Improvement Science

Culture of Learning Healthcare System

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Learning Lab L5 - Course Objectives:

• Develop the participant’s knowledge of diabetes prevention tools that can be used in clinical practice and community interventions to improve awareness, screening, and referral to treatment among at-risk individuals to improve health outcomes.

• Understand the features of Intermountain’s integrative approach for synchronizing diabetes prevention services across the clinical and community care continuum.

• Discuss how improvement science is used to drive synchronous prevention activities in clinical practice and surrounding communities with underserved populations.
WHAT NEEDS TO CHANGE?

1. Lack of evidence-based care in daily practice
2. Unsustainable cost increases
3. Misaligned financial incentives
4. Ineffective patient engagement
   • Unhealthy behaviors
   • Uninformed participation in critical decisions
   • Suboptimal management of chronic illness
1. Create a common vision for population health
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2. Provide evidence-based care
SOLUTIONS

1. Create a common vision for population health
2. Provide evidence-based care
3. Create transparency with data, measurement, and evaluation
SOLUTIONS

1. Create a common vision for population health
2. Provide evidence-based care
Provide Evidence-Based Care

- Leadership creates an infrastructure (data systems and Clinical Programs) to measure and manage performance
- Clinical Programs create Care Process Models, educate providers, and track outcomes
  - Preventive care management
  - Acute disease management
  - Chronic disease management
Intermountain Healthcare: The journey to prevention

Evidence-based program
Data driven implementation
Published outcomes
Value-focused delivery
Ready for scale
National partnerships
SOLUTIONS

1. Create a common vision for population health
2. Provide evidence-based care
3. Create transparency with data, measurement, and evaluation
Build a single source for complex data analysis and reporting

Integrated, system-wide reporting and analytics

Data from Community Partners

Financial Data

Clinical Data

EDW

Claims & Eligibility
The flow of information = data driven improvement

Team Feedback: Primary Care and Prediabetes dashboard

Registry – 2006 to present

Prediabetes registry n = 102,137

Can cross walk to all other disease-based registries (T2DM, HBP, CKD, CHD, Depression)

49,005 currently active (lab value in 3 months)

Feeds advisories/alerts in the EMR and Reporting
## EMR Advisories/Alerts:
### Screening & Referral to Treatment

<table>
<thead>
<tr>
<th>Advisory Description</th>
<th>Priority</th>
<th>Due Date</th>
<th>Action</th>
<th>Memo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive Care: Influenza Vaccine. Give Yearly To Patients 9 Years And Older</td>
<td>High</td>
<td>06/31/2016</td>
<td>Completed Elsewhere</td>
<td></td>
</tr>
<tr>
<td>Preventive Care: Colon Cancer Screen. Screen For Colon Cancer In Patients Over Age 50</td>
<td>Medium</td>
<td>03/01/2017</td>
<td>Postponed</td>
<td></td>
</tr>
<tr>
<td>Preventive Care: Depression Screening. Recommended For All Adults</td>
<td>Medium</td>
<td>02/01/2017</td>
<td>Postponed</td>
<td>Q 1 year</td>
</tr>
<tr>
<td>Preventive Care: Activity Level. Minutes And Frequency Of Physical Activity.</td>
<td>Medium</td>
<td>03/01/2017</td>
<td>Postponed</td>
<td>Q 1 year</td>
</tr>
<tr>
<td>Preventive Care: BMI &gt;= 30. Counsel Patient About Risks Of Obesity.</td>
<td>Medium</td>
<td>02/01/2017</td>
<td>Postponed</td>
<td></td>
</tr>
<tr>
<td>Preventive Care: Telep Vaccines. Give To All Adult Patients Once</td>
<td>Medium</td>
<td>03/01/2017</td>
<td>Postponed</td>
<td>Q 1 year</td>
</tr>
<tr>
<td>Preventive Care: Mammogram. Recommended Yearly For Women Between Ages 50 - 70</td>
<td>Medium</td>
<td>02/01/2017</td>
<td>Postponed</td>
<td>Variable</td>
</tr>
<tr>
<td>Preventive Care: Diabetes Screen. Check HgbA1c Or FBS / BMP / CMB Yearly In Patients With Impaired Glucose Tolerance. Repeat with AIC as required</td>
<td>High</td>
<td>02/01/2017</td>
<td>Postponed</td>
<td>Q 1 years</td>
</tr>
</tbody>
</table>

Note: All due dates are in February 2027.
How *should* we define quality?

Among patients converting to T2DM, what proportion converted within 3 years of prediabetes identification.

% of Patients Who Converted from Pre-diabetes to Diabetes in < 3 yrs

- July 2014: 52.04%
- January 2015: 57.00%
- January 2016: 57.50%

Month: Jan, 2015
Rate: 57.50% (92/160)

TRANSPARENCY
Community Pathway: Diabetes Prevention

Number of participants at health screening events (HSE)

Number screened for prediabetes risk

Number screened negative for prediabetes risk

Number screened positive for prediabetes risk (CDC Risk Score ≥ 5) or (+) GDM and provided resources for further evaluation & treatment

Number participate in Prediabetes 101

Number participate in community-based DPP**

Number who seek PCP follow up and care

Number who do not seek additional treatment

Number achieved self-reported 5-7% weight loss

Non-participants

Prediabetes 101

Community-based DPP

PCP follow-up and care

Data collected at HSE

Data collected from a random sample of risk screen (+) participants @ 6 months following HSE

** Blood glucose test recommended prior to enrollment; and required for program scholarship

In some locations, HSE participants who screen (+) for a risk of prediabetes will be directly provided DPP resources
Robust Research & Evaluation Agenda

DPP Sustainability: Utilizing the RE-AIM Framework

Feasibility of a Digital Diabetes Prevention Program

Listening to the Field- Customer inspired smart growth
Feasibility of a Digital Solution

Program Engagement

- On average, Intermountain patients are engaging in the program 30 times / week

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log-ins</td>
<td>10.0</td>
<td>80%</td>
</tr>
<tr>
<td>Completing Weekly Lessons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weigh Ins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food / Activity Tracking</td>
<td>9.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Discussion Posts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Messages with Coach</td>
<td></td>
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</tbody>
</table>
Feasibility of a Digital DPP Solution

Provisional Weight Loss

Data as of 1/19/2017

The red shaded area represents the expected performance (95% confidence interval) of participants when compared to a matched cohort group (based on age, gender, starting BMI, etc.).

The blue line represents the average weight loss of program Starters that have weighed in during that current week.
Listening to the Field - Customer Inspired Growth

VIEW GRANT OPPORTUNITY

CDC-RFA-DP17-1705
Scaling the National Diabetes Prevention Program in Underserved Areas
Department of Health and Human Services
Centers for Disease Control - NCCDPHP

Online Communities
Iterative collaboration

Live Collaboration
High-intensity exploration and ideation events

Selecting the right mix of tools to solve for your needs

<table>
<thead>
<tr>
<th>Technology Usage</th>
<th>Audience Mindset</th>
<th>Intense Exploratory Work</th>
<th>Website Design and User Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey</td>
<td>Diary</td>
<td>Discussion</td>
<td>Discussion</td>
</tr>
<tr>
<td>Heat mapping</td>
<td>Video gallery</td>
<td>Diary</td>
<td>Survey</td>
</tr>
<tr>
<td>Mobile ethnography</td>
<td>Web discovery</td>
<td>Photo gallery</td>
<td>Remote eye tracking</td>
</tr>
<tr>
<td>Heat mapping</td>
<td>Prediction markets</td>
<td>Mobile mapping</td>
<td>Mobile mapping</td>
</tr>
<tr>
<td>Mobile survey</td>
<td>Build your own</td>
<td>Interactive collaging</td>
<td>Heat mapping</td>
</tr>
<tr>
<td>Mobile safari</td>
<td>Mind mapping</td>
<td>Card sorting</td>
<td>Mobile safari</td>
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</tbody>
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Expression analysis