Developing the Washington State Community Cancer Report

Scott Ramsey, MD, PhD, Director, Hutchinson Institute for Cancer Outcomes Research, Fred Hutchinson Cancer Research Center
Mission

Eliminate cancer and related diseases as causes of human suffering and death.

Improve the effectiveness of cancer prevention, early detection and treatment services in ways that reduce the economic and human burden of cancer.
The Age of Information at your Fingertips...

Hotel Max

2,423 reviews | #39 of 106 Hotels in Seattle
620 Stewart Street, Seattle, WA 98101-1212

Customer Reviews

🌟🌟🌟🌟 1,705
4.7 out of 5 stars

5 star 83%
4 star 9%
3 star 4%
2 star 2%
1 star 2%

See all 1,705 customer reviews ➤
Regional Oncology Performance and Cost: Age of ???
THE MARKET FOR "LEMONS": QUALITY UNCERTAINTY AND THE MARKET MECHANISM *

GEORGE A. AKERLOF

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I. INTRODUCTION

This paper relates quality and uncertainty. The existence of goods of many grades poses interesting and important problems for the theory of markets. On the one hand, the interaction of quality differences and uncertainty may explain important institutions of the labor market. On the other hand, this paper presents a struggling attempt to give structure to the statement: “Business in underdeveloped countries is difficult”; in particular, a structure is given for determining the economic costs of dishonesty. Additional applications of the theory include comments on the structure of money markets, on the notion of "insurability," on the liquidity of durables, and on brand-name goods.
The Market For Lemons...

Economic equilibrium $S(p) = D(p, \mu)$

$$U_1 = M + \sum_{i=1}^{n} x_i$$

$$U_2 = M + \sum_{i=1}^{n} \frac{3}{2} z_i$$

$$D(p, \mu) = \begin{cases} 
\frac{(Y_2 + Y_1)}{p} & p < \mu, \\
Y_2 / p & \mu < p < 3\mu/2, \\
0 & p > 3\mu/2, 
\end{cases}$$
Economic equilibrium $S(p) = D(p, \mu)$

\[ U_1 = M + \sum_{i=1}^{n} x_i \]

\[ U_2 = M + \sum_{i=1}^{n} \frac{3}{2} x_i \]

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\frac{Y_2}{p} & \text{if } \mu < p < 3\mu/2, \\
0 & \text{if } p > 3\mu/2, 
\end{cases} \]
We believe that every cancer patient should get quality care that meets their goals at a reasonable cost, wherever they live.
An Explosion of Quality Measures

- US quality measurement development and tracking activities are pursued by at least 27 organizations and 36 programs, using 1,235 individual measures*

- An inventory of measures used or promoted by CMS, National Quality Forum, National Committee for Quality Assurance and the Joint Commission numbers over 1000*
US Physician Practices Spend More Than $15.4 Billion Annually To Report Quality Measures
2016; 35(3):401-406

EXHIBIT 1

Hours spent per physician per week dealing with external quality measures, 2014

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mean number of hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total effort</td>
<td>12</td>
</tr>
<tr>
<td>Entering information</td>
<td>12</td>
</tr>
<tr>
<td>Reviewing quality reports from external entities</td>
<td>5</td>
</tr>
<tr>
<td>Tracking quality measure specifications</td>
<td>5</td>
</tr>
<tr>
<td>Developing and implementing processes to collect data</td>
<td>5</td>
</tr>
<tr>
<td>Collecting and transmitting data</td>
<td>5</td>
</tr>
</tbody>
</table>

**Source** Authors’ analysis of responses to web-based survey of physician practices conducted for this research.

Slide courtesy of Eve Kerr
Performance Measurement in Oncology: Concerns

- Multitude of metrics
  - e.g., ABIM/ASCO-Choosing Wisely, QOPI, OCM

- “Top-Down” approach to developing and reporting metrics
  - Lack of input from multiple stakeholders

- Lack of transparency
  - Methods of metric creation and reporting

- Unproven assumption that reporting will change practice
  - Lack of resources or infrastructure to facilitate change
Stakeholder engagement is critical to our mission

Washington State Oncology Clinics included in the Community Cancer Care report
HICOR is a trusted convener of cancer care stakeholders
Moving Toward Transparency: Collaborative Regional Effort

- Regional Metrics Quality Report
- Community Cancer Care Report High Performing Clinics - Quality

2014: Consensus on Initial Metrics
2015: Regional Metrics Quality and Cost
2016: 
2017: 
2018: Community Cancer Care Report All Clinics – Quality and Cost
Methods: Metric Selection & Community Engagement

• Quality metrics selected from nationally-recognized measures through structured process

• Iterative process of metric development and release

Draft Community Cancer Care Report → Reviewed feedback from VCC Summit

Interim Community Cancer Care Report → Incorporated feedback from stakeholders

Final Community Cancer Care Report → Vetted by Steering Committee & Data Methods Committee

Provider Meetings  Patient Meetings  Payer Meetings
Community Cancer Care in Washington State: Cost and Quality Report 2018

www.fredhutch.org/cancer-care-report

Our goal is to promote TRANSPARENCY so that providers, payers, patients and researchers have access to the same high quality information in order to:

• Enable sharing of best practices
• Facilitate collaboration across traditional boundaries
• Develop shared solutions
• Test feasibility, effectiveness and scalability of new models of care
Health Care Claims
- Premera Blue Cross
- Regence BlueShield
- Uniform Medical Plan | Medicare

Cancer Registries
- CSS-Puget Sound SEER
- Washington State Cancer Registry

Over 160,000 patients at Diagnosis
Over 60,000 at Time of Death

Reporting Years: 2014 – 2016
What’s in the report

**Quality Measures**

- **Recommended Treatment**
  - Breast, Colorectal, and Lung Cancer
  - Breast Cancer

- **Hospitalization During Chemotherapy**

- **Follow-up Testing after**
  - Breast, Colon, and Lung Cancer Treatment
  - Breast Cancer Treatment

- **End of Life Care**

**Cost of Episodes of Care**

- Treatment period
- 6 months after first chemotherapy
- 13 months after last treatment
- Last 30 days of life
Eligible Patients

- Washington state adult cancer patients enrolled in:
  - Medicare
  - Premera Blue Cross
  - Regence BlueShield
  - Uniform Medical Plan
- Reporting Years: 2014–2016
- Additional specifications based on the particular measure

Eligible Clinics

- Attribute patients to clinics
- Clinics with at least 40 or 50 patients per metric
**QUALITY**

- Apply Hierarchical Generalized Linear (HGLM) statistical model
- Include risk adjustment if appropriate
- Clinic risk-standardized rate = \( \frac{\text{Clinic predicted rate}}{\text{Clinic expected rate}} \times \text{Region average} \)

**COSTS**

- Include all costs during the episode
- Winsorize costs at the 5th and 95th percentiles by cancer type
- Apply Hierarchical Generalized Linear (HGLM) statistical model
- Include risk adjustment
- Clinic risk-standardized average episode cost per patient = \( \frac{\text{Clinic predicted average episode cost per patient}}{\text{Clinic expected average episode cost per patient}} \times \text{Region average} \)

**QUALITY SCORE**

- If lower score = higher quality, subtract region average from clinic risk-standardized rate
- If higher score = higher quality, subtract clinic risk-standardized rate from region average
- Clinic’s quality score = sum of the above differences for each quality metric in the composite

Display quality score against costs
Cost and Quality Metric Example

Hospitalization and Emergency Department admissions during the first 6 months from the start of chemotherapy
**ED Visits**
- 29.1% had at least one ED visit
- 13 percentage point difference between highest and lowest performing clinics

**Hospitalizations**
- 37.4% had at least one hospital stay
- 13.2 percentage point difference between highest and lowest performing clinics

52% of patients starting chemotherapy had an ED or IP stay within 6 months
Strong negative relationship, suggesting that efforts to improve quality may also lower costs.

Regional average cost: $51,561
Follow-up episode average length: **168 days**
Cost range: **$19,090**

The quality score: difference of **22.6%**
1A: Recommended Treatment

1B: Recommended Treatment (Breast)

2: Chemo Hospitalization

3A: Follow-Up Imaging

3B: Follow-Up Testing (Breast)

4: End of Life

Low variation in quality
High variation in cost
1A: Recommended Treatment

1B: Recommended Treatment (Breast)

2: Chemo Hospitalization

3A: Follow-Up Imaging

3B: Follow-Up Testing (Breast)

4: End of Life

High variation quality and cost
## Results

<table>
<thead>
<tr>
<th>Measure</th>
<th>Clinic-Level Ranges</th>
<th>Relationship between Quality and Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Summary Quality</td>
<td>Average Episode Cost</td>
</tr>
<tr>
<td>Recommended Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast, Lung, Colorectal</td>
<td>-5.4% to 1.7%</td>
<td>$62,000 to $84,000</td>
</tr>
<tr>
<td>Breast only</td>
<td>-6.4% to 1.8%</td>
<td>$63,000 to $99,000</td>
</tr>
<tr>
<td>Advanced Imaging after Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast, Lung, Colon</td>
<td>-1.0% to 0.7%</td>
<td>$16,000 to $20,000</td>
</tr>
<tr>
<td>Hospitalizations during Chemotherapy</td>
<td>-14.6% to 8.0%</td>
<td>$43,000 to $62,000</td>
</tr>
<tr>
<td>Advanced Imaging and Tumor Markers after Treatment</td>
<td>-21.2% to 20.9%</td>
<td>$12,000 to $16,000</td>
</tr>
<tr>
<td>End of Life Care</td>
<td>-30.4% to 31.4%</td>
<td>$12,000 to $17,000</td>
</tr>
</tbody>
</table>

* Zero represents the regional average
Optimal Uses of Performance Metrics

• Drive quality improvement within clinics
• Facilitate collaboration to improve care in the community
• Share best practices

Rules of Use

For at least two years after release of this Report, its data **may not** be used for the following:

• Establishing coverage networks
• Designing employee benefit packages
• Negotiating contracts without mutual agreement from all involved parties
• Clinic or payer advertising or marketing
Making results available to the community

HICOR IQ

Built to engage.

A single resource to be used by payers, providers, and researchers for information about quality and cost of cancer care.
Impact

- Policy setting (Bree Collaborative and HealthCare Authority)
- Value-based payment models
- Quality improvement initiatives
- Community clinic interest in cancer care delivery research
- Partnerships with novel partners
Use data visualization platform to understand barriers to care and challenges for vulnerable populations

Use machine learning, biosensors and smartphone app for early identification of treatment-related symptoms to reduce ER visits during chemotherapy
Performance Reporting: Closing Thoughts

• Play the long game – and set expectations accordingly
  • At the region level, small numbers increase the likelihood of statistical artifact
    – Financial penalties may have perverse effects
  • Changing performance swill take time

• Consider distinctions vs. differences
  • Provider guidance on what constitutes clinically meaningful improvement

• In some cases, it may just come down to cost
  • If everyone is doing well, reward efficiency
Performance Reporting: What Value to Patients?

• Considerations:
  • Patient experience not yet captured
  • Many measures won’t apply to their cancer type
  • May not address “What matters to you”

• Cost Analyses may need different divisions
  • Dividing data by insurance or plan type may be more useful for patients
  • In- and out-of-pocket costs are important to measure
Thank you to the Community Cancer Care Report team

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