Using Patient-Facing Kiosks to Support Quality Improvement at Mental Health Clinics

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September 17, 2013
Key Questions for today

- How can we work in a partnered way?
- Can care in specialty mental health be improved?
- What is the role of data in quality improvement?
- How do we get those data and from whom?
Poll Question

In which of the following areas do you have experience (answer as many as are applicable):

- Mental Health
- Quality Improvement
- Health Information Technology (development or implementation)
- None of the above
When we began....

Matt, Alex, Amy, Alison

Greater Los Angeles VA
Schizophrenia

- Most common serious mental illness
- Chronic disorder of thought
- Cognitive deficits: attention, memory, information processing, executive functioning

- 10% of all permanently disabled people
- 100,000 Veterans with schizophrenia treated annually

- Evidence-based practices exist
  - often not available or used; outcomes poorer than expected
Improving Specialty Mental Health Care

- Efforts to improve care have often had limited or no success
  - research has lacked data on implementation process

- Challenges
  - patients: cognitive deficits, limited literacy, poor advocates
  - providers: often lack key competencies
  - medical records: no data on patient preferences, specific psychosocial services, outcomes
  - policy makers: cannot identify unmet patient needs or evaluate the effectiveness of care
  - system: limited time in clinical encounter, limited dollars
The Feasibility of Computerized Patient Self-assessment at Mental Health Clinics

Matthew Chinman · Joseph Hassell · Jennifer Magnabosco · Nancy Nowling · Susan Marusak · Alexander S. Young

The Accuracy of Medical Record Documentation in Schizophrenia

Julie Cradock, PhD
Alexander S. Young, MD, MSHS
Greer Sullivan, MD, MSPH

The Journal of Behavioral Health Services & Research 28:4 November 2001

Information Technology to Support Improved Care For Chronic Illness

Application of Information Technology

A Network-Based System to Improve Care for Schizophrenia: The Medical Informatics Network Tool (MINT)

Alexander S. Young, MD, MSHS, Jim Mintz, PhD, Amy N. Cohen, PhD, Matthew J. Chinman, PhD

Institute of Medicine: Crossing the Quality Chasm
Health Information Technology (HIT)

2001

2003
President’s New Freedom Commission
VHA Strategic Plan
Recovery Movement in Mental Health + Patient Centered Care

2001 EQUIP1
2005 EQUIP2

2006
Implementation Science Journal
Methods in Quality Improvement Research
EQUIP2: ENHANCING QUALITY OF CARE IN PSYCHOSIS

Funded by VA HSR&D QUERI (MNT 03-213)
EQUIP Specific Aims

- Assist 4 medical centers to implement and sustain evidence-based care for schizophrenia

- Evaluate the effect (relative to usual care) of care model implementation on service utilization and patient outcomes.

- Using mixed methods, evaluate processes of and variations in care model implementation and effectiveness.
Clinic-level controlled trial
- 801 patients with schizophrenia; 201 providers

Research-Network partnership in 4 VISNs
- 1 intervention, 1 control site in each VISN (8 medical centers)
- Strategic planning for evidence-based care targets
EQUIP Team

**VISN 3**
Eran Chemerinski, MD (PI: Bronx)
Charlene Thomesen, MD (PI: Northport)
  Mara Kushner Davis, CSW
  Ann Feder, LCSW
  Bruce Levine, MD
  Claire Henderson, MD, MPH
  Deborah Kayman, PhD
  Helen Rasmussen, PhD
  Amy Look

**VISN 16**
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Dean Robinson, MD (PI: Shreveport)
  Kathy Henderson, MD
  Vance Hamilton, MD
  Deborah Mullins, PhD
  Avila Steele, PhD
  Christy Gamez-Galka, PhD
  Ethel Williams, RN

**VISN 22**
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  Larry Albers, MD
  Kirk McNagny, MD
  David Franklin, PsyD, MPH
  Stacey Maruska, LCSW
  Kathy Allan, RN

**VISN 17**
Max Shubert, MD (PI: Central Texas)
  Kathryn Kotrla, MD
  Wendell Jones, MD, MBA
  Paul Hicks, MD
  Staley Justice, MSW
  Sherry Fairchild, PhD
  Kathryn McNair, RN

**Los Angeles MIRECC (Coordinating Site)**
Alexander S. Young, MD, MSHS (PI)
  Fiona Whelan, MS
  Youlim Choi

Amy N. Cohen, PhD (co-PI)
  Alison Hamilton, PhD, MPH
  Paul Jung
Intervention: implement chronic illness care model to increase use of evidence-based practices for individuals with schizophrenia; use evidence-based quality improvement to support moving research into practice

- Weight services
- Supported Employment

Control: usual care

Quantitative Assessments:
- Patients and Providers: 0, 7, 15 months

Qualitative Assessments:
- Patients: 15 months only
- Providers: 0, 7, 15 months
Obesity is a Serious Problem in People with Schizophrenia

- Weight gain is the most common medication side-effect; up to 10 lbs/month
- People with schizophrenia
  - die 11-17 years prematurely
  - mostly due to cardiovascular disease and cancer
  - have not benefitted from improvements seen in general population over past decades
- Potential interventions
  - change to different antipsychotic medication
  - augment with a weight loss medication
  - provide a psychosocial intervention for weight
Evidence for Psychosocial Weight Management

- Reviews and meta-analyses indicate there are effective psychosocial interventions specifically designed for individuals with schizophrenia
- 7 RCTs indicated:
  - intervention > control
  - individual or group format
  - 3-6 months
  - modest weight loss; mean = 6 pounds
  - modest weight loss has been associated with health benefits

Individuals with schizophrenia who are overweight or obese should be offered a psychosocial intervention for weight
Evidence-Based Quality Improvement (EBQI)

- Structured form of Continuous Quality Improvement that,
  1) incorporates a research/clinical partnership
  2) uses top-down and bottom-up features to engage organizational senior leaders and quality improvement teams in adapting and implementing improvements
  3) focuses on prior research evidence regarding clinical guidelines for treatment, previously validated care models, and provider behavior change methods that promote adherence to appropriate treatment

GOAL: translation of research on care delivery models into routine practice

Evidence-Based Quality Improvement (EBQI)

- Leadership support
- Clinical champion
- Provider education
- Quality manager
- Routine data
- Patient education
- Performance feedback
Implementation Phase
Strategies and Tools

- Routine assessment of patients
- Education (Patient and Provider)
- Quality manager (Nurse)
- Care Management software
- Routine provider feedback (patient-level data); Clinical Champions for support/education
- Routine manager/administrator feedback (clinic-level data)
- Local EBQI teams (led by Local Recovery Coordinator)
Routine Assessment of Patient Needs and Preferences

Patient Assessment System (PAS)

- Kiosk in waiting room for patients’ use at every visit
- Touchscreen, headphones, color printer, scale
Patient Assessment System (PAS)

- Audio, computer assisted self-interviewing
**Weight Status (education)**

Overweight, and describes risks due to this

**What you can do (advocacy)**

You should discuss with your doctor about changing medication and/or referral to wellness program

**Weight tracking (self-monitoring)**

Weight now and at last 2 appointments + ideal weight indicated
Routine Education of Patients

**WEIGHT MATTERS: Helping you control weight gain**

**How can I tell if I'm overweight?**

- **Determine your Body Mass Index (BMI).**
  - Use the BMI table on the next page. Follow the instructions, using your height and weight to figure your BMI. People with a BMI between 19 and 22 live the longest.
  - Determine your Body Mass Index (BMI).
  - A **woman** whose waist is more than 35 inches is considered overweight.
  - A **man** whose waist is more than 40 inches is considered overweight.

**Why should I be concerned about weight gain?**

- Weight gain is a side effect of certain antipsychotic medications. Being overweight increases your risk for other medical conditions:
  - Poor sleep
  - High blood pressure
  - Diabetes
  - Heart Attack
  - Stroke
  - Arthritis
  - Cancer

**What can I do if I'm overweight?**

- **Talk to your clinician about your weight.**
- **Weigh yourself once a week.**
- **Ask your doctor if your medications are affecting your weight.**
- **Change your diet.**
- **Eat smaller food portions.**
- **Ask your clinician for a referral to our Wellness Program.**

**Body Mass Index Table**

Body Mass Index (BMI) is a number calculated from a person’s weight and height. The higher a person’s BMI, the higher the percentage of fat in his/her body. BMI is used to screen for weight categories that may lead to health problems.

To figure out your BMI, in the left column labeled “Height (Feet & Inches)” find the row with your height. Then move to the right in that row until you find your “Weight (Pounds).” The number at the top of that column, in the top-most row labeled “BMI,” is your Body Mass Index. For example, if you are 5’6” and weigh 192 pounds, you would find 5’6” in the left column, move to the right across the table to the column with “192.” Moving up that column in the red area to the top row, you will find a BMI of 31.

**Make healthy food choices and know your portion size.**

- **One portion of...**
  - Meat: 3 ounces cooked
  - Cheese: 1 ounce
  - Potato: 1/2 cup
  - Bread: 1 slice
  - Cereal: 1 ounce
  - Rice or pasta: 1/2 cup cooked
  - Salad dressing or gravy: 2 tablespoons
  - Fruits and vegetables: 1/2 cup chopped, cooked or canned
  - Juice (fruit or vegetable): 3/4 cup

- **Serving size of...**
  - A deck of cards
  - A pair of dice
  - An ice cream scoop
  - Half a bagel, half an English muffin, half a hamburger or hotdog bun
  - A very small bowl in which side dishes are served at a cafeteria
  - A medium apple or orange
  - A small juice glass

**Table:**

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Education of Providers

By local experts and opinion leaders
### Caseload Tracking Report

**Active Patient Report for:** Amelia Bowman

**Report Created on:** Wednesday, October 22, 2008, 10:20 AM

<table>
<thead>
<tr>
<th>SSN</th>
<th>Name</th>
<th>Case Manager</th>
<th>Psychiatrist</th>
<th># of Care Plans</th>
<th>Most Recent Care Plan</th>
<th>Most Recent PAS</th>
<th>Next Appointment</th>
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## Intervention Status

**Date:** 1/30/2009  
**VISN:** A

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<th>Weight</th>
<th>Number of Patients</th>
<th>%</th>
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<tr>
<td>Overweight or gaining weight</td>
<td>65</td>
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<td>Prescribed olanzapine</td>
<td>18</td>
<td>28%</td>
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<tr>
<td>Prescribed risperidone or quetiapine</td>
<td>31</td>
<td>48%</td>
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<tr>
<td>Referred to wellness group</td>
<td>40</td>
<td>62%</td>
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<tr>
<td>Going regularly to wellness</td>
<td>18</td>
<td>28%</td>
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## Benchmark Status

**Date:** 1/30/2009  
**VISN:** A

<table>
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<th>Patients receiving a psychosocial intervention for weight / Overweight patients</th>
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<tbody>
<tr>
<td>Other Site</td>
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<tr>
<td>Other Site</td>
<td>9%</td>
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<tr>
<td>Other Site</td>
<td>33%</td>
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<tr>
<td>YOUR SITE</td>
<td>28%</td>
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</table>
Care Reorganization

Developed new care flow diagram that included

- weighing of each patient at each visit (scale at kiosk)
- immediate information on weight for this session and last 2 sessions
  (Summary Report, care management tracking)
- routinized referral to weight program
- routinized feedback on progress towards goals
  (Summary Report, care management tracking)
Care Reorganization (continued)

- Trained staff to lead evidence-based weight management program (16 sessions)
- Freed up staff time to deliver program
- Identified room large enough for groups
- Identified other weight and exercise programs that exist at the medical center
Practice Phase
Strategies and Tools

- Kiosk maintenance; routine use
- Routine education to providers
- Monthly Quality Meeting/Quality Reports; support
- Continue tailoring from formative evaluation data and provider and leader input
- Continue local EBQI teams; Practice-Do-Study-Act (PDSA) cycles
Sustainability Phase
Strategies and Tools

- Kiosk integrated into regular care
- Education to new hires; new patients
- Quality Meetings/Quality Reports; support
- Local EBQI teams integrated into system
WEIGHT OUTCOMES
Patient Characteristics

- N=571 eligible for weight services
  - N=801 patients with schizophrenia

- Average age = 54
- 91% male
- 45% white; 46% African-American
- 68% HS or some college
- 44% were overweight; 56% were obese

Weight service utilization in year prior to baseline:
- Average 3 appointments (SD=4.5)
- Rate of having at least one appointment in previous year is comparable at intervention (13%) and control sites (18%) (p>0.05)
Intervention status (intervention vs control) was a significant predictor of having a weight management visit ($\chi^2=10.5, p<0.01$) after controlling for demographics and weight category (overweight or obese).

Overweight individuals at intervention sites 2.3 times more likely than controls to have a weight service appointment.

Individuals receiving intervention more likely to use weight services.
Intervention status was a significant predictor of the number of days to the first weight management visit ($t=2.0$, $p=0.05$) after controlling for demographics and weight category.

- Individuals at control sites averaged 136 days (SE=17)
- Individuals at intervention sites averaged 98 days (SE=15)

Individuals receiving intervention start to use services 5 weeks sooner.
Intervention status was a significant predictor of the number of weight management visits ($t=-4.6$, $p<0.01$) after controlling for demographics and weight category.

- **Control sites**: pre=4 visits; post=4 visits
- **Intervention sites**: pre=3 visits; post=12 visits

Individuals receiving intervention continue to use the services 3 times more than controls.
Control group was, on average, 13.4 +/- 7.6 lbs heavier than the intervention group at the end of the study year (F=4.83, p=0.03)

Individuals receiving intervention maintained weight; stopped gaining
Acceptability of the Kiosks

**Patients:**
- 76% reported they enjoyed using the kiosk
  - “Sitting at the computer was one of the highlights of the project.”
- 71% reported they like getting the Summary Report
  - “It helped me see my progress in black and white.”
- Noted that kiosk questions promoted self-reflection
  - “It kept me in check with myself.”
  - “It helped me connect the dots.”

**Providers:**
- “The availability of the computer has made it easy for [patients] to monitor how they’re doing with [their weight].”
- “We weren’t doing a bad job before, but now we are doing an enhanced job.”
- Another commented that giving data to clinicians was essential.
Conclusions

- This is the largest QI effort in VA specialty mental health to date. Working in a partnered way was critical to the success of this study.

- Evidence-based quality improvement, including integration of routine data from patient-facing kiosks, resulted in timelier and greater utilization of services and improved patient outcomes.

- The kiosks were central to the care reorganization; were feasible in usual care clinics and acceptable to both patients with schizophrenia and their providers.
Key Questions and the Answers

- How can we work in a partnered way?
- Can care in specialty mental health be improved?
- What is the role of data in quality improvement?
- How do we get those data and from whom?
What’s next for patient-facing kiosks?

- Front end interface for the VA Mental Health package
- Delivery of evidence-based care (weight management services)
- Gather and rank patient treatment preferences
Funding Support
- VA HSR&D QUERI (MNT 03-213)
- VA Desert Pacific Mental Illness Research, Education and Clinical Program (MIRECC)
- VA HSR&D Center of Excellence for the Study of Healthcare Provider Behavior

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References


