What’s with All the Metrics?
Unified Quality Symposium: Types of Data, Measures

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Outline and Objectives

When finished with this exercise, you should be able to:

• Describe the evolution of the medical record and what clinical documentation represents in healthcare today
• Understand the difference between administrative/claims and clinical data
• Recognize the importance of data registries to an integrated health system delivering population health
Who Are We?

Dave Michael, MD
• Chief Medical Information Officer, Vidant Health

Joseph Pye, MD
• Vice President of Medical Affairs, Region, Vidant Health

• No financial disclosures
Quiz

• If we didn’t have to record patient care encounter details, would we?

• If there were no rules, what information would you record?

• Why do we have to record the data?

• What would you do with it?
Perspectives of Healthcare Data
A Long, Long, Time Ago...?
Quiz

• What problem were physicians trying to solve with this data?

• What problem were insurance companies trying to solve with this data?
How Insurers Get Their Data (Hint: From Us)

• Every invoice (claim) submitted to an insurance company is attached to a diagnosis code, presenting a “complete” view of a patient’s medical picture
  • Pharmacy refills
  • Lab and radiology tests
  • Physician office visits
  • Medical procedures
  • Inpatient admissions
  • Emergency Department and Urgent Care visits

• MIB – Medical Insurance Bureau, Inc.
  • Consumer reporting agency comprised of 750+ member companies, accounting for 99% of all life insurance policies and 80% of all health insurance policies in the USA and Canada¹
  • All diagnosis codes are submitted and pooled for access by private membership
  • Founded in 1890 to “ensure the livelihood of their businesses, the solvency of the insurance industry, and the fair and equitable pricing of policies.”²

²http://www.annualmedicalreport.com/mib-inc-saves-money-for-corporations/
Health Informatics

How Insurance Companies See the World

- PRIMARY PREVENTION
  - HEALTHY
  - HIGH RISK
  - ACTIVE DISEASE
- CHRONIC DISEASE MANAGEMENT
  - DISEASE COMPLICATIONS
  - HIGH RISK
- ACUTE CARE CASE MANAGEMENT
  - CATASTROPHIC ILLNESS MORTALITY
  - HIGH RISK

ADMIN/CLAIMS DATA

- Track and Manage Cost. Try to Predict Cost and Forecast Premiums.
  - An insurance company that can predict cost is more competitive.
  - In many ways, they know more about our patients than we do.
- Insurance premiums and therefore profitability are determined by claims data....that we provide to the insurance companies.
Summary – What data comprise...

**Administrative/Claims**
- Visits
- Physician
  - Name
  - Specialty
- Diagnosis
- Services billed to insurance
  - Lab type
  - Scan type
  - Prescription names, quantity
  - Procedure type

**Clinical**
- Vital Signs
- Subjective clinical findings
- Objective clinical findings
- Problem List
- Assessment and Plan
- Lab results
- Scan impressions
- Prescription instructions
- Procedural notes
# A Case Example

<table>
<thead>
<tr>
<th></th>
<th>John</th>
<th>Bill</th>
<th>Fred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>45yo</td>
<td>45yo</td>
<td>45yo</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
</tr>
<tr>
<td>Disease</td>
<td>Uncontrolled Diabetes</td>
<td>Uncontrolled Diabetes</td>
<td>Uncontrolled Diabetes</td>
</tr>
</tbody>
</table>
# Group A: Insurance (Claims) Data

<table>
<thead>
<tr>
<th></th>
<th>John</th>
<th>Bill</th>
<th>Fred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>45</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Gender</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Primary Dx</td>
<td>Uncontrolled Diabetes</td>
<td>Uncontrolled Diabetes</td>
<td>Uncontrolled Diabetes</td>
</tr>
<tr>
<td># A1c readings in past year</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Prescriptions</td>
<td>Metformin</td>
<td>Lantus, Humalog, Metformin</td>
<td>Metformin, Januvia</td>
</tr>
<tr>
<td>Care Visits in last year</td>
<td>PCP x2, Endo x1</td>
<td>ED x2, PCP x4</td>
<td>PCP x1, ED x1</td>
</tr>
</tbody>
</table>
### Group B: Physician (Clinical) Data

<table>
<thead>
<tr>
<th></th>
<th>John</th>
<th>Bill</th>
<th>Fred</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most recent A1c Value</td>
<td>10.00</td>
<td>6.70</td>
<td>8.3</td>
</tr>
<tr>
<td>Prior A1c Value</td>
<td>8</td>
<td>13</td>
<td>8.35</td>
</tr>
<tr>
<td>Creatinine Value</td>
<td>2.5</td>
<td>0.9</td>
<td>1.3</td>
</tr>
<tr>
<td>Problem List</td>
<td>Carotid Bruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• ED visit due to low blood sugar (improper diagnosis for visit in chart, correct diagnosis in notes)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Group C: Social Data (SDOH)

<table>
<thead>
<tr>
<th></th>
<th>John</th>
<th>Bill</th>
<th>Fred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Status</td>
<td>Married</td>
<td>Single</td>
<td>Widower (recent)</td>
</tr>
<tr>
<td>Occupation</td>
<td>Physician</td>
<td>IT Analyst</td>
<td>Unemployed, just fired</td>
</tr>
<tr>
<td>Diet</td>
<td>Vegan</td>
<td>Vegetarian</td>
<td></td>
</tr>
<tr>
<td>Access to Transportation</td>
<td>Owns car</td>
<td>Owns car</td>
<td>Drove work truck to appts</td>
</tr>
<tr>
<td>Personal Notes</td>
<td>None noted</td>
<td>None noted</td>
<td>Abnormal PHQ</td>
</tr>
</tbody>
</table>
Quiz

Is the data shrinking or growing?

How do we manage this?
Take Care of More. See Fewer.

Primary Care & Prevention

• The average US PCP Panel is ~2,500 patients
  • A full time work year is 2080 hours
  • (<1 hour per patient per year)
• To manage chronic disease will take ~3-10 hours per day depending on level of control\(^1\)
• To manage prevention per USPSTF will take 7.4 hours per day\(^2\)
• Some estimates are as high as 21 hours aggregate daily

Population Management\(^3\)

• Patients receive 55% of the chronic and preventive services that they need
• There is a mismatch between PCP capacity and the work needed to be done
• Right-sizing panels to accommodate extra work and close gaps would reduce panels to less than 1,000 patients per PCP
• Healthcare costs now represent more than $600 billion more than would be expected for a country of our size\(^4\)

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How do We Prepare to do this in Healthcare?

• Focus on Developing Our Clinical Data
  • Improve data accuracy and completeness
  • Increase discrete data through structured workflows
  • Focus on physician workflows which, when substantially varied, obscure efforts to reduce errors and increase efficiency
  • Simplify documentation. Burdensome documentation requirements drive physicians to use templates and copy/paste which reduces data accuracy

• Recognize the role of the EHR & Clinical Data Registries
  • The Healthcare Industry is on the verge of meaningful analytics
  • Leverage the disease management and disease prevention advantages of clinical data registries in a problem-focused manner
  • Develop clinical data registries and integrate with claims data for a more real-time, holistic and valuable view of the patient

What is a Clinical Data Registry?

• Systematic clinical compilation of patient data
  • Usually by disease or care goal (i.e., hypertension, cancer screening)
  • Designed for a specific purpose

• Resource for patient management and quality improvement

• Support tool for physician and care team at a population level

• Engine driving clinical decision support

• Integration point of claims, clinical and patient-entered data
Uses for Clinical Data Registries

• Track the course of a single disease (e.g., diabetes)
• Measure alignment of therapy with standard of care (e.g., eye exam)
• Integrate data from multiple health systems, claims and patient-entered sources into one uniform record
• Pre-fetch data for immediate availability in reports and analytical tools, dramatically reducing the time requirement for knowledge delivery
• Provide a “source of truth” to drive clinically-integrated care
Registries: WIIFM? (Hint: Actionable Data)

- Clinical Data integrated with Claims data gives whole picture, beyond the EHR
- Population-based tools are designed for advantages over single-patient data
- Care for large numbers of patients requires enhanced speed and efficiency for planning
- Integrated tools empower clinical teams to extend physician care, all on same page
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