Physician-driven variation in low-value healthcare services in oncology

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Thank you

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Study collaborators
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Disclosures

None.
Low-value service use is widespread in oncology

- Low-value services and drugs are associated with patient harm, excess costs to the healthcare system, and other negative effects.

- There is wide variation in the prescribing of low-value healthcare services and drugs across the U.S.
  - Regional, hospital, individual provider level variation. (IOM, 2013)
  - Opportunities to intervene.

- Individual provider level is an actionable level of intervention.

Source: IOM, “Variation in health care spending: Target decision making, not geography,” 2013
Critical question: What drives physicians to prescribe low-value healthcare services and drugs?

Research Questions:

1. Do physicians exhibit consistent behavior?
2. Does oncology practice setting influence physicians’ behavior?

• Clinical context: cancer care

• A clear understanding of patterns of physicians’ behavior is needed to inform interventions.
  – If service use is consistent → interventions should be physician-specific.
  – If service use is not consistent → interventions should be service-specific.
Hypothesis: physicians’ past use predicts current use
Test of hypothesis using ABIM Foundation’s Choosing Wisely Campaign

<table>
<thead>
<tr>
<th>Medical specialty society</th>
<th>Item description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCO</td>
<td>Don’t perform PET, CT, and radionuclide bone scans in the staging of early prostate cancer for patients at low risk for metastasis</td>
</tr>
<tr>
<td>ASCO</td>
<td>Don’t perform PET, CT, and radionuclide bone scans in the staging of early breast cancer for patients at low risk for metastasis</td>
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<tr>
<td>ASCO</td>
<td>Don’t perform surveillance testing or imaging for asymptomatic individuals who have been treated for breast cancer with curative intent</td>
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<tr>
<td>ASTRO</td>
<td>Don’t routinely use IMRT to deliver whole breast radiotherapy as part of breast conservation therapy</td>
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<tr>
<td>ASTRO</td>
<td>Don’t routinely use extended fractionation schemes (&gt;10 fractions) for palliation of bone metastases.</td>
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www.choosingwisely.org
Study Methods

• Data source: population-based Surveillance, Epidemiology, and End Results (SEER) Medicare linked data.

• Study sample and time period:
    • Example: early stage imaging, Stage 0-II breast cancer, with surgery within 6 months of diagnosis and no neoadjuvant treatment.
    – Each patient was assigned to an accountable physician.

• Analysis: Multivariable logistic regression, accounting for patient characteristics.
  – Outcome: patient’s receipt of low-value service.
  – Likelihood that physician’s patient received service conditioned on the physician’s last patient having received that service.

• Key exclusion criterion: Patients whose physician had only patient in dataset.
## Results

<table>
<thead>
<tr>
<th></th>
<th>Imaging, early stage prostate</th>
<th>Imaging, early stage breast</th>
<th>Imaging post-treatment surveillance, breast</th>
<th>IMRT for whole breast radiotherapy</th>
<th>Extended fractionation schemes, palliation bone metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of patients</td>
<td>32,093</td>
<td>89,006</td>
<td>44,216</td>
<td>25,271</td>
<td>3,464</td>
</tr>
<tr>
<td>Total # of physicians</td>
<td>2,559</td>
<td>4,285</td>
<td>2,596</td>
<td>1,428</td>
<td>695</td>
</tr>
<tr>
<td>Proportion of overall use</td>
<td>0.41</td>
<td>0.14</td>
<td>0.26</td>
<td>0.18</td>
<td>0.35</td>
</tr>
<tr>
<td>Prior patient received service, adjusted odds ratio [95% CI]</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>No</td>
<td>ref</td>
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Source: Lipitz-Snyderman et al, JAMA Internal Medicine, 2016
What is driving this behavior?

Research Questions:
1. Do physicians exhibit consistent behavior?
2. Does oncology practice setting influence physicians’ behavior?

- Shift in outpatient oncology care from independent physicians’ offices to hospital outpatient departments.
  - Different reimbursement structures prompt questions about impact on cost and quality.

- Clinical context: outpatient cancer care for patients with advanced disease.

- Hypothesis: physicians in private practice oncology settings order more low-value, expensive drugs than physicians in hospital outpatient settings.
Conclusions and Implications

• Findings support the notion that physicians exhibit consistent behavior with regards to using low-value services in oncology.
  – Early insight into these patterns in claims.

• Incomplete understanding of mechanisms through which patterns exist.
  – Support that oncology practice setting matters.
  – Further study is warranted to disentangle the mechanisms through which oncology practice setting and other factors influences physicians behavior.

• Implications for interventions at the physician level to reduce avoidable patient harm and costs.
Thank you

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