Data Driven Practice and Planning

• Lori Raney, MD, John Santopietro, MD
Learning Objectives

Understand the key concepts of measurement-based care

Describe the benefits of using aggregate data to enhance performance in your agency

Given an example of using data to drive care at an organizational level to demonstrate value
Data for Population Health

- Interaction with one patient adds to data on a population
- Information about a population informs care of the individual patient.
- Improving care of one patient helps improve measures of quality and long-term patient outcomes across a practice’s patient population
Fixing Behavioral Healthcare in America

Our issue brief series on Fixing Behavioral Healthcare in America offers key policy recommendations and clear and compelling research to support evidence-based solutions for mental health and addiction.

These briefs were developed through multiple meetings of experts in behavioral health, academia, neuroscience, pediatrics and education, as well as stakeholders from the insurance industry, provider and consumer communities, and government. Collectively, we set out to address the scope of each problem, review supporting research, and develop a series of strategies that we can implement today.

ISSUE BRIEF
A Core Set of Outcome Measures for Behavioral Health Across Service Settings

ISSUE BRIEF
A National Call for Measurement Based Care

ISSUE BRIEF
Integrating and Coordinating Specialty Behavioral Health Care with the Medical System

https://www.thekennedyforum.org/issuebriefs
A Tipping Point for Measurement-Based Care

John C. Fortney, Ph.D., Jürgen Unützer, M.D., M.P.H., Glenda Wrenn, M.D., M.S.H.P., Jeffrey M. Pyne, M.D., G. Richard Smith, M.D., Michael Schoenbaum, Ph.D., Henry T. Harbin, M.D.

Objective: Measurement-based care involves the systematic administration of symptom rating scales and use of the results to drive clinical decision making at the level of the individual patient. This literature review examined the theoretical and empirical support for measurement-based care.

Methods: Articles were identified through search strategies in PubMed and Google Scholar. Additional citations in the references of retrieved articles were identified, and experts assembled for a focus group conducted by the Kennedy Forum were consulted.

Results: Fifty-one relevant articles were reviewed. There are numerous brief structured symptom rating scales that have strong psychometric properties. Virtually all randomized controlled trials with frequent and timely feedback of patient-reported symptoms to the provider during the medication management and psychotherapy encounters significantly improved outcomes. Ineffective approaches included one-time screening, assessing symptoms infrequently, and feeding back outcomes to providers outside the context of the clinical encounter. In addition to the empirical evidence about efficacy, there is mounting evidence from large-scale pragmatic trials and clinical demonstration projects that measurement-based care is feasible to implement on a large scale and is highly acceptable to patients and providers.

Conclusions: In addition to the primary gains of measurement-based care for individual patients, there are also potential secondary and tertiary gains to be made when individual patient data are aggregated. Specifically, aggregated symptom rating scale data can be used for professional development at the provider level and for quality improvement at the clinic level and to inform payers about the value of mental health services delivered at the health care system level.

*Psychiatric Services 2016; 00:1–10; doi: 10.1176/appi.ps.201500439*
MBC Concepts

Process:
• Systematic administration of symptom rating scales – use huddle or registry
• Frequently applied
• NOT a substitute for clinical judgement
• Patient rated scales are equivalent to clinician rated scales

Primary Gains
• Use of the results to drive clinical decision making at the patient level
• Use to overcome clinical inertia

Secondary Gains: Aggregate data for
  – Professional development at the provider level – MACRA
  – Quality improvement at the clinic level
  – Inform reimbursement at the health system level

Ineffective Approaches:
• One-time screening
• Assessing symptoms infrequently
• Feeding back outcomes outside the context of the clinical encounter

Fortney et al Psych Serv Sept 2016
Definition of Collaborative Care

- Collaborative Care is a specific type of integrated care that operationalizes the principles of the chronic care model to improve access to evidence based mental health treatments for primary care patients.

- Collaborative Care is:
  - Team-driven collaboration and Patient-centered
  - Evidence-based and practice-tested care
  - Measurement-guided treatment to target
  - Population-focused
  - Accountable care

http://aims.uw.edu
PHQ 9 > 9

- < 5 – none/remission
- 5 – 9 mild - mod
- 10 – 14 moderate
- 15– moderate severe
- 20 - severe

**PATIENT HEALTH QUESTIONNAIRE (PHQ-9)**

**NAME:** John Q. Sample

**DATE:**

Over the last 2 weeks, how often have you been bothered by any of the following problems? (use "✓" to indicate your answer)

<table>
<thead>
<tr>
<th>Item</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead, or of hurting yourself in some way</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**add columns:**

- 2
- 10
- 3

**TOTAL:** 15

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10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all
- Somewhat difficult ✓
- Very difficult
- Extremely difficult

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FIGURE 1. Time to first clinically significant improvement in depression among patients in a collaborative care model, by follow-up contact in the first four weeks.

- No follow-up contact
- ≥1 follow-up contacts within 4 weeks

Cumulative proportion of sample

Weeks to remission or improvement

Bao et al: Psych Serv 2015
Population-based Approach: Registries to Track Progress

AIMS Center: [http://aims.uw.edu](http://aims.uw.edu)
Performance Measures: Accountability

• Process Metrics:
  – Percent of patients screened for depression
  – Percent with follow-up with case manager within 2 weeks (NQF 0418)
  – Percent not improving that received case review and psychiatric recommendations
  – Percent treatment plan changed based on advice
  – Percent not improving referred to specialty BH

• Outcome Metrics
  – Percent with 50% reduction PHQ-9 HEDIS
  – Percent reaching remission (PHQ-9 < 5 ) NQF 710 and 711

• Satisfaction – patient and provider

• Functional – work, school

• Utilization/Cost
  – ED visits, 30 day readmits, overall cost
CPT Codes for CoCM

G0502 - $143
G0503 - $126 Billed once a month by the PCP
G0502 - $66

• Outreach and engagement by BHP
• Initial assessment of the patient, including administration of validated rating scales
• Entering patient data in a registry and tracking patient follow-up and progress
• Participation in weekly caseload review with the psychiatric consultant
• Provision of brief interventions using evidence-based techniques such as behavioral activation, motivational interviewing, and other focused treatment strategies.
<table>
<thead>
<tr>
<th>Standard</th>
<th>National Quality Forum Number</th>
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<tbody>
<tr>
<td>BMI Screening and Follow-up Adults</td>
<td>NQF 0421</td>
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<tr>
<td>BMI Screening and Follow-up Children</td>
<td>NQF 0024</td>
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<td>Controlling High Blood Pressure</td>
<td>NQF 0018</td>
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<tr>
<td>Tobacco Use Screening and Cessation Intervention</td>
<td>NQF 0028</td>
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<td>Diabetes Screening for People with Schizophrenia or Bipolar Disorder who Are Using Antipsychotic Medications</td>
<td>NQF 1932</td>
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<tr>
<td>Diabetes Care for People with Serious Mental Illness: Hemoglobin A1c (HbA1c) Poor Control (&gt;9.0%)</td>
<td>NQF 2607</td>
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<tr>
<td>Metabolic Monitoring for Children and Adolescents on Antipsychotics</td>
<td>NQF 1933</td>
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<td>Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia</td>
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<tr>
<td>Category</td>
<td>Clinic</td>
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<tr>
<td>--------------------------------</td>
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</tr>
<tr>
<td>Alcohol Screen</td>
<td>73.3%</td>
</tr>
<tr>
<td>Depression Screen</td>
<td>77.2%</td>
</tr>
<tr>
<td>IPV/DV Screen</td>
<td>33.5%</td>
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<tr>
<td>Colorectal Screen</td>
<td>42.2%</td>
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<tr>
<td>Mammogram Rates</td>
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<tr>
<td>Pap Smear Rates</td>
<td>27.1%</td>
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<tr>
<td>Tobacco Cessation LTR, BLS or Quit</td>
<td>12.5%</td>
</tr>
<tr>
<td>CHD Comprehensive</td>
<td>39.0%</td>
</tr>
<tr>
<td>Dental Access</td>
<td>83.1%</td>
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<tr>
<td>Dental Sealants</td>
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<tr>
<td>Topical Fluoride</td>
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<tr>
<td>DM: BP ≥ 140/90</td>
<td>73.1%</td>
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<tr>
<td>DM: Retinal Edema</td>
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<tr>
<td>Influenza ≥ 65+</td>
<td>75.8%</td>
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<tr>
<td>Pneumonia 12-65+</td>
<td>61.5%</td>
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<tr>
<td>Obese Children 2-5yrs</td>
<td>22.2%</td>
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Data Driven Practice and Planning

John Santopietro, MD, DFAPA
Carolinas HealthCare System
NatCon 2017
Carolinas HealthCare System

- **39 hospitals** and **900+ care locations** in North Carolina, South Carolina and Georgia
- More than **7,800** licensed beds
- More than **11 million** patient encounters in 2013
- **3,000+** system-employed physicians, **14,000+** nurses and more than **60,000** employees
- **$1.5 billion** in community benefit in 2013
- More than **$8 billion** in annual revenue
- **One** of the largest HIT and EMR systems in the country – Cerner’s largest contract
WHERE WE ARE

1. Alamance Regional Medical Center
2. ArMed Health Medical Center
3. ArMed Health Rehabilitation Hospital
4. ArMed Health Women’s and Children’s Hospital
5. Annie Penn Hospital
6. Bon Secours/St. Francis Hospital
7. Cannon Memorial Hospital
8. Carolinas Medical Center
9. Carolinas Medical Center-Union
10. Carolinas Medical Center-Mercy
11. Carolinas Medical Center-NorthEast
12. Carolinas Medical Center-Pineville
13. Carolinas Medical Center-Randolph
14. Carolinas Medical Center-Union
15. Carolinas Medical Center-University
16. Carolinas Rehabilitation
17. Carolinas Rehabilitation-Mount Holly
18. Carolinas Rehabilitation-NorthEast
19. CHS Anson
20. CHS Behavioral Health-Davidson
21. CHS Blue Ridge-Morganton
22. CHS Blue Ridge-Wilkes
23. CHS Rehabilitation
24. Cleveland Regional Medical Center
25. Columbus Regional Healthcare System
26. Cone Health Behavioral Health Hospital
27. Elbert Memorial Hospital
28. Kings Mountain Hospital
29. Levine Children’s Hospital
30. Moses H. Cone Memorial Hospital
31. Murphy Medical Center
32. Roper Hospital
33. Roper St. Francis-Mount Pleasant Hospital
34. Scotland Memorial Hospital
35. St. Luke’s Hospital
36. Starly Regional Medical Center
37. Wesley Long Hospital
38. Wilkes Regional Medical Center
39. Women’s Hospital
Behavioral Health Integration: IMPACT

- PCP
- Patient
- BHP/Care Manager
- Consulting Psychiatrist
- Other Behavioral Health Clinicians
- Substance Treatment, Vocational Rehabilitation, CMHC, Other Community Resources
- Core Program
- New Roles
- Additional Clinic Resources
- Outside Resources
Deconstructing the BHP by Function

- BH Screener
- BH Diagnoser
- BH Treater
- BH Navigator
- BH Coach/Activator
- BH Communicator
Reconstructed “BHP” (Team)

- BHP
  - Call Center Clinician
  - Care Manager
  - Coach
  - Pharm D
  - Therapist
  - Psychiatrist
Go Virtual
# PHQ9 Report

**Date Range:** 02/14/17 - 02/14/17  
**Report Run Date:** 02/15/2017

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<tr>
<th>UMPI</th>
<th>PATIENT</th>
<th>BIRTH DATE</th>
<th>CHS SITE DESCRIPTION</th>
<th>SCREEN DATE</th>
<th>PHQ9 TOTAL</th>
<th>Q9</th>
<th>DRUG ORDERED</th>
<th>PSYCH DRUG YEAR BEFORE</th>
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Depression: PRE - POST

Change between the FIRST and LAST PHQ-9 score (n=331)

Average PHQ-9 before health coaching = 16.7 (± 4.3)

49% decrease in PHQ-9 score

Average PHQ-9 after health coaching = 8.7 (± 7.0)

Median PHQ9 = 16*

Average PHQ-9 score decrease = 8.0 (± 7.5)*

p < .0001**

*Captures change within the same patient (pre-post analysis using paired t-test procedure)

**p-value <.05 indicates statistically significant change
Anxiety: PRE - POST

Change between the FIRST and LAST GAD-7 score (n=326)

Average GAD-7 before health coaching = 13.0 (± 5.8)  
38% decrease in GAD-7 score

Average GAD-7 after health coaching = 8.0 (± 6.5)

Average GAD-7 score decrease = 5.0 (± 6.9)*
p < .0001**

Median GAD7 = 14*

Median GAD7 = 7*

*Captures change within the same patient (pre-post analysis using paired t-test procedure)

**p-value < .05 indicates statistically significant change
HgB A1C

<table>
<thead>
<tr>
<th></th>
<th>Mean (± Standard Deviation)</th>
<th>Mean change</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>8.6 (±2.4)</td>
<td>↓0.8 (±1.8)</td>
<td>p=.0002</td>
</tr>
<tr>
<td>6 months</td>
<td>7.7 (±1.9)</td>
<td></td>
<td></td>
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*p-value <.05 indicates statistically significant change (statistical significance doesn’t always indicate clinical significance)
Lipids: Total Cholesterol

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (± Standard Deviation)</td>
<td>177.0 (±42.8)</td>
<td>166.8 (±42.3)</td>
</tr>
<tr>
<td>Mean change</td>
<td>↓10.2 (±37.9)</td>
<td></td>
</tr>
<tr>
<td>p-value*</td>
<td>p=.066</td>
<td></td>
</tr>
</tbody>
</table>

- Borderline significant

*p-value <.05 indicates statistically significant change (statistical significance doesn’t always indicate clinical significance)
Lipids: LDL

<table>
<thead>
<tr>
<th></th>
<th>Mean (± Standard Deviation)</th>
<th>Mean change</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>94.5 (±40.7)</td>
<td>↓ 9.3 (± 33.3)</td>
<td>p=.064</td>
</tr>
<tr>
<td>6 months</td>
<td>85.2  (±35.3)</td>
<td></td>
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</tbody>
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*p-value <0.05 indicates statistically significant change (statistical significance doesn’t always indicate clinical significance)
“I am so thankful that you all call and check on me, it makes me feel like I’m cared about. It’s people like you that really do make a difference in some old people’s lives.”