Improving Integrated Care with Digital Technology Tools
September 15, 2015  2:00 p.m. Eastern

David Brody, Denver Health Medical Plan
Dara Hessee, The Colorado Health Foundation
Steven Lesky, Cambia Health Foundation
Pat Millar, Weber Human Services
Starr Stratford, Utah SmartCare
Tanya Weinberg, The Colorado Health Foundation
Improving Integrated Care with Digital Technology Tools

Grantmakers in Health Webinar
September 15, 2015

Based in Portland, Oregon, Cambia Health Foundation is the corporate foundation of Cambia Health Solutions, a total health solutions company dedicated to transforming the way people experience health care.
Improving Patient Engagement & Outcomes Through An Innovative Care Model
How do we bridge the gap between behavioral health and physical health care?

- Co-location
- Integrated Care Teams
- Technology
What is the benefit?

What is the risk?

What are your strategies for risk mitigation?
The Ginger.io Platform

Data Collection
- Location
- Self Reported

Analytics Engine
- Socialization
- Activity
- Quality-of-Life

Patient Health Status

Patient Smartphone App

Provider Dashboard

Patient Support Network
Ginger.io Transitions Care from **Episodic Data** to **Continuous Insight**

![Graph showing transitions from episodic to continuous data](image)
EXPECTED OUTCOMES

Triple Aim + Provider Satisfaction

• Improved Patient Care
  • Patient satisfaction, patient engagement

• Improved Health Outcomes (behavioral and physical)
  • Improved PHQ 9 and OQ scores, labs and vitals, hospitalizations

• Cost Savings
  • Reduced ED visits, reduced hospitalizations, total patient cost
**Benefits**

Patients
- Connection to caregiver(s)
- Insight into physical/mental health

Care Providers
- Alert(s)
- Pattern(s) identified

**Barriers**

Patients
- Access to smartphone(s)

Care Providers
- Limited access to information
Monthly Progress Report

Utah Smart Care in Weber County

Last 30 Days

- **88** Active Patients
- **12** New Patients Invited
- **20** Average Weekly Patient Alerts

To Date

- **118** Activated Patients
- **85%** Patients Engaged**
- **82%** Confidence***

Enrollment

Monthly Patient Enrollment

Survey volume

Total PHQ-9s Completed Since Launch

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*Active* = patients currently using the app.

**Engaged** = person engaging with the app after 30 days.

***Confidence*** = person answered positively to “Does Grazier help you feel more confident that you are able to manage your mental health condition?”
LESSONS FOR SIMILAR PROJECTS

Choose Project Partners Carefully

Involve Clinicians

Be Flexible

Keep Your Funders Informed
Health IT Changes Daily
How Funders Can Add Value (beyond funding)

- Assist grantees with contracts and negotiations
- Review sustainability of technology and project
- Consider other non-financial resources or support you can provide
Technology Sector vs. Health & Human Services
The Challenges of Aligning Paradigms

• Funding

• Timeframe

• Priorities
Flexibility and Adaptability
Are you ready for a pivot?

Be a flexible grant maker

Prepare your grantees for change

Ensure end users are supported through change
Together

Technology & Integrated Care
GIH Webinar
September 15, 2015
Together, we will make Colorado the healthiest state in the nation.

By investing in our three community outcomes...

Healthy Living

Health Care

Health Coverage

and by using six key tools...

Leadership
Grantmaking
Policy
Communications
Private Sector Investments
Medical Residencies

we will achieve our measurable results.
Health Care

Goal
All Coloradans achieve health with support from a network of primary health care and community services

Strategies
- Support communities to prevent disease and improve population health
- Strengthen the delivery of comprehensive, person-centered primary care
- Empower individuals and families to manage their own health
Grants to Denver Health

November 2010
- Integrated Behavioral Health Specialists
- Care Management Software
- Telephonic Counseling
- Interactive Voice Recognition (IVR) Follow up

July 2014
- Integrated Behavioral Health Specialists
- ‘Improve Your Health’
- Telephonic Counseling
- Self-Management Technologies
The Development of Technology Facilitated Behavioral Health Care at Denver Health

David Brody, MD
Medical Director
Denver Health Managed Care Plans
Professor of Medicine
University of Colorado School of Medicine
<table>
<thead>
<tr>
<th>Activity</th>
<th>Funder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephonic Depression Intervention</td>
<td>RWJF</td>
</tr>
<tr>
<td>Telephonic Depression/Anxiety Intervention</td>
<td>CHF</td>
</tr>
<tr>
<td>Telephonic Adolescent/Depression/Self Harm Pilot</td>
<td>CHF</td>
</tr>
<tr>
<td>Integrated Care at Lowry, Eastside &amp; Westside</td>
<td>CHF</td>
</tr>
<tr>
<td>Improve Your Health Behavioral Risk Factor Screening Intervention</td>
<td>CHF (ACT grant)</td>
</tr>
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</table>
## Telephonic Depression Intervention

Outcomes assessed at baseline, 6, 12, and 24 weeks

<table>
<thead>
<tr>
<th>Phone Calls</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 5</th>
<th>Week 7</th>
<th>Week 9</th>
<th>Week 11</th>
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</thead>
<tbody>
<tr>
<td>Diagnostic assessment</td>
<td>Full</td>
<td>PHQ9</td>
<td>PHQ9</td>
<td>PHQ9</td>
<td>PHQ9</td>
<td>PHQ9</td>
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<tr>
<td>Medication adherence</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Behavioral activation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Developing self care plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Patients receive copy of depression coping plan</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Benefits for Patients

Telehealth benefits **patients** by:

- Eliminating need for *transportation* and *child care*
- Increasing access to care through *lower costs, provider availability*, extended *coverage to underserved populations and underserved geographical regions*
- Reducing *stigma* associated with being seen in a mental health clinic
- Facilitating *willingness to disclose personal information*
## Outcomes

<table>
<thead>
<tr>
<th>Improvement in PHQ-9*</th>
<th>UC</th>
<th>TC</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Week</td>
<td>3.349</td>
<td>3.627</td>
<td>0.665</td>
</tr>
<tr>
<td>12 Week</td>
<td>5.348</td>
<td>6.976</td>
<td>0.036</td>
</tr>
<tr>
<td>24 Week</td>
<td>7.499</td>
<td>9.109</td>
<td>0.058</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Improvement in Hopkins* (HSCL)</th>
<th>UC</th>
<th>TC</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Week</td>
<td>0.048</td>
<td>0.094</td>
<td>0.559</td>
</tr>
<tr>
<td>12 Week</td>
<td>0.072</td>
<td>0.390</td>
<td>0.001</td>
</tr>
<tr>
<td>24 Week</td>
<td>0.272</td>
<td>0.578</td>
<td>0.013</td>
</tr>
</tbody>
</table>
TDI Changes

- Patients with just anxiety can be included
- Primarily enrolling patients referred by PCP or self-referred
- No control group
- Patients may select up to 3 modules from a total of 12 available modules
- Number of therapy sessions increased from 5 to 8 plus booster sessions for patients who have relapsed
- Improved PCP feedback process which includes algorithm based medication recommendations
Module Choices

Patients can choose at least 3 call topics

- Getting Going
- Grief and Loss
- Healthy Eating
- Healthy Relationships
- Improve Sleep Patterns
- Manage Stress Better
- Mind Tricks for Pain
- Overcoming Illness
- Physical Activity
- Positive Thinking
- Problem-Solving
- Worrying Less
- Next up - Trauma
DENVER HEALTH MEDICAL CENTER

Telephonic Counseling for Depression and Anxiety
Provider Feedback Report – Follow-Up Calls

PHQ-9 Scores

<table>
<thead>
<tr>
<th>Baseline:</th>
<th>6 week:</th>
<th>12 week:</th>
<th>24 week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ No depression</td>
<td>☐ No depression</td>
<td>☐ No depression</td>
<td>☐ No depression</td>
</tr>
<tr>
<td>☐ Mild</td>
<td>☐ Mild</td>
<td>☐ Mild</td>
<td>☐ Mild</td>
</tr>
<tr>
<td>☐ Moderate</td>
<td>☐ Moderate</td>
<td>☐ Moderate</td>
<td>☐ Moderate</td>
</tr>
<tr>
<td>☐ Moderately Severe</td>
<td>☐ Moderately Severe</td>
<td>☐ Moderately Severe</td>
<td>☐ Moderately Severe</td>
</tr>
<tr>
<td>☐ Severe</td>
<td>☐ Severe</td>
<td>☐ Severe</td>
<td>☐ Severe</td>
</tr>
</tbody>
</table>

PHQ-9 SCORING KEY
No depression < 5
Mild 5.0 - 9.9
Moderate 10.0 - 14.9
Moderately Severe 15.0 - 19.9
Severe 20.0 - 27.0

GAD-7 Scores

<table>
<thead>
<tr>
<th>Baseline:</th>
<th>6 week:</th>
<th>12 week:</th>
<th>24 week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ No anxiety</td>
<td>☐ No anxiety</td>
<td>☐ No anxiety</td>
<td>☐ No anxiety</td>
</tr>
<tr>
<td>☐ Mild</td>
<td>☐ Mild</td>
<td>☐ Mild</td>
<td>☐ Mild</td>
</tr>
<tr>
<td>☐ Moderate</td>
<td>☐ Moderate</td>
<td>☐ Moderate</td>
<td>☐ Moderate</td>
</tr>
<tr>
<td>☐ Moderately Severe</td>
<td>☐ Moderately Severe</td>
<td>☐ Moderately Severe</td>
<td>☐ Moderately Severe</td>
</tr>
<tr>
<td>☐ Severe</td>
<td>☐ Severe</td>
<td>☐ Severe</td>
<td>☐ Severe</td>
</tr>
</tbody>
</table>

GAD-7 SCORING KEY
No anxiety < 5
Mild 5.0 - 10.9
Moderate 11.0 - 14.9
Moderately Severe 15.0 - 21.9
Severe 22.0 - 27.0

Suicide Assessment
☐ No safety concerns at this time
☐ Concern of harm to self/others including:
☐ Thoughts ☐ Plan ☐ Means
☐ intent ☐ Past Attempt(s)
☐ Protective factors include:
☐ Goal-directed behavior ☐ Religious/spiritual beliefs
☐ Motivated for treatment ☐ Other:
☐ Reviewed case with supervisor and notified PCP

Medication Adherence:
☐ N/A - patient not currently prescribed psychotropic medications.
☐ Patient reports taking psychotropic medication as prescribed.
☐ Patient reports taking psychotropic medication inconsistently or differently than prescribed.
☐ Patient denies taking prescribed psychotropic medication secondary to:
☐ Patient no longer interested in pharmacotherapy.
☐ Patient would like to change psychotropic medications due to:

Medication Management Recommendations*

<table>
<thead>
<tr>
<th>Response</th>
<th>PHQ-9 or GAD-7 score after 4-6 weeks</th>
<th>Depression</th>
<th>Treatment Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remission</td>
<td>Score &lt; 5</td>
<td>No treatment change needed. Follow-up again after an additional 4 weeks</td>
<td></td>
</tr>
</tbody>
</table>

Partially responsive
Decrease in score but still ≥ 5
Consider increasing dose and continue to increase until max. Then consider augmenting with another antidepressant (i.e., Wellbutrin if currently on an SSRI or possibly Remeron if on SNRI).
Consider increasing dose and continue to increase until max. Then consider augmenting with anti-anxiety (i.e., Buspar, Hydroxyzine, etc.). May add anti-anxiety earlier if very symptomatic.

Non-responsive
Drop ≤ 1 point or increase in score
Consider starting anti-depressant or anti-anxiety (SSRI or SNRI) if receiving therapy alone or increase dose. Review psychological counseling options and preferences.
Consider switching med (i.e., change SSRI to SNRI) or augmenting with another anti-depressant (Wellbutrin if currently on an SSRI or possibly Remeron if on SNRI). Consider informal or formal psychiatric consultation (ECT an option for depression in some cases).
Consider switching med (i.e., change SSRI to SNRI) or augmenting with anti-anxiety (i.e., Buspar, Hydroxyzine, etc.). Consider informal or formal psychiatric consultation.

*Adapted from the HealthTeamWorks and APA Depression Guideline to assist primary care providers in diagnosis and treatment of depression. It is not intended to replace a clinician’s judgment or establish a protocol for all patients.

Therapy Topics Completed
☐ Getting Going
☐ Healthy Eating
☐ Healthy Relationships
☐ Improve Sleep Patterns
☐ Life Changes/Grief & Loss
☐ Manage Stress Better
☐ Mind Tricks for Pain
☐ Overcoming Illness
☐ Physical Activity
☐ Positive Thinking
☐ Problem-Solving
☐ Worrying Less
☐ Other:

Program Status
☐ Active ☐ Disqualified due to:
☐ Unable to Contact ☐ Drop Out

Pan 5-26B (5/15) Page 1 of 1
Behavioral Health Clinician Signature __________________________ Date (mm/dd/yy) ___________ Time 00:00 Phone #: __________________________
## Point Improvement (95% CI) in PHQ-9 Score from Baseline

<table>
<thead>
<tr>
<th>Time</th>
<th>TCDA</th>
<th>RWJ Intervention</th>
<th>RWJ Control</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Week</td>
<td>6.05 (4.85, 7.26)</td>
<td>2.11 (1.23, 3)</td>
<td>1.71 (0.84, 2.59)</td>
<td>&lt;0.001 &lt;0.001</td>
</tr>
<tr>
<td>12 Week</td>
<td>7.26 (5.75, 8.76)</td>
<td>3.31 (2.33, 4.29)</td>
<td>2.13 (1.16, 3.1)</td>
<td>&lt;0.001 &lt;0.001</td>
</tr>
<tr>
<td>24 Week</td>
<td>6.52 (4.51, 8.53)</td>
<td>4.07 (3.03, 5.1)</td>
<td>3.33 (2.3, 4.36)</td>
<td>0.036 0.006</td>
</tr>
</tbody>
</table>
## TCDA Impact on Utilization

<table>
<thead>
<tr>
<th>Measure</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(m= 219)</td>
<td>(m=40)</td>
</tr>
<tr>
<td># of Hospitalizations</td>
<td>B) 575/1000/year</td>
<td>275/1000/year</td>
</tr>
<tr>
<td></td>
<td>A) 342/1000/year</td>
<td>500/1000/year</td>
</tr>
<tr>
<td># of ED visits</td>
<td>B) 680/1000/year</td>
<td>1025/1000/year</td>
</tr>
<tr>
<td></td>
<td>A) 656/1000/year</td>
<td>1100/1000/year</td>
</tr>
<tr>
<td># of PCP visits</td>
<td>B) 6.03/year</td>
<td>5.15/year</td>
</tr>
<tr>
<td></td>
<td>A) 5.67/year</td>
<td>4.31/year</td>
</tr>
</tbody>
</table>
TCDA: Combining Telephonic Calls with Technology

• Automated between visit outreach
  ▪ Complementary educational videos
  ▪ Homework reporting
  ▪ Symptom tracking
  ▪ Motivational messaging
  ▪ Patient stories

• Automated Post Program outreach
  ▪ PHQ9, GAD7 with responses based on results
  ▪ Motivational messaging
  ▪ Helpful tips

• Access to myStrength (a behavioral health website)
IMPROVE YOUR HEALTH

1) IF YOU HAVE FILLED THIS OUT BEFORE:
   □ I would like to update my health goal (select below)
   □ I am still working on my previous goal (select below)

2) Please check (☑) ONE health goal you might want to work on:

   - Taking my medication
   - Dealing with pain
   - Eating Healthy
   - Reducing alcohol or drug abuse
   - Quitting/reducing smoking
   - Dealing with depression
   - Being more active
   - Reducing Stress/Anxiety

   □ My Health goal is not listed, I would like to work on:

3) Circle the letter for the sentence that best describes you:
   A) I have not started and do not intend to start working on this health goal in the next six months
   B) I have not started, but I intend to start working on this health goal in the next 30 days
   C) I have a plan or I am ready to start working on this health goal
   D) I have recently started working on this health goal

4) Please check how we can help you:
   □ I am not ready to work on this goal right now
   □ I would like a handout
   □ I would like to work with a behavior change expert
     □ In the clinic  □ On the telephone

STOP Thank you for filling out this form  STOP
The Free Health Behavior Improvement Program
A program designed specifically for Denver Health patients

How It Works:

A. Choose A Health Behavior
- Reduce Stress, Depression or Anxiety
- Lose Weight
- Quit Smoking
- Reduce Alcohol or Street Drug Use

B. Choose How To Participate
- In-Clinic
- Telephonic
- Online

C. Complete Tasks
- Brief Health Surveys
- View Online Articles, Video and Audio

D. Earn Entries Into Prize Drawings
- Target Gift Card
- Amazon Gift Card
- iPad

How Do I Participate?
<table>
<thead>
<tr>
<th>GOAL</th>
<th>PERSONAL IMPORTANCE</th>
<th>PERSONAL CONFIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing alcohol or street drug use</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1-10 Scale</td>
<td>1-10 Scale</td>
</tr>
<tr>
<td>PROGRMS</td>
<td>CONTACTS</td>
<td>MONITORING</td>
</tr>
<tr>
<td>In-Clinic</td>
<td>Email Phone</td>
<td>Yes</td>
</tr>
</tbody>
</table>
PCP Role: Tips

Provide support
• “It’s really great that you picked (patient’s goal). Is there anything you feel I can do to help you with this goal?”

Reinforce benefits
• “I agree that working on this goal will help you to (mention benefits patient selected).”
• “Are there any other ways you think you might benefit from (patient’s goal).”
• Mention other possible benefits as appropriate.

Increase confidence
• Discuss things patient feels will help him/her feel more confident
• “What might make (patient’s goals) hard for you?”
  o “How do you feel you might be able to overcome this barrier?”
  o Ask if patient would be interested in hearing your suggestions.

Closer
• “You will be getting a text message or email in the next day or two so we can get a baseline assessment of where you are now with your (patient’s goal) and then monthly brief assessment to check on your progress. Please make sure you complete these assessments so I will be able to keep up to date on how you are doing.”
• “The next time I see you let me know if there is anything else I can do to help you with (patient’s goals).”
Doe, John

GOAL
Reducing alcohol or street drug use

<table>
<thead>
<tr>
<th>Question</th>
<th>01/01/2015 (Baseline)</th>
<th>02/01/2015</th>
<th>03/01/2015</th>
<th>04/01/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>N/A</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Program Helpful</td>
<td>N/A</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Improve Behavior</td>
<td>N/A</td>
<td>-</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Importance</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Health Benefits</td>
<td>I feel better</td>
<td>I feel better</td>
<td>I feel better</td>
<td>I feel better</td>
</tr>
<tr>
<td></td>
<td>I feel better about myself</td>
<td>I feel better about myself</td>
<td>I feel better about myself</td>
<td>I feel better about myself</td>
</tr>
<tr>
<td>Confidence</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Help Areas</td>
<td>Learning ways to avoid alcohol or drug use when I am under stress</td>
<td>Learning where I can go for help</td>
<td>Learning ways to avoid alcohol or drug use when I am under stress</td>
<td>Learning where I can go for help</td>
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</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>01/01/2015 (Baseline)</th>
<th>02/01/2015</th>
<th>03/01/2015</th>
<th>04/01/2015</th>
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<tbody>
<tr>
<td>PHQ-9</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Ideal Integrated Care System

• Automated pre-visit screening via Improve Your Health
  - Depression
  - Anxiety
  - Substance abuse
  - Other behavioral risk factors

• Treatment choices guided by Shared Decision Making Tool
  - Medications
  - Therapy
    - Location
      - In clinic
      - Over the phone
    - Type of Therapy
      - Watchful waiting
        - With self management support vice DVD, printed materials etc.

• Between visit care through automated outreach

• Use of navigators to maintain patient engagement and track outcomes
Conclusion

• Program development is an iterative process

• Repeated funding from the Robert Wood Johnson Foundation and the Colorado Health Foundation have enabled us to use technology to continue to innovate and improve behavioral health outcomes at Denver Health.
Thank you!

David Brody, MD
David.Brody@dhha.org
303.602.2192
Question?

Please type your question into the Chat Box or press *6 to unmute your phone line and ask a question