Dashboard Culture: How to Get Stakeholders to Pay Attention and Bring Value to Healthcare

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Agenda

• Introduction
• Data Accuracy
• Data Displays & Dashboards
• Making data actionable
• Using data to drive change & improve value
Johns Hopkins Medicine Organizational Structure

NOTE: Johns Hopkins Medicine is an unincorporated organization with delegated powers from JHU and JHHSC. Various trusts supporting JHU and JHHSC are not shown separately.

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JHM: Clinical Enterprise Integrated Delivery Network

- 5 Hospitals - Baltimore/DC
- Community Based Health Centers- ASCs, Specialty Care, Primary Care
- Primary Care Sites
- Patients seen in and out of network
Creating Value from Data

Steps to getting value from data & dashboards
Data Accuracy

- Data needs to be accurate in order to use it effectively
  - Data inputs
  - Data definitions
  - Data Quality Assurance

Builds trust in the data

Use of a Team - Data Entry into EMR

Office Staff - enter in demographics (language, preferred method of contact)
Nurse/Medical Assistant - enter in vital signs, social & family history, patient reported screenings
Doctor - enter review of systems, physical exam, assessment & plan
## EMR Workflows

### Medication Management & Reconciliation

<table>
<thead>
<tr>
<th>Task</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient</strong></td>
<td>Log into MyChart website.</td>
</tr>
<tr>
<td><strong>Patient</strong></td>
<td>View medications, reconcile, ensure correct medication list present.</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Ensures patient follows standard workflow process.</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Requests Medication list from patient.</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Reviews patient on MyChart prior to start using.</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Completes EMR medication list to patient-provided list.</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Reviews drug allergy check.</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Ensures patient compliance with taking or not taking medication.</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Ensures any additions or changes to medication list.</td>
</tr>
<tr>
<td><strong>Provider</strong></td>
<td>Reviews medication list.</td>
</tr>
<tr>
<td><strong>Provider</strong></td>
<td>Provides solutions for medication check.</td>
</tr>
<tr>
<td><strong>Provider</strong></td>
<td>Enhances any additions or changes to medication list.</td>
</tr>
<tr>
<td><strong>Provider</strong></td>
<td>Places any new in clinic medication orders.</td>
</tr>
<tr>
<td><strong>Clinical Staff</strong></td>
<td>Prepares scripts and events.</td>
</tr>
<tr>
<td><strong>Clinical Staff</strong></td>
<td>Clinical staff visits [2] with medications that are unchanged.</td>
</tr>
<tr>
<td><strong>Clinical Staff</strong></td>
<td>Provider signs and E-prescribes needed scripts.</td>
</tr>
<tr>
<td><strong>Clinical Staff</strong></td>
<td>Prints scheduled medication.</td>
</tr>
</tbody>
</table>

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## Clinical Decision Support

### View Reminders in the EMR at the Point of Care

- **One Click** to address reminders for overdue services - easy to do the right thing.
Coded Data Entry-Reportable

Data Accuracy

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Lower Limit</th>
<th>Upper Limit</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium</td>
<td>130–140 mmol/L</td>
<td>140–150 mmol/L</td>
<td>140–150 mmol/L</td>
</tr>
<tr>
<td>Potassium</td>
<td>3.5–5.0 mmol/L</td>
<td>3.5–5.0 mmol/L</td>
<td>3.5–5.0 mmol/L</td>
</tr>
<tr>
<td>Chloride</td>
<td>98–108 mmol/L</td>
<td>98–108 mmol/L</td>
<td>98–108 mmol/L</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>10–20 mmol/L</td>
<td>10–20 mmol/L</td>
<td>10–20 mmol/L</td>
</tr>
<tr>
<td>Urea Nitrogen</td>
<td>3–10 mg/dL</td>
<td>3–10 mg/dL</td>
<td>3–10 mg/dL</td>
</tr>
<tr>
<td>Creatinine</td>
<td>0.6–1.5 mg/dL</td>
<td>0.6–1.5 mg/dL</td>
<td>0.6–1.5 mg/dL</td>
</tr>
</tbody>
</table>

- Standard code sets/taxonomies
  - Problems/Diagnosis- ICD9/10
  - Procedures- CPT codes
  - Labs- LOINC codes
  - Medications- RxNorm, NDC
- Flowsheets- vital signs
- Patient- unique ID’s
- Provider- National Provider Identifier

Report Writing- Specifications and Data Definitions

Data Accuracy

- Key Principles
  - **Data steward** to create specifications: need an understanding of workflows
  - Leverage **coded data sets** to write report specifications
  - Use the **same definitions** in reports as in point of care clinical decision support
  - Create data definitions that can be used repeatedly in reports
  - Review specifications in person with report writer to assure understanding
Registries

Internal - Electronic Medical Records
* Allow for population segmentation that can be used repeatedly

Roles in report generation & Quality Assurance of Data

- **Programmer** - get the data out of the system
- **Analyst/Data Steward** - define, understand and present the data
- **User** - assure accuracy, validate, and use data
Dashboards, visualizations, and data displays

• Improve quality and drive behavior change
  ➢ Dashboards
  ➢ Detail Reports
  ➢ Visualization techniques

Overall Provider Rating vs. Communication

Data Displays
Dashboards for monitoring and feedback

Sites are provided monthly feedback dashboard reports

<table>
<thead>
<tr>
<th>Site</th>
<th>Total Adults Requiring Intervention Assessment</th>
<th>Total Adults Requiring FC/Advisory</th>
<th>Follow-up %</th>
<th>Sites Total Requiring FC/Advisory %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta</td>
<td>27</td>
<td>302</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Canton Crossing</td>
<td>17</td>
<td>212</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Charles County</td>
<td>21</td>
<td>254</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Dowsboro Rhoades</td>
<td>12</td>
<td>175</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>East Baton Rouge</td>
<td>14</td>
<td>181</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>North Bethesda</td>
<td>29</td>
<td>241</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Oak Park - Pikes</td>
<td>22</td>
<td>62</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Library</td>
<td>24</td>
<td>175</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Water's Edge</td>
<td>96</td>
<td>904</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Eastside</td>
<td>10</td>
<td>175</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Oak Park - Pikes</td>
<td>10</td>
<td>144</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Run Charts: Show progress over time

CY2015 Depression Screening and Follow-Up

Data Displays
Heat maps: Show population concentrations

Bubble graphs: show outliers based on correlations
Deep data dives to answer specific questions

45% of ED visits occur when offices are open

Sites with opportunities to expand office hours

Bar & Line charts to show correlations
Data aggregation and analysis

Drill down readmission rates by service and discharging hospital

Embedded in Quality Improvement Plans
How to make data actionable

• Communicating data
• Drill down capabilities
• Data discovery

Communicating and Summarizing

Hot links to Dashboards and Patient detail reports
Drill down based on org structure

Data Discovery

Lots of Filter Options
Using Data to drive change and value

- Aligning incentives
- Transparency
- Linking to governance
- Linking to accountability

Alignment Incentives

- Add metrics to bonus’s and salary structure for providers, managers and executives
Reporting transparently

- Drop down menu options for anyone to select
- No access restrictions on results

JHM Quality and Safety Governance Structure

Use: Driving Value
Ambulatory Quality & Safety Governance

JHM Ambulatory Quality & Safety Governance

Establishes Oversight and Accountability

Johns Hopkins Medicine (BHM) Board of Trustees

JHM/Groming Institute Patient Safety and Quality Board Committee

Defines Standards, Monitors Performance

CHOP Quality & Safety Joint Council

Workgroups: Share and Learn

Outcomes (Value based purchasing, MU/AACQ quality)

Local Performance Improvement Committees - Execution

Patient Experience (IG, CMHC, PACS)

Value (Utilization, Choosing Wisely)

Patient Safety/Risk (Ambulatory Practice Board, procedures, UOC, infection control)

Patient Safety/Risk (CHOP, Risk, Injury, SAI, Risky States)

Value (Hearings, Choosing Wisely)

Use: Driving Value
JHM Strategic Planning Process

- Sets clear & measurable goals annually
- Progress reported to JHM Armstrong Institute Quality & Safety Board to assure accountability
- Aligns incentives for Directors

Ambulatory Quality & Safety Governance

- Establishes Oversight and Accountability
- Defines Standards, Monitors Performance
- Workgroups: Share and Learn
- Local Performance Improvement Committees: Execution

Use: Driving Value
OJHP Monthly Dashboard shared at Joint Council

Use: Driving Value

- Safety
- Outcomes
- Patient Experience
- Value
- Health Equity

Ambulatory Quality & Safety Committee

Structure and Governance

Use: Driving Value

JHM Ambulatory Quality & Safety Governance

Establishes Oversight and Accountability

Defines Standards, Monitors Performance

Local Performance Improvement Committees - Execution

Workgroups - Share and Learn

- Outcomes (Value based purchasing, MAP, ACO quality)
- Patient Experience (EQ-5D, HAPI)
- Patient Safety/Risk (ambulatory practice based procedures, EQ, infection control)
- Value (Utilization, Choosing Wisely)
Entities execute on Performance

Use: Driving Value

- Use Dashboards routinely to determine metrics that need improvement
- Transparent results
- Multiple data displays for PI

Local Performance Improvement: down into the entities

Use: Driving Value

- 30 Primary Care Practices all over the state
- Front line staff and providers drive local change
- Central Quality Team (enabling infrastructure)
  - Supply data/dashboards
  - Lean trained green belts facilitate performance improvement plans
  - Document using A3’s
  - Team developed PI plan: providers & staff
Sites develop Performance Improvement Plans

Use: Driving Value

- Report PI plans for metrics in red to the board
- Using Management, Discussion, and Analysis format

Accountability: Reporting variances to the board

- Report PI plans for metrics in red to the board
- Using Management, Discussion, and Analysis format

### Hospital Follow-Up Initiative

#### Performance Improvement Plan - Trends

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>IMPACT</th>
<th>REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Guidelines:**
- Prioritize with managing notification messages
- Prioritize with developing PI plans
- Prioritize with developing PI plans

**Accountability:**
- Reporting to the board
- Reporting to PI plans for metrics in red
- Using Management, Discussion, and Analysis format
- Reporting to the board
- Reporting to PI plans for metrics in red
- Using Management, Discussion, and Analysis format

**Metrics:**
- **KPIs:**
  - Admissions
  - Discharges
  - Re-Admissions
- **PI Plans:**
  - Outcomes
  - Processes
  - Resources

**Use:**
- Driving Value
Steps to getting value from data & dashboards

- Data Accuracy
- Data Displays
- Actionable Data
- Use: Driving Value

Creating Value from Data

- Data
- Information
- Knowledge
- Wisdom
- Value
Thank you!

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