Value-Based Health Care Delivery

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This presentation draws on Redefining Health Care: Creating Value-Based Competition on Results (with Elizabeth O. Teisberg), Harvard Business School Press, May 2006; “A Strategy for Health Care Reform—Toward a Value-Based System,” New England Journal of Medicine, June 3, 2009; “Value-Based Health Care Delivery,” Annals of Surgery 248: 4, October 2008; “Defining and Introducing Value in Healthcare,” Institute of Medicine Annual Meeting, 2007. Additional information about these ideas, as well as case studies, can be found the Institute for Strategy & Competitiveness Redefining Health Care website at http://www.hbs.edu/rhc/index.html. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means — electronic, mechanical, photocopying, recording, or otherwise — without the permission of Michael E. Porter and Elizabeth O. Teisberg.
Redefining Health Care Delivery

• The core issue in health care is the value of health care delivered

Value: Patient health outcomes per dollar spent

• Value is the only goal that can unite the interests of all system participants

• How to design a health care delivery system that dramatically improves patient value
• How to construct a dynamic system that keeps rapidly improving
Creating a Value-Based Health Care System

• Significant improvement in value will require **fundamental restructuring of health care delivery**, not incremental improvements

Today, 21st century medical technology is often delivered with 19th century organization structures, management practices, measurement methods, and payment models

• Care pathways, process improvements, safety initiatives, case managers, disease management and other **overlays** to the current structure are beneficial, but not sufficient
Principles of Value-Based Health Care Delivery

• The overarching goal in health care must be *value for patients*, not access, cost containment, convenience, or customer service.

\[
\text{Value} = \frac{\text{Health outcomes}}{\text{Costs of delivering the outcomes}}
\]

– Outcomes are the *health results that matter for a patient’s condition* over the care cycle.
– Costs are the *total costs of care for a patient’s condition* over the care cycle.
Principles of Value-Based Health Care Delivery

- **Quality improvement** is the most powerful driver of fundamental cost containment and value improvement, where quality is **health outcomes**

<table>
<thead>
<tr>
<th>Prevention of illness</th>
<th>Fewer complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early detection</td>
<td>Fewer mistakes and repeats in treatment</td>
</tr>
<tr>
<td>Right diagnosis</td>
<td>Faster recovery</td>
</tr>
<tr>
<td>Right treatment to the right patient</td>
<td>More complete recovery</td>
</tr>
<tr>
<td>Rapid cycle time of diagnosis and treatment</td>
<td>Greater functionality and less need for long term care</td>
</tr>
<tr>
<td>Treatment earlier in the causal chain of disease</td>
<td>Fewer recurrences, relapses, flare ups, or acute episodes</td>
</tr>
<tr>
<td>Less invasive treatment methods</td>
<td>Reduced need for ER visits</td>
</tr>
<tr>
<td></td>
<td>Slower disease progression</td>
</tr>
<tr>
<td></td>
<td>Less care induced illness</td>
</tr>
</tbody>
</table>

- **Better health** is the goal, not more treatment
- **Better health** is *inherently less expensive* than poor health
Creating a Value-Based Health Care Delivery System

The Strategic Agenda

1. Organize Care into Integrated Practice Units (IPUs) around Patient Medical Conditions
   - Organize primary and preventive care to serve distinct patient segments

2. Measure Outcomes and Cost for Every Patient

3. Reimburse through Bundled Prices for Care Cycles

4. Integrate Care Delivery Across Facilities in Health Systems

5. Expand Areas of Excellence Across Geography

6. Build an Enabling Information Technology Platform
1. Organizing Care Around Patient Medical Conditions
Migraine Care in Germany

Existing Model:
Organize by Specialty and
Discrete Services

1. Organizing Care Around Patient Medical Conditions
Migraine Care in Germany

**Existing Model:**
Organize by Specialty and Discrete Services

- Imaging Centers
- Outpatient Physical Therapists
- Outpatient Neurologists
- Inpatient Treatment and Detox Units
- Primary Care Physicians
- Outpatient Psychologists

**New Model:**
Organize into Integrated Practice Units (IPUs)

- Affiliated Imaging Unit
- West German Headache Center
  Neurologists
  Psychologists
  Physical Therapists
  “Day Hospital”
- Primary Care Physicians
- Affiliated “Network” Neurologists
- Essen Univ. Hospital Inpatient Unit

What is a Medical Condition?

• A medical condition is an interrelated set of patient medical circumstances best addressed in an integrated way
  – Defined from the patient’s perspective
  – Involving multiple specialties and services
  – Including common co-occurring conditions and complications

• In primary / preventive care, the unit of value creation is defined patient segments with similar preventive, diagnostic, and primary treatment needs (e.g., healthy adults, frail elderly)

• The medical condition / patient segment is the proper unit of value creation and the unit of value measurement in health care delivery
## Integrating Across the Cycle of Care
### Breast Cancer

<table>
<thead>
<tr>
<th>INFORMING AND ENGAGING</th>
<th>• Advice on self screening • Consultations on risk factors</th>
<th>• Counseling patient and family on the diagnostic process and the diagnosis</th>
<th>• Explaining patient treatment options/ shared decision making • Patient and family psychological counseling</th>
<th>• Counseling on the treatment process • Education on managing side effects and avoiding complications • Achieving compliance</th>
<th>• Counseling on rehabilitation options, process • Achieving compliance • Psychological counseling</th>
<th>• Counseling on long term risk management • Achieving compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEASURING</td>
<td>• Self exams • Mammograms</td>
<td>• Mammograms • Ultrasound • MRI • Labs (CBC, etc.) • Biopsy • BRACA 1, 2... • CT • Bone Scans</td>
<td>• Labs • Procedure-specific measurements • Range of movement • Side effects measurement • MRI, CT • Recurring mammograms (every six months for the first 3 years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCESSING THE PATIENT</td>
<td>• Office visits • Mammography unit • Lab visits</td>
<td>• Office visits • Lab visits • High risk clinic visits</td>
<td>• Office visits • Hospital visits • Lab visits • Hospital stays • Visits to outpatient radiation or chemotherapy units • Pharmacy visits • Office visits • Rehabilitation facility visits • Pharmacy visits • Office visits • Lab visits • Mammographic labs and imaging center visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MONITORING/ PREVENTING</td>
<td>• Medical history • Control of risk factors (obesity, high fat diet) • Genetic screening • Clinical exams • Monitoring for lumps</td>
<td>• Medical history • Determining the specific nature of the disease (mammograms, pathology, biopsy results) • Genetic evaluation • Labs</td>
<td>• Choosing a treatment plan • Surgery prep (anesthetic risk assessment, EKG) • Plastic or oncoplastic surgery evaluation • Neo-adjuvant chemotherapy</td>
<td>• Surgery (breast preservation or mastectomy, oncoplastic alternative) • Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)</td>
<td>• In-hospital and outpatient wound healing • Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphedema and chronic fatigue) • Physical therapy</td>
<td>• Periodic mammography • Other imaging • Follow-up clinical exams • Treatment for any continued or later onset side effects or complications</td>
</tr>
</tbody>
</table>

### Monitoring/ Preventing
- Medical history
- Control of risk factors (obesity, high fat diet)
- Genetic screening
- Clinical exams
- Monitoring for lumps

### Diagnosing
- Medical history
- Determining the specific nature of the disease (mammograms, pathology, biopsy results)
- Genetic evaluation
- Labs

### Preparing
- Choosing a treatment plan
- Surgery prep (anesthetic risk assessment, EKG)
- Plastic or oncoplastic surgery evaluation
- Neo-adjuvant chemotherapy

### Intervening
- Surgery (breast preservation or mastectomy, oncoplastic alternative)
- Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)

### Recovering/ Rehabing
- In-hospital and outpatient wound healing
- Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphedema and chronic fatigue)
- Physical therapy

### Monitoring/ Managing
- Periodic mammography
- Other imaging
- Follow-up clinical exams
- Treatment for any continued or later onset side effects or complications
Value-Based Primary Care

Organize primary care around patient segments with similar health circumstances and care needs:

Illustrative Segments

- Healthy adults
- Mothers and children
- Adults at risk of developing chronic or acute disease
  - E.g. family history, environmental exposures, lifestyle
- Chronically ill adults with one or more complex chronic conditions
  - E.g. moderate mental illness, diabetes, COPD, heart failure
- Adults with rare conditions
- Frail elderly or disabled

Tailor the Care Delivery Team and Facilities to Each Segment

- Physicians, psychologists, nurses, social workers, educators, and other staff best equipped to meet the medical and non-medical needs of the segment
- Care delivered in locations reflecting patient circumstances in the segment
What is Not Integrated Care?

Integrated care is not the same as:

• **Co-location** per se
• Care delivered by the **same organization**
• A clinical **pathway**
• A **multispecialty group** practice
• A **medical home**
• An **accountable care organization** (ACO)
• An **institute**
• A **center** of excellence
• Freestanding **focused factories**
• A **health plan/provider** system (e.g. Kaiser Permanente)
Volume in a Medical Condition Enables Value

The Virtuous Circle of Value

- Volume and experience will have an even greater impact on value in an IPU structure than in the current system
Low Volume Undermines Value
Mortality of Low-birth Weight Infants in Baden-Württemberg, Germany

Mortality rate

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

Mortality rate

26-27 weeks gestational age: 8.9%
< 26 weeks gestational age: 11.4%

Implications for Mental Health

- Care for mental illness should be organized around patient conditions.
- Mental health and physical health are inextricably linked.
- Care for physical and mental illness should involve the integration of physical and mental health providers.

1. Create IPUs to care for acute or complex mental health patients.
2. Integrate mental health care into physical health IPUs.
3. Integrate care of common mental health conditions into primary care.
Organizing Care for Acute or Complex Mental Health Conditions

- E.g., severe forms of depression, bipolar disorder, eating disorders, schizophrenia, etc.
- Care should be delivered in condition-specific IPUs
- By a dedicated, multidisciplinary team led by mental health providers
- Mental health IPUs should incorporate the relevant physical health clinicians to treat the common complications of mental illness, building experience and expertise in those areas

- Aggregating acute or complex mental health care into high volume centres of excellence will dramatically improve outcomes, increase efficiency, and reduce excess capacity
Schön Klinik Roseneck is the **highest volume inpatient eating disorder provider in Germany**, treating over 500 patients per year.

<table>
<thead>
<tr>
<th>Dedicated to Eating Disorders Care</th>
<th>Shared with other Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MDs and PhDs</strong></td>
<td><strong>MDs – rotate through one day per week</strong></td>
</tr>
<tr>
<td>- 6 Chief Psychiatrists</td>
<td>- 1 Dermatologist</td>
</tr>
<tr>
<td>- 6 Attending Psychiatrists</td>
<td>- 1 Orthopedist</td>
</tr>
<tr>
<td>- 12 Staff Psychiatrists</td>
<td>- 1 Ear/nose/throat Specialist</td>
</tr>
<tr>
<td>- 24 Psychologists</td>
<td>- 1 Pain Specialist</td>
</tr>
<tr>
<td>- 1 Chief Internist</td>
<td></td>
</tr>
<tr>
<td><strong>Skilled Staff</strong></td>
<td><strong>MDs – on call</strong></td>
</tr>
<tr>
<td>- 18 Nurses</td>
<td>- 1 Neurologist</td>
</tr>
<tr>
<td>- 2 Nutritionists</td>
<td>- 2 Internists</td>
</tr>
<tr>
<td>- 3 Dieticians</td>
<td>- 1 Physical Medicine Specialist</td>
</tr>
<tr>
<td><strong>Skilled Staff</strong></td>
<td></td>
</tr>
<tr>
<td>- 4 Social Workers</td>
<td></td>
</tr>
<tr>
<td>- 4 Physical Therapists</td>
<td></td>
</tr>
<tr>
<td>- 9 Exercise Physiologists</td>
<td></td>
</tr>
<tr>
<td>- 7 Art therapists</td>
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</tr>
</tbody>
</table>
Integrating Mental Health into Physical Health IPUs

• More than a quarter of adults with physical health problems **also suffer from mental illness**

• The mental health challenges of acute or complex specialty care are often **related to the medical condition being treated**

• Physical condition centered IPUs should include **dedicated mental health providers** who understand the mental health needs of the patients they treat, detect developing mental illness, and intervene early
  
  – Social workers or other mid-level providers can occupy such roles, referring out complex cases to psychologists or psychiatrists
**Integrating Mental Health into Physical Health IPUs**

**MD Anderson Head and Neck Center**

- MD Anderson Cancer Center is one of the highest volume hospitals for head and neck cancer in the US, treating **over 2,000 new patients** each year

<table>
<thead>
<tr>
<th>Dedicated</th>
<th>Shared</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Center Management Team</strong></td>
<td></td>
</tr>
<tr>
<td>- 1 Center Medical Director (MD)</td>
<td></td>
</tr>
<tr>
<td>- 2 Associate Medical Directors (MD)</td>
<td></td>
</tr>
<tr>
<td>- 1 Center Administrative Director (RN)</td>
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<tr>
<td><strong>Dedicated MDs</strong></td>
<td></td>
</tr>
<tr>
<td>- 8 Medical Oncologists</td>
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</tr>
<tr>
<td>- 12 Surgical Oncologists</td>
<td></td>
</tr>
<tr>
<td>- 8 Radiation Oncologists</td>
<td></td>
</tr>
<tr>
<td>- 5 Dentists</td>
<td></td>
</tr>
<tr>
<td>- 1 Diagnostic Radiologist</td>
<td></td>
</tr>
<tr>
<td>- 1 Pathologist</td>
<td></td>
</tr>
<tr>
<td>- 4 Ophthalmologists</td>
<td></td>
</tr>
<tr>
<td><strong>Skilled Staff</strong></td>
<td></td>
</tr>
<tr>
<td>- 22 Nurses</td>
<td></td>
</tr>
<tr>
<td>- 3 Social Workers</td>
<td></td>
</tr>
<tr>
<td>- 4 Speech Pathologists</td>
<td></td>
</tr>
<tr>
<td>- 1 Nutritionist</td>
<td></td>
</tr>
<tr>
<td>- 1 Patient Advocate</td>
<td></td>
</tr>
<tr>
<td><strong>Shared MDs</strong></td>
<td></td>
</tr>
<tr>
<td>- Endocrinologists</td>
<td></td>
</tr>
<tr>
<td>- Other specialists as needed</td>
<td></td>
</tr>
<tr>
<td>(cardiologists, plastic surgeons, etc.)</td>
<td></td>
</tr>
<tr>
<td>- Psychiatrists</td>
<td></td>
</tr>
<tr>
<td><strong>Skilled Staff</strong></td>
<td></td>
</tr>
<tr>
<td>- Dietician</td>
<td></td>
</tr>
<tr>
<td>- Inpatient Nutritionists</td>
<td></td>
</tr>
<tr>
<td>- Radiation Nutritionists</td>
<td></td>
</tr>
<tr>
<td>- Smoking Cessation Counselors</td>
<td></td>
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</tbody>
</table>
Integrating Mental Health into Primary Care

• Mental illness is common, yet **underrecognized** and **undertreated**
  – 25% of primary care patients have depression or anxiety
  – Primary care providers recognize only **half** of all mental illnesses
  – Among patients with recognized illness, only **half** are offered medication

• Patients with mental illness frequently present to primary care with **physical health symptoms** (e.g., fatigue, insomnia, palpitations)

• Primary care providers, focusing on physical ailments can overlook **underlying psychological causes**

• Incorporating **mental health clinicians** into primary care will dramatically improve patient value
## Integrating Mental Health into Primary Care
### Four Examples

<table>
<thead>
<tr>
<th>Veteran Health Affairs</th>
<th>Cherokee Health System, Tennessee</th>
</tr>
</thead>
</table>
| - Co-location of Psychiatrists and Primary Care Physicians as core members of the primary care team  
- Open access to Psychiatrists  
- Weekly interdisciplinary team meetings with geographically distant team members via video conferencing | - Behavioural health consultants address psychosocial issues related to chronic illness, including obesity  
- Use of shared electronic medical record |

<table>
<thead>
<tr>
<th>DIAMOND Initiative, Minnesota</th>
<th>Intermountain Healthcare, Utah</th>
</tr>
</thead>
</table>
| - Care managers, supervised by Psychiatrists, provide care for people with depression.  
- Bundled payment includes all care manager activity required by the patient, on a monthly basis.  
- Disease registry for patients with depression using PHQ-9 | - All patients complete questionnaire containing multiple outcome measures e.g., PHQ-9  
- Patients segmented into mild, moderate or high complexity  
- Detailed evidence based guidelines |
Integrating Mental Health Care into Primary Care
Cherokee Health Systems, Tennessee

Source: Center City Exam Pod Layout, 2010
2. Measuring Outcomes and Cost for Every Patient

![Diagram showing the relationship between Patient Initial Conditions, Processes, Indicators, and (Health) Outcomes.](image)

- **Patient Initial Conditions**
  - Protocols/Guidelines
    - E.g., Staff certification, facilities standards

- **Processes**
  - Patient Adherence
    - E.g., Hemoglobin A1c levels for diabetics

- **Indicators**

- **(Health) Outcomes**
The Outcome Measures Hierarchy

Tier 1
Health Status
Achieved or Retained

Tier 2
Process of Recovery

Tier 3
Sustainability of Health

Survival

Degree of health/recovery

Time to recovery and return to normal activities

Disutility of the care or treatment process (e.g., diagnostic errors and ineffective care, treatment-related discomfort, complications, or adverse effects, treatment errors and their consequences in terms of additional treatment)

Sustainability of health/recovery and nature of recurrences

Long-term consequences of therapy (e.g., care-induced illnesses)

Recurrences
Care-induced Illnesses

Source: NEJM Dec 2010

• Clinical Status
• Functional Status

2011.09.03 Comprehensive Deck
The Outcome Measures Hierarchy

Breast Cancer

**Survival**
- Survival rate (One year, three year, five year, longer)

**Degree of recovery / health**
- Degree of remission
- Functional status
- Breast conservation
- Depression

**Time to recovery or return to normal activities**
- Time to remission
- Time to functional status

**Disutility of care or treatment process**
- Nosocomial infection
- Nausea/vomiting
- Febrile neutropenia

**Sustainability of recovery or health over time**
- Cancer recurrence
- Sustainability of functional status

**Long-term consequences of therapy (e.g., care-induced illnesses)**
- Incidence of secondary cancers
- Brachial plexopathy

**Initial Conditions/Risk Factors**
- Stage upon diagnosis
- Type of cancer (infiltrating ductal carcinoma, tubular, medullary, lobular, etc.)
- Estrogen and progesterone receptor status (positive or negative)
- Sites of metastases
- Previous treatments
- Age
- Menopausal status
- General health, including co-morbidities
- Psychological and social factors

**Disutility of care or treatment process**
- Suspension of therapy
- Failed therapies
- Limitation of motion
- Depression

**Sustainability of functional status**
- Incidence of secondary cancers
- Brachial plexopathy
- Fertility/pregnancy complications
- Premature osteoporosis
Adult Kidney Transplant Outcomes

U.S. Centers, 1987-1989

Number of programs: 219
Number of transplants: 19,588
One year graft survival: 79.6%

16 greater than predicted survival (7%)
20 worse than predicted survival (10%)
Adult Kidney Transplant Outcomes
U.S. Center Results, 2008-2010

Number of programs included: 236
Number of transplants: 38,535
1-year graft survival: 93.55%

- 8 greater than expected graft survival (3.4%)
- 14 worse than expected graft survival (5.9%)
Measuring Outcomes for Acute or Complex Mental Health Conditions

Eating Disorders

Survival
- Survival

Degree of recovery / health
- Body Mass Index (weight-to-height ratio)
- Eating disorder severity (E.g., SIAB-S, EDI-2)
- Depression severity (E.g., PHQ-9, BDI)
- General mental health status (E.g., GSI-BSI)

Time to recovery or return to normal activities
- Time to diagnosis and treatment
- Length of stay (days)
- Time to symptom improvement
- Time to return to school/work

Disutility of care or treatment process (e.g., treatment-related discomfort, complications, adverse effects, diagnostic errors, treatment errors)
- Prevalence of refeeding syndrome
- Readmissions
- Prevalence of disengagement with therapy

Sustainability of recovery or health over time
- Maintenance of BMI

Long-term consequences of therapy (e.g., care-induced illnesses)
- Infertility
- Premature osteoporosis
- Self-harm behavior e.g., cutting, suicide attempt

Initial Conditions / Risk Factors
- Age
- Gender
- Ethnicity
- Family history
- Family or life stressors
- Co-morbid psychiatric diagnoses
- Length of time with condition
- Higher BMI
- History of dieting
- Sexual abuse
Outcomes Measurement for Mental Health Conditions
Schön Klinik Roseneck: Eating Disorders Care

• Measures outcomes for **every eating disorder patient**:

<table>
<thead>
<tr>
<th>Outcome Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body-mass Index (BMI)</td>
</tr>
<tr>
<td>Structured Interview for Anorexia and Bulimia (SIAB)</td>
</tr>
<tr>
<td>Eating Disorder Inventory II (EDI-2)</td>
</tr>
<tr>
<td>Beck Depression Inventory (BDI)</td>
</tr>
<tr>
<td>Brief Symptom Inventory Global Severity Index (BSI-GSI)</td>
</tr>
<tr>
<td>Personal Health Questionnaire: Depression (PHQ:Depression)</td>
</tr>
</tbody>
</table>

• Structured **process for learning and improvement**

  — **Quality Reviews**: senior management meets with medical director, quality manager, nursing director, and senior doctors to review patient outcomes and discuss areas for improvement

  — **Practice Group Meetings**: hospital CEO meets with multi-disciplinary group of clinical and administrative leaders treating similar medical conditions to discuss outcomes performance and variation across hospitals
Outcomes Measurement for Mental Health Conditions
Schön Klinik Roseneck: Eating Disorders Care

BMI Effect Size from Admission to Discharge

Year

BMI Effect Size

2002 2003 2004 2005 2006 2007 2008 2009 2010 2011
Measuring the Cost of Care Delivery: Principles

• Cost is the **actual expense** of patient care, not the **charges** billed or collected.

• Cost should be measured around the **patient**.

• Cost should be aggregated over the **full cycle of care for the patient’s medical condition**, not for departments, services, or line items.

• Cost depends on the **actual use of resources** involved in a patient’s care process (personnel, facilities, supplies):
  – The **time** devoted to each patient by these resources
  – The **capacity cost** of each resource
  – The **support costs** required for each patient-facing resource
Mapping Resource Utilization
MD Anderson Cancer Center – New Head and Neck Patient Visit

Registration and Verification
Receptionist, Patient Access Specialist, Interpreter
- Check in patient
  - Communicate arrival
  - RCPT
- Verify patient information; complete consent forms
  - PAS
- Interpreter needed?
  - RCPT
  - Interpreters: Patient Communication
  - INT
  - N: 95%
  - Y: 5%
- Add language translation time for each process
  - INT, RCPT

Intake
Nurse, Receptionist
- Assess patient; assemble paperwork; place patient in room
  - RN
- Laryngoscopy needed?
  - Y: 90%
  - N: 10%
- Perform laryngoscopy
  - MD, MA, PSC

Clinician Visit
MD, mid-level provider, medical assistant, patient service coordinator, RN
- Initiate patient workup; review patient history; conduct physical exam
  - MLP
- Discuss plan of care
  - MD
- Plan of Care Discussion
RN/LVN, MD, mid-level provider, patient service coordinator
- Review plan of care; introduce team; review schedule for return visit
  - RN

Plan of Care Scheduling
Patient Service Coordinator
- Schedule tests and consults; communicate schedule to patient
  - PSC
- Scheduled for same day?
  - Y: 90%
  - N: 10%
- Pt discharged
- Enter next process

Time (min)
- Patient arrives
- RCPT: Receptionist
- INT: Interpreter
- PAS: Patient Access Specialist
- PSC: Patient Service Coordinator
- PHDB: Patient History Database

Changes to Plan of Care?
- Y: 5-10%
- N: 90%

Plan of Care
- Notify patient of changes
  - RN
- Plan of Care
  - 30

Decision point
- RCPT: Receptionist
- INT: Interpreter
- MA: Medical Assistant
- MD: Medical Doctor
- Pt: Patient, outside of process
- PAS: Patient Access Specialist
- PSC: Patient Service Coordinator
- Pt: Patient, outside of process
Selected Cost Reduction Opportunities in Health Care

- **Process variation** that reduces efficiency without improving outcomes
- Over-provision of **low- or non-value adding** services or tests
  - Sometimes to follow rigid protocols or justify billing
- Redundant **administrative** and **scheduling** units
- **Low utilization** of expensive physicians, staff, clinical space and equipment, partly due to duplication and service fragmentation
- Use of **physicians and skilled staff** for less skilled activities
- Delivering care in **over-resourced** facilities
  - E.g. routine care delivered in expensive hospital settings
- **Long cycle times** and unnecessary delays
- Excess **inventory** and weak inventory management
- Focus on minimizing the costs of discrete services rather than **optimizing the total cost** of the care cycle
- Lack of **cost awareness** in clinical teams

- There are numerous cost reduction opportunities that do not require outcome **tradeoffs**, but will actually **improve outcomes**
3. Reimbursing through Bundled Prices for Care Cycles

**Bundled Price**

- A single price covering the **full care cycle for an acute medical condition**
- Time-based reimbursement for overall care of a **chronic condition**
- Time-based reimbursement for **primary/preventive care** for a **defined patient segment**
Bundled Payment in Practice
Hip and Knee Replacement in Stockholm, Sweden

• **Components** of the bundle

<table>
<thead>
<tr>
<th>Components</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-op evaluation</td>
<td>All physician and staff fees and costs</td>
</tr>
<tr>
<td>Lab tests</td>
<td>1 follow-up visit within 3 months</td>
</tr>
<tr>
<td>Radiology</td>
<td>Any additional surgery to the joint within 2 years</td>
</tr>
<tr>
<td>Surgery &amp; related admissions</td>
<td>If post-op infection requiring antibiotics occurs, guarantee extends to 5 years</td>
</tr>
<tr>
<td>Prosthesis</td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td></td>
</tr>
<tr>
<td>Inpatient rehab, up to 6 days</td>
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</tr>
</tbody>
</table>

• Currently applies to all **relatively healthy patients** (i.e. ASA scores of 1 or 2)
• The same **referral process** from PCPs is utilized as the traditional system
• **Mandatory reporting** by providers to the joint registry plus supplementary reporting

• Applies to **all** qualifying patients. Provider participation is **voluntary**, but all providers are continuing to offer total joint replacements

• The Stockholm bundled price for a knee or hip replacement is about **US $8,000**
Bundled Reimbursement for Mental Health Care
Depression Care at Schön Klinik

• In 2009, Schon Klinik negotiated a bundled price for inpatient depression care
  – Payment depended solely on the outcomes achieved, not the length of stay or services provided
  – Early results showed improved outcomes and shorter lengths of stay

<table>
<thead>
<tr>
<th></th>
<th>Patients under bundled payment</th>
<th>All Schön Klinik depression patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>136</td>
<td>8834</td>
</tr>
<tr>
<td>PHQ depression effect size</td>
<td>1.12</td>
<td>1.18</td>
</tr>
<tr>
<td>BDI-II effect size</td>
<td>1.26</td>
<td>1.2</td>
</tr>
<tr>
<td>BSI-GSI effect size</td>
<td>1.01</td>
<td>0.98</td>
</tr>
<tr>
<td>Average length of stay (days)</td>
<td>42.8</td>
<td>49.8</td>
</tr>
</tbody>
</table>

• In 2011, Schön extended the bundle to cover pre- and post-admission outpatient care

• Schön became the single point of contact for newly-diagnosed severely depressed patients, coordinating a network of hospitals, step-down units, and outpatient psychotherapists
4. Integrating Care Delivery Across Separate Facilities
Children’s Hospital of Philadelphia Care Network

The Children’s Hospital of Philadelphia®

Network Hospitals:
- CHOP Newborn Care
- CHOP Pediatric Care
- CHOP Newborn & Pediatric Care

Wholly-Owned Outpatient Units:
- Pediatric & Adolescent Primary Care
- Pediatric & Adolescent Specialty Care Center
- Pediatric & Adolescent Specialty Care Center & Surgery Center
- Pediatric & Adolescent Specialty Care Center & Home Care
5. Expanding Areas of Excellence Across Geography
The Cleveland Clinic Affiliate Practices

- Central DuPage Hospital, IL
  Cardiac Surgery

- St. Vincent Indianapolis, IN
  Kidney Transplant

- Pikeville Medical Center, KY
  Cardiac Surgery

- Cape Fear Valley Medical Center, NC
  Cardiac Surgery

- McLeod Heart & Vascular Institute, SC
  Cardiac Surgery

- Cleveland Clinic Florida Weston, FL
  Cardiac Surgery

- Rochester General Hospital, NY
  Cardiac Surgery

- Chester County Hospital, PA
  Cardiac Surgery

- Charleston, WV
  Kidney Transplant
6. Building an Enabling Information Technology Platform

Utilize information technology to enable restructuring of care delivery and measuring results, rather than treating it as a solution itself.

- Common data definitions
- Combine all types of data (e.g. notes, images) for each patient
- Data encompasses the full care cycle, including care by referring entities
- Allow access and communication among all involved parties, including both physical and mental health providers and patients
- Templates for medical conditions to enhance the user interface
- “Structured” data vs. free text
- Architecture that allows easy extraction of outcome measures, process measures, and activity-based cost measures for each patient and medical condition
- Interoperability standards enabling communication among different provider (and payor) organizations
Creating a Value-Based Health Care Delivery Organization

Implications for Mental Health Providers

1. Organize Care into Integrated Practice Units (IPUs) Around Patient Medical Conditions
   • Work in multidisciplinary teams, not in mental health silos

2. Measure Outcomes and Cost for Every Patient
   • Measure what matters to patients, including both physical and mental health outcomes

3. Reimburse through Bundled Prices for Care Cycles
   • Lead the development of new bundled reimbursement options

4. Integrate Care Delivery Across Separate Facilities
   • Champion service rationalization across hospitals, day treatment facilities, and outpatient providers

5. Expand Excellent IPUs Across Geography
   • Aspire to influence patient care outside the local area

6. Create an Enabling Information Technology Platform
   • Become a champion for EMR systems that improve communication between providers and facilitate long-term follow-up of patients