De-implementing low value health services

Paul G. Barnett, PhD
David Au, MD, MS
Eve Kerr, MD, MPH

January 18, 2017
Talk Overview

- The problem of unneeded care
- What is a low value service?
- Catalogs of low value services
- Current HSR&D research
- Priorities for de-implementation (discussion)
- Questions
The problem of unneeded care

- Estimated that 30% of US health spending is wasted
- Most important component is unneeded services
- $210 billion of unnecessary health services in the U.S. in 2009

--Institute of Medicine (2012)
What is low value care?

- Care that is not effective
- Care that causes more harm than benefit
- Care that yields too little benefit to justify cost
Review of Cost Effectiveness Analysis (CEA)

- Standard method for evaluating health care interventions
- Find incremental cost and outcomes of innovation relative to standard care
- Outcomes expressed as quality adjusted life year (morbidity adjusted survival)
- Estimates the cost per quality adjusted life year
Review CEA (cont.)

- Standard care dominates the innovation if:
  - If it is more effective and less costly
  - If it is more effective and the same cost
  - If it is same effectiveness and less costly

- In the absence of dominance, find the Incremental Cost-Effectiveness Ratio (ICER)
Incremental Cost-Effectiveness Ratio (ICER)

\[
\frac{\text{Cost}_{\text{INNOVATION}} - \text{Cost}_{\text{STANDARD}}}{\text{QALY}_{\text{INNOVATION}} - \text{QALY}_{\text{STANDARD}}}
\]

- Decision maker compares ICER to “critical threshold” of what is considered cost-effective ($ per QALY)
Interpreting the ICER

- Innovations with ICER > “threshold” are low value
- U.S. threshold may be $100,000/QALY
- E.g. Standard care is more cost effective if ICER of intervention > $100,000/QALY
Catalogs of Low Value Services

- Rand Corp.
- UK NICE
- US Institute of Medicine
- Choosing Wisely Initiative
- Others
Rand Corporation list of inappropriate services

- Rand Corp. generated one of the first listings
- Updated in 2005
- Most recent listing identifies hospitalization, surgery, drugs

---Schuster, McGlynn, & Brook (2005)
National Institute on Health and Care Excellence (NICE)

- Proposed disinvestment by U.K. National Health Service
  --Pearson & Littlejohns (2007)

- NICE “Do not do” list found in the “Savings and productivity collection”
  https://www.nice.org.uk/guidance
Institute of Medicine

- Listed ineffective and harmful treatments widely used in the U.S

--US Institute of Medicine (2008)
Oregon Health Services Commission

- Oregon Medicaid program has ranked services by value
- Threshold set of “sufficient value”
- Coverage of managed care plans reflect these priorities

--Saha (2013)
National Priorities Partnership

- Consortium of health care organizations listed inappropriate services
  --National Priorities Partnership (2008)
Network for Excellence in Health Innovation (NEHI)

- Identified peer reviewed studies identifying waste or inefficiency
- 460 studies 1998 - 2006
Tufts Cost-Effectiveness Registry

- Identified low-value services
- Goal to define services that could be excluded from a value-based insurance coverage

--Neumann et al (2010)
American College of Physicians workgroup

- 37 examples of low value diagnostic and screening tests

--Qaseem et al (2012)
Choosing Wisely

- Most recent effort in U.S.
- American Board of Internal Medicine Foundation and Consumer Reports
- 70 medical specialty societies identified 400 examples of low-value care
  --Cassel & Guest (2012)
- VA committee to implement
 Estimate of Choosing Wisely impact

- Estimated annual savings from following 11 of the Choosing Wisely services
- Antipsychotics in dementia $765 million
- Unneeded vitamin D screening $199 million
- 6 services savings of < $10 million

--Colla et al (2015)
Limitations of lists

- Strength of evidence not always clear
- Indication may be difficult to ascertain
- Need for prioritization
Current HSR&D Research

- David Au MD, MS
  Professor of Medicine, University of Washington
  Director, Center of Innovation for Veteran-Centered Value-Driven Care, VA Puget Sound Health Care System

- Eve Kerr MD, MPH
  Professor of Internal Medicine, University of Michigan
  Director, Center for Clinical Management Research, VA Ann Arbor Health Care System
De-implementation of Inhaled Steroids to improve Care & Safety of patients with COPD (DISCUSS COPD)

David H Au, MD MS
Behalf of
Improving Safety and Quality through evidence-based deimplementation of ineffective diagnostics and therapeutics
COPD Guidelines

• ICS should be limited to:
  – Patients with severe or very severe airflow obstruction (AFO) as determined by spirometry
  – Patients with frequent exacerbations

• Not provided to:
  – Mild-moderate obstruction
  – No obstruction (no COPD)
  – Limited benefit but real risk
    • Pneumonia (12% increased risk)
    • Oropharyngeal candidiasis
    • Skin bruising

Ernst AJRCCM 2007, Suissa Thorax 2013, Calverley NEJM 2007, GOLD Guidelines
Assessing inappropriate ICS use
(Broader COPD quality issue)

- Spirometry to confirm Dx
  - ~50% of patients get spirometry

- Other clinical indications for ICS
  - Asthma
  - COPD exacerbations
Alternate approaches available and safer

Incidence of Pneumonia
3.2% in LABA/LAMA
4.8% in LABA/ICS
(p=0.02)
Discontinuation of ICS leads to lower risk of pneumonia

Figure 2. Hazard ratio (solid line) and 95% confidence limits (dashed lines) of pneumonia as a function of the time since discontinuation of ICS use estimated by cubic splines models fit by conditional logistic regression, adjusted for age, gender, prior hosp (pna, COPD), recent oral steroids, inhaled meds, other medications for comorbid illness)


aRR:0.63 (0.60-0.66)
Broader issues and questions

• Primary care and organizational efforts do not focus on COPD care
• How do you decrease the inappropriate use of medications?
• What is the role of specialist for patients at the population management level?
• How to support efforts without being intrusive into primary care settings?

Joo COPD 2013, Rinne Am J Manag Care 2016
Quality Aims and Design

• **Primary aim:**
  Decrease use of low value ICS among pts with mild-mod COPD: pulmonary specialist engage at population health

• **Secondary aims to assess:**
  1. Acceptability of the intervention to PCPs and Veterans
  2. Rates of pneumonia
  3. COPD exacerbations and mortality
  4. Budget impact of implementation costs.

• **Design:**
  1. Clustered randomized trial of primary care teamlets (PACT teamlets) and their patients
  2. Intervention targeting the primary care provider
Anticipated Patients

COPD Dx (n=8,495)

Patients with PFT (n=3527)

58% Patients without PFT (n=4968)

 Patients with ICS (n=1299)

63% Patients without ICS (n=2228)

Patients with ICS Indication (N=507)

COPD without other ICS indication (n=792)

40% Patients with severe AFO

46% Patients with severe AFO

Mild-Moderate*

54% of Patients

No clinical Indication for ICS
Design & Intervention

Patient Prescribed ICS, COPD Dx and spirometry → Chart Abstraction → Team Chart Review

- Primary Care
- Pulmonology
- Develop recommendations

CPRS note-Non-visit consult
- Document recommendations
- Pre-filled order sets

Usual Care

PCP visit → 2-way communication
- CPRS
- Secure e-mail
- Phone
- E-Consult

2 weeks post visit → Provider/Patient outcome surveys

Primary Outcome
- Acceptance of short and long term recommendations

Secondary Outcomes
- Safety
- Provider and Patient satisfaction
- Costs

Identify ICS de-implementation candidates using CPRS & CDW
Identify upcoming PCP visit
1 week pre PCP visit
6 months
As part of an ongoing quality improvement initiative within pulmonary, our team has reviewed your patient's medical record to review their use of inhaled corticosteroids. Our team from pulmonary medicine includes Drs Au, Feemster, xxxxx, and Wiener (Bedford VA).

We have entered any recommendations as orders for you to review, modify as you see fit and sign, if agreeable. If you have questions, please feel free to contact us by encrypted e-mail (XXXXXXX@va.gov), CPRS, Pulmonary SCAN-ECHO, E-Consult.
Example of CPRS note

May 04,16 (c) PULMONARY NON-VISIT IFC (PUGET SOUND) Cons Consult #: 4951957

RECOMMENDATIONS:
- Tapering and discontinuing inhaled corticosteroid as follows
  - Discontinue symbicort
  - Initiate olodaterol 2 actuations QDay
  - Initiate mometasone 1 puff QD for 1 month then stop
- Continue albuterol and Tiotropium

RATIONALE:
The patient carries a diagnosis of COPD and most recent spirometry suggests moderate airflow limitation. He is currently treated with "triple therapy"

- Symbicort [Budesonide 80 mcg/Formoterol 4.5 mcg BID]
- Tiotropium 18 mcg once daily
- Albuterol 90 mcg bid prn

Very limited evidence of additional benefit for patients with mild-moderate disease having benefit from triple therapy. Most recent guidelines suggest that inhaled corticosteroids are indicated for patients who have severe obstruction (less than 50% predicted) and are experiencing frequent exacerbations (2 or more per year). Inhaled corticosteroids have been also shown in multiple randomized trials to increase the risk of pneumonia.
Additional information can be found at:

WISDOM Trial
http://www.nejm.org/doi/full/10.1056/NEJMoal407154#t=articleTop

*GOLD guidelines 2014, available from:

*VA/DOD Clinical Practice Guideline for the Management of Outpatient Chronic Obstructive Pulmonary Disease, Version 3.0, 2014, available from:

/es/
David Hsiang-SHan Au, MD
Staff Physician
Signed: 05/04/2016 16:06

====================================================================================================
Questions?
Assessing When to Stop or Scale Back Unnecessary Routine Services: The ASSURES Study

January 18, 2017
HERC Seminar

Eve A. Kerr, MD, MPH
VA Center for Clinical Management Research & University of Michigan Medical School
“... a substantial amount of health care involves the long-term use of medication interventions for chronic and ongoing conditions, such as diabetes. Little guidance exists on when physicians and patients should begin the process for deintensifying medical services – stopping or scaling back the intensity or frequency of medical interventions that are currently part of a patient’s ongoing management.”
Mr. H and the Case of Too Many Medications

- Mr. H is a 77-year-old man with diabetes and chronic kidney disease.
- He takes lisinopril, chlorthalidone, atorvastatin, aspirin, and acetaminophen for back pain.
- He is also on glipizide 10 mg BID and metformin 1000 mg BID.
- His BP is 125/65 mm Hg and Hemoglobin A1c is 6.5%.
Predicted Probability of De-intensification by Hemoglobin A1C Levels and Life Expectancy

## What Do VA PCPs Think About De-intensification of Medications for Mr. H?

<table>
<thead>
<tr>
<th>Question</th>
<th>% Agree/Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think this patient would benefit if his HbA1c is maintained below 7.0%.</td>
<td>38.6%</td>
</tr>
<tr>
<td>I would worry that reducing his diabetes medication could leave me vulnerable to a future malpractice claim.</td>
<td>23.5%</td>
</tr>
<tr>
<td>I would worry that reducing his diabetes medication would lead to an HbA1c that falls outside of current performance measures.</td>
<td>42.1%</td>
</tr>
</tbody>
</table>

*Caverly TJ, et al. JAMA IM 2015*
Specific Aims:

• To identify and validate clinical indications for de-intensification in primary care

• To assess prevalence and reliability of measures of de-intensification in VHA

• To develop multi-component strategies to disseminate and implement de-intensification measures
Aim 1: To identify and validate clinical indications for de-intensification in primary care

Preliminary Results from Step 1:

- 768 recommendations met the inclusion criteria
- Study investigators identified 419 as important in VA, valid, and feasible to measure
- After grouping similar recommendations and prioritizing internally, 46 were distributed to our Advisory Council for further prioritization
- 32 were ultimately prioritized by the Advisory Council
Aim 2: To assess prevalence and reliability of measures of de-intensification in VHA

• Determine the data source(s) required
  – Automated data, manual medical record abstraction, other

• Outline the measure using the measure specifications (e.g., numerator, denominator, exclusions) established in Aim 1

• Generate the measures (i.e., characterize the prevalence of de-intensification in VHA)

• Examine reliability of the measure, variation in de-intensification rates across sites, and predictors of de-intensification
Aim 3: To develop multi-component strategies to disseminate and implement de-intensification measures

• Conduct collaborative decision-making sessions with patients and providers in order to identify:

  1. Gaps in understanding and potential barriers to deploying de-intensification measures
  2. A consensus on strategies to address patient, provider, motivational, and/or organizational challenges to implementing appropriate de-intensification measures

• Synthesize findings from the above sessions and other Aims into practical intervention strategies
“Balancing the medical profession’s focus on aggressively treating patients who are likely to benefit with an explicit consideration of when to deintensify treatments when they are no longer useful or are potentially harmful, and doing so in a manner that is respectful to the patient-physician relationship and promotes shared decision making, is the next frontier for improving care quality.”
QUESTIONS?
Unneeded CD4 testing

- Routine CD4 testing no longer needed for HIV+ patients with good viral control
- VA providers reduced testing by 11% over 4 years, saving $196,000 annually
- Testing could be reduced a further 29%, saving an additional $600,000 annually

Inappropriate low-back MRI

- MRI not needed for new onset, uncomplicated low-back pain
- 31% - 59% of VA lumbar spine MRIs are not appropriate
- 11% of ordering providers account for 50% of inappropriate scans

--Avoundjian (2016), Gidwani (2016)
Inappropriate low-back MRI

- Mixed methods study (2016-2019)
- Qualitative Interviews: What distinguishes primary care providers who order many lumbar spine MRIs?
- Quantitative Study: What is the effect of inappropriate scans on surgery, pain, pain medications, cost?
How to set priorities?

- Disinvestment programs proposed for the Australian health plan
- Criteria for identifying and prioritizing interventions

--Elshaug et al (2009)
Elshaug criteria used in technology assessment

- Cost impact -- unit cost and volume
- Health impact in Quality Adjusted Life Year
- Availability of cost-effective alternative
- Effect on equity (access by patient subgroups)
- Strength of evidence
- Disease burden in affected patients
How would you prioritize? (poll)

Which service would you de-implement first?

#1: Harmful service
   -100 QALYs $20 million cost

#2: Ineffective service
   +0 QALYs $100 million cost

#3: Low-value service
   +1,000 QALYs $600 million cost
CEA perspective

- If savings can be reinvested in care that costs $20,000/QALY
  - #1: +100 + 1,000 = 1,100 QALY gain
  - #2: 0 + 5,000 = 5,000 QALY gain
  - #3: -1,000 + 30,000 = 29,000 QALY gain
References

References

- Gidwani et al (2016). Inappropriate order of lumbar spine magnetic resonance imaging: are providers choosing wisely? American J Managed Care 2016;22(2):e68-e76


References

References