Overcoming the Barriers to Implementing Value-Based Health Care

Harvard School of Dental Medicine Leadership Forum

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The central goal in health care must be **value for patients**, not access, volume, convenience, quality, or cost containment.

\[
\text{Value} = \frac{\text{Health outcomes that matter to patients}}{\text{Costs of delivering those outcomes}}
\]

The unit of analysis for creating and measuring value is the treatment of a patient’s **medical condition** over a complete **cycle of care**.
Barriers to implementing Value-Based Health Care

1. **Fragmentation** of care delivery by medical specialty

2. Lack of measurement of **outcomes** that matter to patients

3. Distorted measurement of **costs** at the patient level; confusion between charges and costs

4. Fee-for-service payments that reward **volume** but not **value**
How to overcome the barriers to VBHC

Problem #1: Fragmentation of care delivery by medical specialty

Solution: Organize multi-disciplinary teams around the patient’s medical condition
How we organize today for Diabetes

Primary Care Physician

- Laboratory
- Podiatry
- Psychiatrist/Psychologist
- Social Worker
- Nutritionist
- Outpatient Cardiology
- Diabetes Nurse Education
- Outpatient Endocrinologist
- Outpatient Neurologist
- Inpatient Cardiology
- Inpatient Endocrinology
- Inpatient Vascular Surgery
- Vascular Surgeon
- Ophthalmologist
- Kidney Dialysis
- Laser Eye Surgery
Diabetes (NL): An IPU for Type-1 Diabetes

**Multi-Disciplinary Team**

- Physician Specialists
- Nurses
- Dieticians
- Psychologists
- Care Managers
- VCare IT Platform
- Housed within Single Facility
Diabetes Type-1 Diabetes Care Team

Achievements:

1. High percentage of patients with HbA1c levels < 7.5%
2. Lowest rate (<3%) of hospital admissions in Netherlands for Type-1 Diabetes patients
3. Significant reduction in annual cost of care
4. Highest patient satisfaction (9.5/10) rating in NL
Organize Care Around Patient Medical Conditions
Head & Neck Cancer Care at MD Anderson

Old Model:
Organize by Specialty and Discrete Service

Source: Porter, Michael E., Jain, Sachin, The University of Texas MD Anderson Cancer Center: Interdisciplinary Cancer Care, February 26, 2013.
Organize Care Around Patient Medical Conditions
Head & Neck Cancer Care at MD Anderson

Old Model:
Organize by Specialty and Discrete Service

Current Model:
Organize into Integrated Practice Units (IPUs) Around Conditions

Source: Porter, Michael E., Jain, Sachin, The University of Texas MD Anderson Cancer Center: Interdisciplinary Cancer Care. February 26, 2013.
Why IPUs: Three Compelling Reasons

1. Volume

Mortality rate of low birth weight infants in Germany

- Five large centers: 15.0%
- All other hospitals: 33.3%

26-27 weeks gestational age

< 26 weeks gestational age

- Five large centers: 8.9%
- All other hospitals: 11.4%

2. Multi-Disciplinary Team

3. Cycle of Care

- Possible need for procedure
- Shared decision making
- Pre-procedure testing
- Pre-procedure testing

Outcome and cost measures
How to overcome the barriers to VBHC

Problem #2: Lack of measurement of outcomes that matter to patients

Solution: Measure and communicate outcomes by medical condition
Measure Outcomes for a Patient’s Medical Condition

- **Patient Initial Conditions**
- **Processes**
  - Protocols, Quality, Safety, Compliance Guidelines & Checklists
- **Output Indicators**
  - PSA, HgA1b levels, Gleason score, surgical margin, Infection rates, Readmission rates, length-of-stay
- **Inputs**
  - Staff certification, facility standards, JCAHO accreditation

**Patient Experience/Engagement**
Why does health care focus so much on quality and compliance metrics rather than outcome metrics?

Accountants’ desire for precision:
“If you can’t measure what you want, want what you can measure!”
Measure Outcomes that Matter to Patients
M. Porter, NEJM Dec 2010

**Tier 1**
Health Status Achieved or Retained
- **Survival**
  - Mortality

**Tier 2**
Patient's Experience during Care Cycle
- **Degree of health/recovery**
  - Clinical status achieved
  - Functional status achieved
  - Time to care completion and recovery

**Tier 3**
Sustainability of Health
- **Time to recovery and return to normal activities**
  - Care-related pain/discomfort
  - Complications
  - Reintervention/Readmission
- **Sustainability of health/recovery and nature of recurrences**
  - Long-term clinical status
  - Long-term functional status
- **Long-term consequences of therapy (e.g., care-induced illnesses)**
  - Long-term consequences of therapy
### Outcome Measures for Prostate Cancer at Martini Klinik, Hamburg

<table>
<thead>
<tr>
<th>Clinical Outcomes</th>
<th>Patient Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of Stay</td>
<td>Mortality</td>
</tr>
<tr>
<td>Post-surgery PSA level (annually)</td>
<td>Patient-reported erectile function (Int’l Index of Erectile Function)</td>
</tr>
<tr>
<td>Tumor volume</td>
<td>Patient-reported urinary function (Int’l Prostate Symptom Score)</td>
</tr>
<tr>
<td>High-grade cancer volume</td>
<td>Patient-reported general quality of life (European Cancer QLQ-C30 Survey)</td>
</tr>
<tr>
<td>Number of positive lymph nodes</td>
<td>Incontinence (ICS Score)</td>
</tr>
<tr>
<td>Positive surgical margin</td>
<td>Surgical complications up to three months post-op (Clavien/Dindo)</td>
</tr>
<tr>
<td></td>
<td>Radiotherapy complications</td>
</tr>
<tr>
<td></td>
<td>Metastasis</td>
</tr>
</tbody>
</table>
Outcomes Measurement at Martini Klinik Prostate Cancer Surgery Center in Hamburg

• Outcomes data measured pre-surgery, at discharge from MK, and, post-discharge, 3 months, 1 year, 2 years, and 3 years.

• 1,200 surveys per month; 90% return rate (multiple phone reminders)

• Data base on 20,000 prostate cancer patients

• Now collecting molecular genetic data for every tumor tissue sample
MK clinicians participate in a semi-annual meeting to compare clinical and patient outcomes by surgeon

- CEO/Urology Department Chairman, at one meeting, learns that his incidence of positive surgical margins had increased from 5% to 8%.

- He enters training with junior surgeons who had better performance.

- His subsequent incidence of positive margins dropped to 3.5%.
Prostate Cancer Outcomes in Germany

5 year disease specific survival

- Average hospital: 94%
- Best hospital: 95%
Martini Klinik Outcomes versus the average German hospital

- **5 years disease specific survival**
  - Average hospital: 94%
  - Best hospital: 95%

- **Severe erectile dysfunction**
  - Average hospital: 75.5%
  - Best hospital: 17.4%

- **Incontinence**
  - Average hospital: 43.3%
  - Best hospital: 9.2%

**Percentage of patients treated**
ICHOM (International Consortium for Health Outcomes Measurement) has developed Standard Sets, covering 59% of the disease burden

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Depression and Anxiety*</td>
<td>12. Advanced Prostate Cancer*</td>
<td>18. Colorectal Cancer*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>19. Overactive Bladder</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>20. Craniofacial Microsomia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>21. Inflammatory Bowel Disease</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Burden of Disease Covered:

- 18%
- 35%
- 45%
- 59%

* Published Thus Far in Peer-Reviewed Journals (14)

Learn more about ICHOM at www.ichom.org
How to overcome the Barriers to VBHC

Problem #3: Distorted measurement of costs at the patient level; confusion between charges and costs

Solution: Use Time-Driven Activity-Based Costing (TDABC) to measure and improve costs across a medical condition’s complete cycle of care.
### Time-Driven Activity-Based Costing (TDABC)

<table>
<thead>
<tr>
<th>Step</th>
<th>Process</th>
<th>Identify</th>
<th>Determine Care Process</th>
<th>Calculate Cost Rates</th>
<th>Consumables</th>
</tr>
</thead>
</table>
| 1    |         | • all activities performed over the care cycle  
       |         | • who performs each activity  
       |         | • length of time for each activity |
| 2    |         | • cost per unit of time for each type of personnel and equipment |
| 3    |         | • cost of devices, supplies, and drugs used in the care cycle |
Measuring Costs Correctly
Develop process maps for the care cycle

**Level 1: Overall care cycle**

- Map 1: Surgical consultation
- Map 2: Pre-operative testing
- Map 3: Day of surgery pre-operative prep
- Map 4: Operation
- Map 5: Post-anesthesia care unit
- Map 6: Discharge
- Map 7: Rehabilitation
- Map 8: Follow-up visit

**Level 2: Studied care cycle**

- Map 1: Surgical consultation
- Map 2: Pre-operative testing
- Map 3: Day of surgery pre-operative prep
- Map 4: Operation
- Map 5: Post-anesthesia care unit
- Map 6: Discharge
- Map 7: Rehabilitation
- Map 8: Follow-up visit

**Level 3: Process maps for studied care cycle**

- Map 2
TDABC Step 1: Clinical and administrative teams work collaboratively to identify:

- **Process-Steps:** All the administrative and clinical process-steps used over a patient’s complete cycle of care for a medical condition

- **Resources:** personnel, equipment, consumable medicines and supplies – used at each process step

- **Time Estimates:** The personnel and equipment time used at each process step for that patient
## Calculate the Capacity Cost Rates (CCR)

*Data are illustrative*

<table>
<thead>
<tr>
<th>Personnel Capacity Cost Rate</th>
<th>Surgeon</th>
<th>Physician Assistant</th>
<th>RN</th>
<th>X-Ray Tech</th>
<th>Scribe</th>
<th>Office Assistant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Clinical Costs</td>
<td>$546,400</td>
<td>$120,000</td>
<td>$100,000</td>
<td>$64,000</td>
<td>$51,000</td>
<td>$61,000</td>
</tr>
<tr>
<td>Personnel Capacity (minutes)</td>
<td>91,086</td>
<td>89,086</td>
<td>89,086</td>
<td>89,086</td>
<td>89,086</td>
<td>89,086</td>
</tr>
<tr>
<td>Personnel Capacity Cost Rate</td>
<td>$6.00</td>
<td>$1.35</td>
<td>$1.12</td>
<td>$0.72</td>
<td>$0.57</td>
<td>$0.68</td>
</tr>
</tbody>
</table>
We compute total patient-level care costs by multiplying capacity cost rates by process times and summing across each patient’s cycle of care.

<table>
<thead>
<tr>
<th>Initial consultation</th>
<th>Minutes</th>
<th>Cost/minute</th>
<th>*Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD X₁ Y₁</td>
<td>136.13</td>
<td>68.04</td>
<td>266.08</td>
</tr>
<tr>
<td>RN X₂ Y₂</td>
<td></td>
<td>6.17</td>
<td></td>
</tr>
<tr>
<td>CA X₃ Y₃</td>
<td></td>
<td>15.74</td>
<td></td>
</tr>
<tr>
<td>ASR X₄ Y₄</td>
<td></td>
<td></td>
<td>266.08</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surgical procedure</th>
<th>Minutes</th>
<th>Cost/minute</th>
<th>*Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD X₁ Y₁</td>
<td>584.99</td>
<td>603.89</td>
<td>1752.15</td>
</tr>
<tr>
<td>Anes. X₂ Y₂</td>
<td></td>
<td>136.29</td>
<td></td>
</tr>
<tr>
<td>RN X₃ Y₃</td>
<td></td>
<td>97.82</td>
<td></td>
</tr>
<tr>
<td>Tech X₄ Y₄</td>
<td></td>
<td>329.16</td>
<td></td>
</tr>
<tr>
<td>OR X₅ Y₅</td>
<td></td>
<td></td>
<td>1752.15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Follow-up or post-operative visit</th>
<th>Minutes</th>
<th>Cost/minute</th>
<th>*Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD X₁ Y₁</td>
<td>55.19</td>
<td>13.61</td>
<td>73.66</td>
</tr>
<tr>
<td>RN X₂ Y₂</td>
<td></td>
<td>3.09</td>
<td></td>
</tr>
<tr>
<td>CA X₃ Y₃</td>
<td></td>
<td>1.77</td>
<td></td>
</tr>
</tbody>
</table>

Source: Meg Abbott, MD & John Meara, MD Boston Children’s Hospital
How does TDABC help providers manage their costs

Process Improvement and Redesign

- **Eliminate** process steps and variations that **do not** contribute to improved patient outcomes
- **Redesign** processes to **reduce waste and idle time**
- **Optimize** processes and interventions over a complete cycle of care
- **All clinicians work at the “top-of-their license”**

Pricing

- Understand costs over the full care cycle to prepare for **bundled payment** contracts
How to overcome the Barriers to VBHC

Problem #4: Fee-for-service payments that reward volume but not value

Solution: Develop Bundled Payments to compensate all providers treating the medical condition
The Movement to Value-Based Payment Models

## Fee for Service

- Pay for care for a **life**

## Capitation/Population Based Payments

- Pay for care for a **life**
- **Capitation/Population Based Payments**
- Both capitation (ACOs) and bundled payments create positive incentives to **reduce costs** and give clinicians flexibility in the provision of care

## Bundled Payments

- Pay for care for **conditions** (acute, chronic) and **primary care segments**

- **Bundled Payments**
- Capitation at the hospital or system level can **coexist** with bundle payment at the condition level
A Value-Based Bundle Payment, ideally, should have the following five components.

1. A single payment that covers **all the care** required to treat a **patient’s medical condition**
   - a time-based payment ($/month) for treating a chronic condition or population segment

2. **Contingent** on achieving good condition-specific **outcomes**, including care guarantees

3. **Risk adjusted**, or covering a **defined patient group** in terms of complexity
   - (80/20 rule)

4. Specified **limits of responsibility** for unrelated care, and **stop loss** provisions to mitigate against outliers and catastrophic events

5. A price that provides a fair margin for delivering **effective and efficient care**
   - Provider is at risk for difference between **bundled price** and **actual cost** of all included services required to treat the condition
Bundled Payment Align with Value

- **Accountability** for **good outcomes** condition by condition
- Drives the formation of **multidisciplinary care** (IPUs) to deliver **good outcomes**
- **Risk factors** by condition are **well understood**
- Strong incentives to **improve efficiency**, but not at the expense of **quality**

**Compete on Value**
- Expands and informs **patient choice**
- Providers motivated to focus on **areas of excellence**
- Opens up **competition and transparency on value**, condition by condition
Creating a Value-Based Health Care System

1. Organize **Multi-disciplinary teams** around the patient’s medical condition
   
   • For primary and preventive care, the multi-disciplinary team serves a **distinct patient segment**

2. Measure and communicate **Outcomes** by medical condition

3. Measure and improve **Costs** by medical condition

4. Develop **Bundled Payments** to compensate providers for treating the medical condition