Challenges in keeping score: Case mix indices and tracking who does the hard stuff

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VISN 7
Learning Objectives

- Explain the importance of demonstrating medical complexity
- Articulate the importance of risk adjustment
- Contrast the “macro” and “micro” approach of risk adjustment
“Hi, we’re doctors from other hospitals. We’d like to bid on your treatment.”
What is our role in the House of Medicine?

9 markers for patient complexity

1. # Comorbidities
2. # Uniquely prescribed medications
3. Presence of a mental health condition
4. # Physician types seen by each patient
5. Total # physicians involved in each patient’s care
6. # Days spent in a hospital
7. # Emergency department visits
8. Risk of new placement into long-term care
9. Risk of all-cause death
<table>
<thead>
<tr>
<th>Physician Type</th>
<th>Comorbidities, Mean (95% CI), No.</th>
<th>Risk of Mental Health Condition (95%)</th>
<th>Prescribed Medications, Mean (95% CI), No.</th>
<th>Physician Types, Mean (95% CI), No.</th>
<th>Physicians, Mean (95% CI), No.</th>
<th>Days Spent in Hospital (95% CI), No.</th>
<th>Emergency Department Visits, Mean (95% CI), No.</th>
<th>Likelihood of Long-term Care Placement (95%)</th>
<th>Risk of Mortality (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nephrologist</td>
<td>4.2 (4.2-4.3)^b</td>
<td>0.22 (0.22-0.23)^b</td>
<td>14.2 (14.2-14.3)^b</td>
<td>5.1 (5.1-5.1)^b</td>
<td>11.0 (11.0-11.0)^b</td>
<td>11.1 (11.0-11.1)^b</td>
<td>1.7 (1.7-1.7)^b</td>
<td>0.020 (0.018-0.022)^b</td>
<td>0.066 (0.063-0.069)^b</td>
</tr>
<tr>
<td>Infectious disease specialist</td>
<td>2.7 (2.7-2.8)^b</td>
<td>0.29 (0.28-0.29)^b</td>
<td>12.0 (12.0-12.1)^b</td>
<td>5.5 (5.5-5.6)^b</td>
<td>13.0 (12.9-13.1)^b</td>
<td>15.0 (14.9-15.0)^b</td>
<td>2.6 (2.6-2.6)^b</td>
<td>0.014 (0.012-0.016)^b</td>
<td>0.043 (0.040-0.046)^b</td>
</tr>
<tr>
<td>Neurologist</td>
<td>2.8 (2.8-2.8)</td>
<td>0.27 (0.26-0.27)^b</td>
<td>9.6 (9.6-9.7)</td>
<td>4.2 (4.2-4.3)</td>
<td>7.9 (7.9-8.0)</td>
<td>5.6 (5.6-5.6)</td>
<td>1.3 (1.3-1.3)</td>
<td>0.011 (0.011-0.012)^b</td>
<td>0.022 (0.021-0.023)</td>
</tr>
<tr>
<td>Respiriologist</td>
<td>2.8 (2.8-2.8)</td>
<td>0.21 (0.21-0.22)^b</td>
<td>10.6 (10.6-10.6)</td>
<td>4.4 (4.4-4.3)</td>
<td>8.0 (8.0-8.0)</td>
<td>4.5 (4.4-4.5)</td>
<td>1.1 (1.1-1.1)</td>
<td>0.009 (0.008-0.010)</td>
<td>0.037 (0.036-0.039)</td>
</tr>
<tr>
<td>Hematologist</td>
<td>2.9 (2.8-2.9)^b</td>
<td>0.20 (0.21-0.22)</td>
<td>10.3 (10.2-10.3)</td>
<td>5.0 (4.9-5.0)^b</td>
<td>9.7 (9.7-9.8)^b</td>
<td>8.2 (8.2-8.3)^b</td>
<td>1.5 (1.5-1.6)^b</td>
<td>0.010 (0.009-0.013)</td>
<td>0.050 (0.046-0.054)^b</td>
</tr>
<tr>
<td>Rheumatologist</td>
<td>3.1 (3.0-3.1)^b</td>
<td>0.19 (0.18-0.21)</td>
<td>10.7 (10.7-10.8)</td>
<td>4.2 (4.1-4.2)</td>
<td>7.0 (7.0-7.0)</td>
<td>2.7 (2.7-2.7)</td>
<td>0.9 (0.9-0.9)</td>
<td>0.004 (0.003-0.005)</td>
<td>0.014 (0.012-0.016)</td>
</tr>
<tr>
<td>Gastroenterologist</td>
<td>2.3 (2.3-2.3)</td>
<td>0.21 (0.20-0.19)</td>
<td>8.6 (8.6-8.6)</td>
<td>4.1 (4.1-4.2)</td>
<td>7.5 (7.5-7.5)</td>
<td>4.1 (4.1-4.1)</td>
<td>1.0 (1.0-1.1)</td>
<td>0.006 (0.005-0.006)</td>
<td>0.023 (0.012-0.016)</td>
</tr>
<tr>
<td>Cardiologist</td>
<td>2.6 (2.6-2.6)</td>
<td>0.16 (0.16-0.21)</td>
<td>8.7 (8.7-8.7)</td>
<td>4.0 (4.0-4.0)</td>
<td>7.2 (7.2-7.2)</td>
<td>3.1 (3.1-3.1)</td>
<td>0.9 (0.9-0.9)</td>
<td>0.006 (0.006-0.007)</td>
<td>0.021 (0.020-0.021)</td>
</tr>
<tr>
<td>General internist</td>
<td>2.2 (2.2-2.2)</td>
<td>0.18 (0.18-0.18)</td>
<td>8.1 (8.0-8.1)</td>
<td>3.6 (4.0-4.0)</td>
<td>6.6 (6.6-6.6)</td>
<td>3.1 (3.1-3.1)</td>
<td>0.8 (0.8-0.8)</td>
<td>0.006 (0.006-0.007)</td>
<td>0.019 (0.018-0.019)</td>
</tr>
<tr>
<td>Endocrinologist</td>
<td>2.4 (2.4-2.4)</td>
<td>0.18 (0.17-0.19)</td>
<td>8.7 (8.7-8.8)</td>
<td>4.3 (4.2-4.3)</td>
<td>7.4 (7.4-7.5)</td>
<td>2.8 (2.8-2.9)</td>
<td>0.7 (0.7-0.7)</td>
<td>0.003 (0.002-0.004)</td>
<td>0.013 (0.011-0.015)</td>
</tr>
<tr>
<td>Allergist/immunologist</td>
<td>1.1 (1.0-1.1)</td>
<td>0.14 (0.14-0.14)</td>
<td>6.4 (6.4-6.4)</td>
<td>3.5 (3.5-3.6)</td>
<td>5.8 (5.8-5.8)</td>
<td>0.4 (0.4-0.4)</td>
<td>0.6 (0.6-0.7)</td>
<td>0.000 (0.000-0.001)</td>
<td>0.001 (0.000-0.002)</td>
</tr>
<tr>
<td>Dermatologist</td>
<td>1.6 (1.6-1.6)</td>
<td>0.14 (0.14-0.14)</td>
<td>6.6 (6.6-6.6)</td>
<td>3.4 (3.4-3.4)</td>
<td>5.4 (5.4-5.4)</td>
<td>1.0 (0.9-1.0)</td>
<td>0.5 (0.5-0.5)</td>
<td>0.003 (0.003-0.003)</td>
<td>0.009 (0.009-0.009)</td>
</tr>
<tr>
<td>Family physician</td>
<td>1.3 (1.3-1.3)</td>
<td>0.14 (0.14-0.14)</td>
<td>4.9 (4.9-4.9)</td>
<td>2.1 (2.1-2.1)</td>
<td>3.8 (3.8-3.8)</td>
<td>1.0 (0.9-1.0)</td>
<td>0.6 (0.6-0.6)</td>
<td>0.003 (0.003-0.003)</td>
<td>0.008 (0.008-0.009)</td>
</tr>
</tbody>
</table>
9 markers for patient complexity
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4. # Physician types seen by each patient
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9. Risk of all-cause death

Better documentation?

Allergy
Rheumatology
Medical oncologist
Surgical oncologist

Implication:
• Resource allocation
  • Clinical resources (nurses, admin staff)
  • Research resources ($$)
• Education initiatives: # trainees
There is variation within the House of Dermatology.
Risk Adjustment
Levels the playing field when comparing providers

<table>
<thead>
<tr>
<th>Dermatologist #1</th>
<th>Dermatologist #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread and Butter</td>
<td>Refractory dermatitis</td>
</tr>
<tr>
<td>Atopic Dermatitis</td>
<td></td>
</tr>
<tr>
<td>• 1 Biopsy</td>
<td>• 11 Biopsy</td>
</tr>
<tr>
<td>• 2 CBC’s</td>
<td>• 12 CBC’s</td>
</tr>
<tr>
<td>• 2 Chem Panel</td>
<td>• 12 Chem Panel</td>
</tr>
<tr>
<td>• Steroid ointments</td>
<td>• Steroid ointments</td>
</tr>
<tr>
<td>• E&amp;M Level 2</td>
<td>• PUVA</td>
</tr>
<tr>
<td></td>
<td>• Imuran</td>
</tr>
<tr>
<td></td>
<td>• E&amp;M Level 3 &amp; 4</td>
</tr>
</tbody>
</table>
Risk Adjustment
Levels the playing field when comparing providers

**Surgeon #1**
- Otherwise Healthy
- Great outcomes
  - Wide local excision of thin melanoma
  - No post-op complications

**Surgeon #2**
- Diabetic
- Non-compliant with wound care
  - Wide local excision of thin melanoma
  - Wound infection
  - Admit <30 days for ABX
  - Gets TEN
Why is risk adjustment important NOW?

- Shift from fee-for-service (FFS) to value-based reimbursement (VBR)

<table>
<thead>
<tr>
<th>VBR models incorporate these elements into reimbursement:</th>
<th>Factors that impact these elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical outcomes</td>
<td>Disease severity</td>
</tr>
<tr>
<td>Quality standards</td>
<td>Comorbidities</td>
</tr>
<tr>
<td>Cost savings</td>
<td>Sociodemographic determinants</td>
</tr>
</tbody>
</table>

- May perversely incentivize MDs to select for healthier patients
  - Lower costs
- Risk adjustment can counterbalance this selection bias
Good risk adjustment tools allow for accurate assessment of case mix index.

- Patient #1
- Patient #2
- Patient #3
- Patient #4
- Patient #5
- Patient #6
- Patient #7
- Patient #8
- Patient #9
- Patient #10

Risk Adjustment Tool

How to get this?

- Patient #1
- Patient #2
- Patient #3
- Patient #4
- Patient #5
- Patient #6
- Patient #7
- Patient #8
- Patient #9
- Patient #10

Low complexity

Medium complexity

High complexity
Risk Adjustment Tools

• “Macro” tool – Hospital system level
  • Hierarchical Condition Category (HCC) model

• “Micro” model – Patient level
  • New dermatology-specific tool
Macro Tool – hospital system level

• Hierarchical Condition Category (CMS-HCC) model
• Developed by Centers for Medicare and Medicaid Services
• >80% derms who treat Medicare pts will be compensated through the Merit-based Incentive Payment System (MIPS), which uses the CMS-HCC
• One of the most commonly applied risk adjustment models
MIPS: Scoring system that determines how much Medicare providers will be paid.

2018 billings

- Cost (30%)
- Advancing care info (25%)
- Improvement activities (15%)

2020 payments

- Quality (30%)
• MD final cost score: calculated by comparing the risk-adjusted per pt cost to a benchmark based on the risk-adjusted national average for their specialty
  • Risk adjustment – use HCC
• Which provider is picked for this cost score?
  • Pick the clinician with the most E&M charges for that year
  • All of a patient’s Medicare Part A and Part B costs (excluding inpatient hospital, emergency department, and skilled nursing)
  • Total Per Capita Cost (TPCC)
• Dermatologist only affected if sees a patient more than his/her PCP
  • Would be assigned cost responsibility for all of that patient’s conditions
What is the hierarchical condition categories (HCC)?

- Scoring mechanism - gives a numerical score (e.g., 2.3)
- ICD-10 diagnosis codes are categorized into over 200 HCCs
- Sum of each patient’s scores from the HCC that are present
- Categories focuses on chronic health conditions likely to affect long-term health expenditures
  - Excludes clinically “insignificant”, definitively treated, & acute conditions.
- Does not incorporate levels of complexity within disease categories
Problems for Derm with HCC model

• Does not adjust for dx such as SCC/BCC, psoriasis, bullous disease, vitiligo, and congenital dermatologic disease.
  • Lead to undercompensation for dermatologists as a field
  • Derms focused on these dx will be particularly disadvantaged

• Does not adjust for disease severity
  • High complexity derm patients (e.g., bullous pts) have appropriately higher per-patient costs than national averages for derm
  • The derms seeing these pts will be negatively impacted on their cost score → lower total MIPS score → negatively impacts Medicare Part B reimbursement

• Financial disincentive to see complex pts or non-HCC covered dx
We have some time to fix this

• Fundamental flaw of MIPS Total Per Capita Cost measure: assign all of a pt’s Medicare Part A and B costs to their most visited clinician
  • Derms rarely the most visited - somewhat shielded

• BUT, CMS is moving towards episode- or condition- based cost measures

• So, CMS-HCC model NEEDS more accurate capture of dermatologic risk
Micro approach: Better capture of Clinical complexity

Tool developed at Emory utilizes CMS’s MDM paradigm, but with specific dermatology application

<table>
<thead>
<tr>
<th>Medical Decision-Making</th>
<th>Minimal</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td># of diagnoses or treatment options</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Amount and/or complexity of data to be reviewed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Risk of complications, morbidity, mortality</td>
<td>Minimal</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>MDM level= 2 of 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Role of Data Derm

- Promotes structured data pulled from EMR to help derms in
  - MIPS reporting
  - Demonstrate quality care
- Parts of complexity rating tool can be pulled automatically from EMRs
  - Problem List: # of problems
  - CPT codes: Biopsies and KOH
  - Prescriptions
- Significant first step toward automated implementation of the complexity tool
Assessment of case mix index

- Patient #1
- Patient #2
- Patient #3
- Patient #4
- Patient #5
- Patient #6
- Patient #7
- Patient #8
- Patient #9
- Patient #10

Derm Complexity tool + Modified HCC

- Patient #1
- Patient #2
- Patient #3
- Patient #4
- Patient #5
- Patient #6
- Patient #7
- Patient #8
- Patient #9
- Patient #10

Low complexity

Medium complexity

High complexity
Acknowledgements

• Benjamin J Kahn, BA
• Hon Pak, MD, MBA
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