td>
<td>-13.4%</td>
</tr>
<tr>
<td>Clothing</td>
<td>-18.8%</td>
</tr>
</tbody>
</table>

Sources: Brookings Institution analysis of Consumer Expenditure Survey, Labor Department.

THE WALL STREET JOURNAL.
Why does low value care occur?

<table>
<thead>
<tr>
<th>Major Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training, Culture, Habit</td>
</tr>
<tr>
<td>Doing less seems riskier than doing more</td>
</tr>
<tr>
<td>Fear of lawsuit</td>
</tr>
<tr>
<td>Lack of time</td>
</tr>
<tr>
<td>Patient demands (perceived and real)</td>
</tr>
<tr>
<td>Financial incentives</td>
</tr>
<tr>
<td>Non-evidenced-based protocols</td>
</tr>
<tr>
<td>Lack of knowledge</td>
</tr>
<tr>
<td>Discomfort with uncertainty</td>
</tr>
<tr>
<td>Hospital-setting (ease of access to technology)*</td>
</tr>
<tr>
<td>Lack of continuity of care*</td>
</tr>
</tbody>
</table>

To reduce low value care, we need to change culture and improve care in more nuanced ways.

- The ABIM-Choosing Wisely Campaign: national initiative encouraging clinicians, patients to discuss low value care.

- Tasked US specialty societies to develop 5-10 specific clinical scenarios when services are low value (e.g., pre-op EKGs for all low-risk surgeries, imaging for routine low back pain).

- Is the campaign making a difference?
Rates of high-value and low-value imaging for low back pain before and after the Choosing Wisely campaign began, 2010–14.

Arthur S. Hong et al. Health Aff 2017;36:671-679
Choosing Wisely had a marginal impact on care

- Critiques say it is too weak of an intervention

- Proponents say that purpose was to just start a conversation; this is only the beginning of a culture change

- To increase impact, ABIM/Choosing Wisely began awarding grants to innovators who are reducing low value care

- Perfect timing: just as I came to UCLA in 2015, Catherine Sarkisian just received an ABIM Choosing Wisely grant to reduce low value care at LA County!
Reducing pre-operative testing for cataract surgery patients

• Routine pre-op testing for cataract surgery epitomizes low value care and occurs at high rates

• Even at DHS, low value pre-op care for cataract surgery occurs frequently

• In addition, pre-operative care leads to increased surgical wait time by extensive follow up of unimportant findings identified at pre-operative visits
PURPOSE

We evaluated a multidisciplinary quality improvement (QI) initiative at DHS to reduce low value pre-op care for cataract surgery patients
Methods: QI Intervention and Study Population

- QI Intervention: LAC+USC quality officer → IHI training → plan-do-study-act (PDSA)

- Patients undergoing cataract surgery at two urban academic medical centers within a large safety net health system, between 10/15/14-4/15/16
Measures and Statistical Analysis

• Measures included pre-op visits, labs, EKGs, adverse events, and total costs

• Pre-post difference-in-differences (DinD) analysis comparing amount of pre-op cataract care at LAC+USC (intervention site) vs. Harbor-UCLA (control)

• Performed a cost-analysis from the perspective of DHS health system (capitated), traditional fee-for-service health system, and society at large

• Logistic regression models adjusted for patient characteristics, time, and site
Results

• We identified 1,009 intervention and 959 control patients undergoing cataract surgery during the study period

• Mean age ~61 years old, ~53% female at both sites
Percent of Cataract Patients with Pre-Operative Medical Visits at LAC+USC (Intervention, n=1009) vs. Harbor-UCLA (Control, n=959) (%)

INTERVENTION

DinD -81%, p<0.001
Percent of Cataract Patients with Pre-Operative Medical Visits at LAC+USC (Intervention, n=1009) vs. Harbor-UCLA (Control, n=959) (%)
Percent of Cataract Patients with Pre-Operative Labs Ordered at LAC+USC (Intervention, n=1009) vs. Harbor-UCLA (Control, n=959) (%)
Percent of Cataract Patients with Pre-Operative EKGs Ordered at LAC+USC (Intervention, n=1009) vs. Harbor-UCLA (Control, n=959) (%) 

DinD -67, p<0.001
Cost Analysis of Investments and Estimated Savings from Three Different Perspectives

<table>
<thead>
<tr>
<th>Costs</th>
<th>DHS Costs</th>
<th>FFS Costs</th>
<th>Societal Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institute for Improvement (IHI) Quality Advisor part-time course for RN quality officer</td>
<td>-$58,600</td>
<td>-$58,600</td>
<td>-$58,600</td>
</tr>
<tr>
<td>20% FTE of RN quality officer</td>
<td>-$30,000</td>
<td>-$30,000</td>
<td>-$30,000</td>
</tr>
<tr>
<td>Savings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reassigned LVN</td>
<td>+$84,000</td>
<td>+$84,000</td>
<td>+$84,000</td>
</tr>
<tr>
<td>Medical visits, labs, EKGs</td>
<td>Unknown</td>
<td>-43,611</td>
<td>+43,611</td>
</tr>
<tr>
<td>Avoided lost work due to medical visits, tests</td>
<td>$0</td>
<td>$0</td>
<td>+$18,062</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missed surgeries</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
<tr>
<td>4 other QI projects</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
<tr>
<td>Net Costs in Year 1</td>
<td>-$4,600</td>
<td>-$48,211</td>
<td>+$57,073</td>
</tr>
<tr>
<td>Net Costs in Year 2</td>
<td>+$39,011</td>
<td>+$10,389</td>
<td>+$115,673</td>
</tr>
<tr>
<td>Net Costs in Year 3</td>
<td>+$39,011</td>
<td>+$10,389</td>
<td>+$115,673</td>
</tr>
<tr>
<td>TOTAL COSTS After 3 Years</td>
<td>+$73,422</td>
<td>-$27,433</td>
<td>+$288,419</td>
</tr>
</tbody>
</table>
Limitations

• Non-randomized study

• Difficult to tease out the impact of the intervention vs. the impact of pre-existing culture, limiting generalizability
Conclusions

• At a large safety net system, this QI initiative
  • Substantially reduced low value pre-operative care for cataract surgery patients

• Saved costs for the health system
Next Question: What can the cost distribution of low-value care tell us about how to reduce it?
“The best way we can make headroom for innovation in healthcare is eliminating low-value care”

• Traditionally, policy focus has been reducing high-cost low-value services

• Yet, few assessed range of costs of low-value care

• In this context, we used the Virginia All Payer Claims database to assess 44 measures of low-value care in 2014

Analysis of Cost Distribution of Low-Value Care

• Milliman MedInsight Calculator: applies Choosing Wisely™ recommendations, other guidelines to claims data)

• Costs = Average amount of money per service paid to a provider across all payers (including patients’ out-of-pocket spending)

• Among 5.5 million beneficiaries, 1 in 5 Virginians received at least 1 low-value service in 2014

• The 44 low-value services were delivered 1.7 million times, which cost $586 million (~2% of healthcare costs) in Virginia
### The 3 most costly low-value services in Virginia, 2014

<table>
<thead>
<tr>
<th>Low-value service</th>
<th>Mean cost per service</th>
<th>Total unnecessary costs (millions)</th>
<th># Services deemed low value</th>
<th>Waste Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline lab tests for low risk patients having low-risk surgery</td>
<td>$487</td>
<td>$227.8</td>
<td>467,884</td>
<td>79%</td>
</tr>
<tr>
<td>Stress cardiac or other cardiac imaging in low-risk, asymptomatic patients</td>
<td>$3,404</td>
<td>$93.2</td>
<td>27,385</td>
<td>11%</td>
</tr>
<tr>
<td>Annual EKGs or other cardiac screening for low-risk, asymptomatic patients</td>
<td>$298</td>
<td>$41.0</td>
<td>137,666</td>
<td>5%</td>
</tr>
</tbody>
</table>
Volume of low-value services in Virginia in 2014, by quartiles of cost.

Blue colors signify low-cost services.

John N. Mafi et al. Health Aff 2017;36:1701-1704
Costs of low-value services in Virginia in 2014, by quartiles of cost.

Surprising lesson: don’t discount the “small potato” items, because they tend to add up!!

John N. Mafi et al. Health Aff 2017;36:1701-1704
Conclusions and Implications for Policy

• Among these measures, low-cost, high-volume care contributes most to unnecessary spending

• Important implications for reducing spending without harming patients, or reducing quality or access to care

• Most focus has been on high-cost care, but this gives us leverage to begin a pragmatic path forward

• Low-cost items less likely to threaten particular clinical specialty or advocacy group
Tackling Low-Value Care: A New “Top Five” for Purchaser Action

Jason D. Buxbaum, John N. Mafi, A. Mark Fendrick

NOVEMBER 21, 2017
Multi-Stakeholder Task Force Identifies 5 Commonly Overused Services Ready for Action

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Diagnostic Testing and Imaging Prior to Surgery</td>
</tr>
<tr>
<td>2.</td>
<td>Vitamin D Screening</td>
</tr>
<tr>
<td>3.</td>
<td>PSA Screening in Men 75+</td>
</tr>
<tr>
<td>4.</td>
<td>Imaging in First 6 Weeks of Low Back Pain</td>
</tr>
<tr>
<td>5.</td>
<td>Branded Drugs When Identical Generics Are Available</td>
</tr>
</tbody>
</table>

We challenge policymakers and payers to engage physician groups and reduce these five low-value services.

Take Home Points

• Value is defined as health outcomes/costs

• We must be clear what we mean by low value care; for me it’s when clinical benefit is no greater (or worse) than harm to the patient, and cost savings are a secondary issue

• Reducing low value care is *really* hard and will require contributions from everyone working together, and even seemingly small actions can make a big impact!
Thank You!

• Catherine Sarkisian, Cheryl Damberg, Carol Mangione, Mark Fendrick, and Bob Brook for their mentorship

• Virginia Project Funder: Medicare and Medicaid Services State Innovation Model Initiative (SIM) Grant (Grant No. 1G1CMS331384-01-00)


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