Why Behavioral Health (BH) Needs Population Management

- Serious Mental Illness (SMI) Benefits
- Currently, Affordable Care Act (ACA) Requires It
- Population Management Needs BH
- Psychiatry Shortage Requires It
Evolution of Population Health and Population Health Management

1990 Evans et al. describe common focus to understand determinants of health

2003 Kindig and Stoddart refine definition to focus on subpopulations and recognizes multiple determinants of health including physical, social and medical care environments

2010 PPACA becomes law, various payment reform programs develop to operationalize Triple Aim and population health management

1997 Kindig defines population health with consideration of cost effective resource allocation

2007 Triple Aim introduced by IHI, provides boost in use of term, population health

2010-2015 many models develop for population health management
The Institute for Healthcare Improvement’s (IHI) Triple Aim

The IHI Triple Aim

Population Health

Experience of Care

Per Capita Cost
Population Health Definitions

The health of the population as measured by health status indicators and as influenced by social, economic and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services (Dunn and Hayes, 1999)

A conceptual framework for thinking about why some populations are healthier than others as well as the policy development, research agenda, and resource allocation that flow from it (Young, 2005)
Population Health Management: 2 Core Pillars

Identification & Management of Clinically Meaningful Population Segments

Identification & Management of Variables that Influence the Health of the Population Segments
Population Management Care Principles

- Population-based
- Data-driven
- Evidence-based
- Client-centered
- Addressing all the Determinants of Health
- Team-based
- Integration of Behavioral and Medical Care
Drivers of Healthcare Costs in the US

A Small Proportion of Patients Account for Large Share of Cost

- Five percent of patients account for almost half (49%) of total health care expenses in the US\(^1-3\)
  - Mental disorders are one of the key drivers of this cost, with the top five conditions accounting for the largest shares of total medical spending\(^1-3\)

<table>
<thead>
<tr>
<th>Condition</th>
<th>US $ Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer</td>
<td>48</td>
</tr>
<tr>
<td>Hypertension</td>
<td>33</td>
</tr>
<tr>
<td>Mental Disorders</td>
<td>46</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>65</td>
</tr>
<tr>
<td>Pulmonary Conditions</td>
<td>45</td>
</tr>
<tr>
<td>Diabetes</td>
<td>27</td>
</tr>
<tr>
<td>Stroke</td>
<td>14</td>
</tr>
</tbody>
</table>

US $ Billion

- Total Treatment Expenditure=$277B
- Total Lost Economic Output=$1,0478

Note: Treatment expenditures for individuals in nursing homes, prisons, or under other institutional care are not included. Treatment expenditures for co morbidities and secondary effects of listed diseases are also excluded

2. MEPS, NHIS, Milken Institute.
Population Condition Overlap

Population with Comorbidities

- Mental Illness/Substance Use Conditions
- Medical Illness
SMI Experience Higher Mortality Rates


### Modifiable and Unmodifiable Risk Factors for Poor Mental Health Outcomes

<table>
<thead>
<tr>
<th>Modifiable Risk Factors</th>
<th>Unmodifiable Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Poorer medication management/med discontinuation</td>
<td>• Functional status</td>
</tr>
<tr>
<td>• Symptom severity</td>
<td>• Quality of Life</td>
</tr>
<tr>
<td>• Substance use</td>
<td>• Family Burden and Social adjustment</td>
</tr>
<tr>
<td>• Illness course</td>
<td>• Daily activities</td>
</tr>
<tr>
<td>• Hospitalizations</td>
<td>• Cognitive function</td>
</tr>
<tr>
<td>• Previous relapse</td>
<td>• Individual variables</td>
</tr>
<tr>
<td>• Incarcerations and violent behavior</td>
<td>• Medication/med effects</td>
</tr>
<tr>
<td>• Suicide attempts</td>
<td>• Previous trauma or developmental disturbances</td>
</tr>
<tr>
<td>• Presence of other psychopathology (particularly schizoaffective disorder)</td>
<td>• Gender</td>
</tr>
<tr>
<td></td>
<td>• Age</td>
</tr>
<tr>
<td></td>
<td>• Body Mass Index</td>
</tr>
</tbody>
</table>
Advanced Population Health Management

Clinically Meaningful Segmentation + Influencing Variable Management

Population Segments: Risk
Demographic Program-specific

- Physical
- Health Services
- Personal Health Practices
- Economic
- Health Services Providers
- Legal
- Childhood Experiences
- Individual Biology
- Personal Competence
- Legal
- Economic
- Health Services Providers
- Personal Health Practices
- Physical

Individual Biology

Population
Segments:
Risk
Demographic
Program-specific

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Comprehensive Population Health Management Solution for Behavioral Healthcare

Texas Association of Health Plans
November 15, 2016
How We Got Here

ODH Uses Select IBM Technologies in the Development of the Mentrics™ Behavioral Healthcare Population Management Technology

During Development, ODH and IBM Studied the Needs and Challenges of Managed Care Organizations and Providers Responsible for Populations of People with Behavioral Health Disorders, and Identified Numerous Issues in an Ecosystem Assessment ...
Ecosystem Findings: Problems Facing Health Plans & Providers...

ODH and IBM Worked Together to Conduct an Ecosystem Assessment and What We Found is:

- Disparate data sources – difficult to pull all relevant information together
- Available predictive models focus on Physical Health
- Meaningful advances needed for Behavioral Health
- Challenging governmental reporting environment
- Need for new technology to optimize staff insights & action
- Provider Network Management
  - Transition to alternate payment model
  - Need improved referrals for specific conditions
Information Silos Create Cumbersome User Interfaces

### Internal Systems

- EMR
- Drug RX
- Substance Use Disorder
- LTC (Paper)

### External Systems

- Data WH
- Payer System
- State System

### Key

- Manual
- Timed Batch

### Connections

- Financial Reports
- Housing DB
- Child Services
- County Systems
- Criminal Justice DB
- Scheduling
- Services
- Demographics
- Diagnosis
- Services
- TRR Assessment
- Clone Data (near real-time)
Our Solution – Mmetrics

Supporting Value Based Strategies in Behavioral Health

- Segment members that will most benefit from care coordination
- Identify gaps in care to improve outcomes and reduce costs
- Optimize network provider performance management
- Monitor organizational and population health performance

Address Behavioral Health “Hot Spots”

- Medical and Behavioral Health Integration
- Substance use disorders / Opioid Abuse
- Social Determinants of Health Status
- Financial Performance (Revenue and Cost)
  - Special Program Segmentation
  - Value based initiatives / Risk Sharing
  - Risk Adjusted ROI
How It Works

- Authorizations
- Claims
- Clinical
- Financial
- Local Services
- Customer Data Source

Data Transformation and Behavioral Health Expertise

Improve Provider Network Performance Management & Population Health Management
How it Works: Mentrics Analytic Innovations

- Behavioral Health Risk Adjustment System
- Mentrics Cost Deviation Detection System™ – MCDDS™
- HEDIS/Quality measures
How It Works: Background

Risk Stratification

A tool for identifying and predicting who is at high risk, or likely to be at high risk, and prioritizing the coordination of their care in order to prevent poor outcomes

**Diagnostically-Based Grouping**
- Chronic Illness & Disability Payment System (CDPS)
- Hierarchical Conditions Categories (HCC)
  - Health & Human Services (HHS)
  - Centers for Medicare & Medicaid Services (CMS)

**Prescription Drug-Based Grouping**
- Medicaid Rx

**Dx/Rx**
- Chronic Illness & Disability Payment System (CDPS-Rx)
- Johns Hopkins Adjusted Clinical Groups (ACG Hopkins)
Cost Trend for Predicting Change in Risk

Proprietary Cost Trend Analytics Engine Drives Timely Alerts Regarding Unexpected Cost Deviation for Each Person in Treatment

- Cost acceleration
- Cost deceleration

Mentrics’ “Early Warning” System – MCDDS™ (Mentrics (Individual) Cost Deviation Detection System™)

- Identifies critical changes in utilization
  - Normal or expected vs outlier or abnormal (Deviation from normal)
- Alerted prior to bearing full burden of cost acceleration
  - Enables rapid intervention
Summary

Behavioral Health Needs Population Management

- Serious Mental Illness (SMI) Benefits
- Affordable Care Act (ACA) Requires It
- Population Management Needs BH
- Psychiatry Shortage Requires It

Remember the Triple Aim

The IHI Triple Aim

Experience of Care
Per Capita Cost

Focus Efforts

Population with Comorbidities

Mental Illness/Substance Use Conditions

Medical Illness

Replace Data Silos with Best Practice Technology

Internal Systems

External Systems

Data Integration
Thank You