SBIRT – Now More Than Ever!

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Former Tenured Professor of Family Medicine
University of Wisconsin (1990-2017)

Former Senior Medical Director for Population Health Management
ConcertoHealth (2017-2020)

Board Member, Community Health Worker Coalition for Migrants and Refugees
(www.chwcoalition.org)
Learning Goal

You will be equipped and motivated to advocate that general healthcare leaders implement SBIRT*

* With two twists:

1. An expanded SBIRT model – Behavioral Screening and Intervention (BSI)
2. Delivered by newly hired Health Coaches
Outline

- The quadruple aim
- The scope of Behavioral Health
- The problem
- What works - Behavioral Screening and Intervention
- What works - Collaborative Care
- What works - Motivational interviewing
- What works - Pharmacotherapy for AUD and OUD
- An integrated health coaching program for primary care
- An expanded health coaching program
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Now More Than Ever!

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https://go.cms.gov/2Yyy0sX
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Behavioral Health

Mental Health & Substance Use Disorders
- Anxiety & Depression
- PTSD
- SPMI - Bipolar Dz, Psychosis
- Alcohol/Drug Disorders

Unhealthy and Risky Behaviors
- Smoking
- Poor diet
- Physical inactivity
- Unhealthy substance use

Non-Adherence to Treatment Regimens
- CAD, CKD, COPD
- DM, HF, HTN
- Medication
- Diet
- Physical activity
- Healthcare services
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Behavioral issues → worse outcomes + higher costs

Anxiety Disorders

- For patients with COPD, anxiety is associated with 40% more exacerbations

- Meta-analysis of 20 studies: anxiety is associated with a
  - 26% increase in Coronary Artery Disease (CAD)
  - 43% increase in death from CAD

- For patients with heart failure, anxiety is associated with more
  - medication non-adherence
  - ED visits
  - hospitalizations
  - deaths

Eisner, Thorax, 2010; El-Gabalawy, General Hospital Psychiatry, 2011; Roest, J Amer Coll Card, 2010; DeJong, Heart Lung, 2011
Behavioral issues → worse outcomes + higher costs

**Depression**

- ≥69-year-old men living at home:
  - ↑ 22% in hospital admissions, ↑ 65% in hospital days
- 160,000 admissions for CHF, MI & pneumonia in 11 healthcare systems:
  - ↑ 40% in 30-day readmissions
- 1,418 Boston hospital inpatients

<table>
<thead>
<tr>
<th>Depression symptoms</th>
<th>None (63%)</th>
<th>Mild (16%)</th>
<th>Mod. to severe (24%)</th>
<th>30-day readmission rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12.6%</td>
<td>19.6%</td>
<td>21.1%</td>
</tr>
</tbody>
</table>

- 64% increased risk of revision for hip replacement surgery
  (Largest risk factor of 29 conditions studied)

Prina, CMAJ, 2013; Ahmedani, Psychiatric Services, 2015; Cancino, Journal of Hospital Medicine, 2014; Bozic, Clinical Orthopedics and Related Research, 2014
Behavioral issues → worse outcomes + higher costs

Drug Use Disorder

Gryczynski, Health Affairs, 2016 from National Survey on Drug Use and Health, 2009-2013
Behavioral issues → worse outcomes + higher costs

Per 100,000 Population

Opioid-Related Hospitalizations

Opioid-Related ED Visits (non-admits)

https://www.hcup-us.ahrq.gov/faststats/
Behavioral issues → worse outcomes + higher costs

Mental health disorder treatment in the US

Behavioral issues → worse outcomes + higher costs

Of 1,358 alcohol dependent patients across the US in 2013

- 74%
- 16%
- 4%
- 6%
- Both
- Advice to cut down
- Info on treatment
- Neither

Glass, Rohnert & Brown, JGIM, 2016, with data from the 2013 National Survey on Drug Use and Health
Behavioral issues → worse outcomes + higher costs

**US Dual Eligibles**

<table>
<thead>
<tr>
<th>Condition</th>
<th>None</th>
<th>Mental Health Disorder</th>
<th>Alc/Drug Disorder</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension (HTN)</td>
<td>31%</td>
<td>52%</td>
<td>4%</td>
<td>13%</td>
</tr>
<tr>
<td>Diabetes (DM)</td>
<td>32%</td>
<td>54%</td>
<td>3%</td>
<td>11%</td>
</tr>
<tr>
<td>Coronary Artery Dz (CAD)</td>
<td>26%</td>
<td>53%</td>
<td>4%</td>
<td>17%</td>
</tr>
<tr>
<td>Heart Failure (HF)</td>
<td>30%</td>
<td>48%</td>
<td>6%</td>
<td>16%</td>
</tr>
<tr>
<td>COPD/Asthma</td>
<td>24%</td>
<td>51%</td>
<td>5%</td>
<td>21%</td>
</tr>
</tbody>
</table>

**Hospitalizations Per Patient Per Year**

- HTN: 0.34
- DM: 0.58
- CAD: 0.68
- HF: 0.92
- COPD: 1.39

3 to 6 x hospitalizations

**Total Cost of Care Per Patient Per Year**

- HTN: $0K
- DM: $10K
- CAD: $15K
- HF: $20K
- COPD: $25K

2 to 4 x total cost of care

Boyd C, Faces of Medicaid Data Brief, Center for Health Care Strategies, December 2010
Behavioral issues → worse outcomes + higher costs

ConcertoHealth Dual-Eligible Patients

- 25% of all admissions are without MH/SUD
- 50% of admissions are with MH/SUD
- 75% of admissions are with MH/SUD

Triple the rate of patients without a MH/SUD
The Problem

Mental Health & Substance Use Disorders
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- Smoking
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## Behavioral issues → worse outcomes + higher costs

### Smoking

- At one hospital, prevalence is 3 times that for the general population
- 753 VA patients with CHF - 82% increase in odds for 1-year readmission
- Higher 30-day readmission rates for
  - Myocardial infarction
  - H. flu pneumonia + COPD
  - Schizophrenia
  - Hysterectomy
  - Arthroscopic meniscectomy
  - Ventral hernia repair
  - Lower extremity arterial bypass

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Behavioral issues → worse outcomes + higher costs

Smoking and surgical complications

- For 82,304 smoking vs. 82,304 non-smoking surgical pts,
  ↑ odds of many complications:
  - Pneumonia (109%)
  - MI (80%)
  - Unplanned intubation (87%)
  - Stroke (73%)
  - Cardiac arrest (57%)
  - Mechanical ventilation (53%)
  - Infections
  - (30% - 42%)
  - Unplanned intubation (87%)
  - Septic shock (55%)
  - Death (38%)

- Hip replacement
  - 3.71 x ↑ risk of deep infection
  - 3.05 x ↑ risk of aseptic prothesis loosening
  - 2.58 x ↑ risk of repeat surgery

Behavioral issues → worse outcomes + higher costs

Unhealthy Drinking

- Same number of hospitalizations as for myocardial infarctions
- Inner city hospital: 20% of ICU admissions - higher rate of uninsured
- Among pneumonia patients, higher charges, more ICU admissions
- 160,000 admissions for CHF, MI & pneumonia in 11 healthcare systems: ↑ 24% in 30-day readmissions
- VA patients admitted for CHF: 6-fold higher 1-year readmission rates
- Trauma center: 150% higher chance of repeat trauma admission, twice the risk of complications from pneumonia and other infections
- 9,000 VA surgeries: Complication rates increased from 5.6% to 14.0% in a dose-response manner with heavier drinking

Adams, JAMA, 1993; Marik, Alcohol and Alcoholism, 1996; Saitz, Archives of Internal Medicine, 1997; Ahmedani, Psychiatric Services, 2015; Evangelista, American Journal of Cardiology, 2000; Rivara, JAMA, 1993; Bradley, Journal of General Internal Medicine, 2011
Behavioral issues → worse outcomes + higher costs

Past-Year Prevalence - 2017 to 2018

### Alcohol Use Disorder

<table>
<thead>
<tr>
<th>Region</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>5.7%</td>
<td>6.4%</td>
</tr>
<tr>
<td>IL</td>
<td>5.1%</td>
<td>5.7%</td>
</tr>
<tr>
<td>IN</td>
<td>5.6%</td>
<td>5.5%</td>
</tr>
<tr>
<td>MI</td>
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<td>MN</td>
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<td>WI</td>
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</tbody>
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### Drug Use Disorder

<table>
<thead>
<tr>
<th>Region</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>2.9%</td>
<td>2.8%</td>
</tr>
<tr>
<td>IL</td>
<td>3.3%</td>
<td>3.3%</td>
</tr>
<tr>
<td>IN</td>
<td>2.7%</td>
<td>2.7%</td>
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<tr>
<td>MI</td>
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<td>MN</td>
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</tbody>
</table>

### Substance (Alcohol or Drug) Use Disorder

<table>
<thead>
<tr>
<th>Region</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>7.7%</td>
<td>8.2%</td>
</tr>
<tr>
<td>IL</td>
<td>7.4%</td>
<td>7.5%</td>
</tr>
<tr>
<td>IN</td>
<td>7.2%</td>
<td>7.6%</td>
</tr>
<tr>
<td>MI</td>
<td></td>
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<td>MN</td>
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<td>WI</td>
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</table>

### Of people w/SUD, those with no tx

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<thead>
<tr>
<th>Region</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>92.7%</td>
<td>93.4%</td>
</tr>
<tr>
<td>IL</td>
<td>91.8%</td>
<td>92.2%</td>
</tr>
<tr>
<td>IN</td>
<td>93.2%</td>
<td>93.2%</td>
</tr>
<tr>
<td>MI</td>
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<td>MN</td>
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National Survey on Drug Use and Health, 2017-2018
Behavioral issues → worse outcomes + higher costs

Prevalence - 2017 to 2018

### Any Mental Illness
- **US**: 19.0%
- **IL**: 18.1%
- **IN**: 22.5%
- **MI**: 19.1%
- **MN**: 19.3%
- **OH**: 21.4%
- **WI**: 19.3%

### Serious Mental Illness
- **US**: 4.5%
- **IL**: 4.2%
- **IN**: 5.3%
- **MI**: 4.6%
- **MN**: 4.4%
- **OH**: 5.4%
- **WI**: 5.5%

### Major Depressive Episode
- **US**: 7.1%
- **IL**: 6.8%
- **IN**: 8.6%
- **MI**: 7.4%
- **MN**: 7.4%
- **OH**: 8.0%
- **WI**: 8.1%

### Serious Thoughts of Suicide
- **US**: 4.3%
- **IL**: 3.9%
- **IN**: 5.2%
- **MI**: 4.1%
- **MN**: 4.6%
- **OH**: 5.2%
- **WI**: 5.2%

National Survey on Drug Use and Health, 2017-2018
Behavioral issues → worse outcomes + higher costs

Past-Month Prevalence - 2017 to 2018

Cigarette Use

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>IL</th>
<th>IN</th>
<th>MI</th>
<th>MN</th>
<th>OH</th>
<th>WI</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>19.0%</td>
<td>18.2%</td>
<td>24.0%</td>
<td>21.1%</td>
<td>18.5%</td>
<td>23.2%</td>
<td>20.2%</td>
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Binge Alcohol Use (≥5 M / ≥4 F)

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<th>MI</th>
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</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>26.5%</td>
<td>30.2%</td>
<td>26.5%</td>
<td>28.2%</td>
<td>28.3%</td>
<td>26.9%</td>
<td>32.3%</td>
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Marijuana Use

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<tbody>
<tr>
<td>0%</td>
<td>10.2%</td>
<td>9.9%</td>
<td>10.6%</td>
<td>13.1%</td>
<td>9.8%</td>
<td>8.6%</td>
<td>9.2%</td>
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Other Drug Use

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<td>3.4%</td>
<td>3.3%</td>
<td>3.9%</td>
<td>3.7%</td>
<td>3.5%</td>
<td>3.2%</td>
<td>3.6%</td>
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National Survey on Drug Use and Health, 2017-2018
Behavioral issues → worse outcomes + higher costs

Past-Year Prevalence - 2017 to 2018

<table>
<thead>
<tr>
<th>Pain Reliever Misuse</th>
<th>Heroin Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>3.9%</td>
</tr>
<tr>
<td>IL</td>
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<th>Methamphetamine Use</th>
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<tr>
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Behavioral issues → worse outcomes + higher costs

Medication Non-Adherence

- For blue-collar minority pts, non-adherence to HTN medication is the greatest risk factor for heart failure
- Elderly have non-adherence rates of 40% to 86%, resulting in 4% to 11% of hospital admissions and 8% of ED visits
- 80% of elderly Medicaid patients have <80% Proportion of Days Covered (PDC) for HTN meds over 1 year
- Of 24,000 Indiana pts with T2DM, 91% had PDC < 80% → 20% increased risk for hospitalization

Adams, JAMA, 1993; Marik, Alcohol and Alcoholism, 1996; Saitz, Archives of Internal Medicine, 1997; Ahmedani, Psychiatric Services, 2015; Evangelista, American Journal of Cardiology, 2000; Rivara, JAMA, 1993; Bradley, Journal of General Internal Medicine, 2011
Behavioral issues → worse outcomes + higher costs

Chronic Disease Treatment in the US

Patients with Diagnosed Hypertension

- 48% uncontrolled

Patients with Diagnosed Type 2 Diabetes

- 52% uncontrolled

Patients with Diagnosed Hyperlipidemia

- 67% uncontrolled

Less control in elderly, minority, and low-income patients

Mozaffarian, Circulation, 2013; Ali, NEJM, 2013; http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6004a5.htm
Behavioral issues → worse outcomes + higher costs

Impacts of Medication Non-Adherence in the US

- Preventable Deaths: 125,000
- Cost of Avoidable Hospitalizations: $100B
- Other Avoidable Costs: $190B

We need better …

- Recognition and treatment for mental health & substance use disorders
- Recognition and intervention for unhealthy and risky behaviors
- Efforts to boost adherence to chronic disease treatment regimens
We need better …

Recognition and treatment for mental health & substance use disorders

Recognition and intervention for unhealthy and risky behaviors

Efforts to boost adherence to chronic disease treatment regimens

A SINGLE INTEGRATED SOLUTION
... now more than ever!
Mental health outcomes in times of economic recession: a systematic literature review

Diana Frasquilho¹, Margarida Gaspar Matos², Ferdinand Salonna³*, Diogo Guerreiro⁴, Cláudia C. Storti⁵, Tânia Gaspar⁶ and José M. Caldas-de-Almeida⁷
KFF Health Tracking Polls

Do you feel that worry or stress related to coronavirus has had a negative impact on your mental health?

March 11 to 15
- No: 67%
- Minor: 18%
- Major: 14%

March 25 to 30
- No: 54%
- Minor: 26%
- Major: 19%

KFF Health Tracking Poll - March 25 to 30

- 72% - My life has been disrupted “a lot” (45%) or “some” (27%)
- 59% - Worry about value of investments
- 57% - Worry that need to keep working increases chances of catching the coronavirus
- 53% - Worry about family members getting sick
- 53% - Worry about affording testing or treatment for the coronavirus
- 52% - Worry about losing their job or getting laid off
- 45% - Worry about loss of income due to workplace closure or reduced hours

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For alcohol and drugs: Screening, Brief Intervention, and Referral to Treatment - SBIRT

For all behavioral issues: Behavioral Screening and Intervention (BSI)

Screening:
- Low risk
  - Reassurance
- Intermediate risk
  - Intervention
  - Needs more help
- High risk
  - Referral

Assessment:
- Identification
  - Earlier
  - More accurate

Intervention:
- Avert complications
- Prevent progression
- Avoid need for costlier treatment

Follow-up and Support:
- Referral
- Brief intervention
- Reassurance and reinforcement
- Referral to treatment
WHO?

Train **current staff**

Health Coach

- Alcohol/Drug Counselor
- Dietician
- Nurse
- Pharmacist
- Physical Therapist
- Psychotherapist
- Smoking Expert
BSI Works for Smoking

One-Year Quit Rates

- No Screening
  - 3%
- Screening
  - 6%
- Screening plus optimal intervention
  - 28%

Optimal intervention

- Motivational interviewing to elicit commitment to quit
- Medications to reduce urges and cravings
- >8 one-on-one support sessions

Fiore, AHRQ Smoking Cessation Guideline, 2008; Lai, Cochrane Database, 2010
BSI Works for Unhealthy Drinking and Drug Use

- ED visits ↓ 20%
- Injuries ↓ 33%
- Hospitalizations ↓ 37%
- Arrests ↓ 46%
- Crashes ↓ 50%

BSI also reduces days of drug use per month by 30%

Fleming, JAMA, 1997; Gelberg, Addiction 2015
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Collaborative Care - A Team Approach to MHDs

Primary care
- Diagnosis
- Medications
- Support

Counselor
- Psychotherapy

Psychiatrist
- Consultation on diagnosis and treatment
- Pharmacotherapy

Health Coach
- First responder for patients with positive screens
- Assist with accurate diagnosis
- Guard against suicide
- Provide feedback and education
- Instill optimism for treatment
- Assist with referrals
- Deliver behavioral activation
- Promote engagement in treatment
- Track progress with monthly PHQ-9s and GAD-7s, and alert others to lack of progress
Collaborative Care Includes Behavioral Activation

- Describe optimal self-management

- Ask patients if they’d like to commit to changing behaviors
  - What is their current pattern of behaviors?
  - What changes do they believe would help most?
  - What is their concrete plan for change?

- At follow-up
  - What changes did they attempt?
  - What changes were they able to make?
  - What’s been helpful?
  - What’s not been helpful?
  - How would they like to modify their plan?

Thota, American Journal of Preventive Medicine, 2012
BSI & Collaborative Care are Effective

- Without screening, 30% to 50% of depressed patients are missed
- 69 RCTs: 75% higher odds of remission at 6 and 12 months with Collaborative Care
- One-year results of Collaborative Care for depression:
  
  - Effective for several other mental health disorders

\[ \begin{align*}
\text{Treatment Response at One Year} & \quad (50\% \text{ reduction in PHQ-9 scores}) \\
\text{Usual care} & \quad 34\% \\
+ \text{Collab Care} & \quad 70\% \\
\end{align*} \]

\[ \begin{align*}
\text{Complete Remission at One Year} & \quad (\text{PHQ-9 Score of } \leq 4) \\
\text{Usual care} & \quad 30\% \\
+ \text{Collab Care} & \quad 54\% \\
\end{align*} \]

BSI Improves Chronic Disease Outcomes

- Smoking cessation
  - For HF: As beneficial as adding an ACE Inhibitor
  - For COPD: Slows progression, prevents admissions, prolongs life

- Alcohol intervention
  - For HTN: Reduces BP by 3 points

- Collaborative care for depression
  - For diabetes: Reduces HbA1c by .56

Outline

• The quadruple aim
• The scope of Behavioral Health
• The problem
• What works - Behavioral Screening and Intervention
• What works - Collaborative Care
• What works - Motivational interviewing
• What works - Pharmacotherapy for AUD and OUD
• An integrated health coaching program for primary care
• An expanded health coaching program
Motivational Interviewing

Avoids

• Dispensing unwanted advice and information
• Using scare tactics
• Twisting arms
• Shaming
Motivational Interviewing

Engages patients in

- Learning about risks and consequences that they find important
- Weighing pros and cons of behavior change in light of their goals and values
- Making and strengthening arguments for change

Miller & Rollnick, Motivational Interviewing, 3rd edition, 2013
Motivational Interviewing

Behavior Change Plans
- Limits or targets
- Triggers
- Strategies to avoid or manage triggers
- Other activities
- Environmental changes

Medications
- Social supports
  - professional and lay
- Self-rewards
- Contingency plans
- Follow-up

Over time, patients learn what works to sustain change and meet their goals

Handley, JABFP, 2006
Motivational Interviewing

• 1200+ studies, 200+ RCTs, and a meta-analysis of 199 studies show effectiveness

• MI improves outcomes for a variety of behaviors
  - Tobacco use  - Marijuana use  - Diet  - Safe sex
  - Alcohol use  - Other drug use  - Physical activity  - Gambling

• MI generalizes well across cultures

• 21 studies: MI yields the highest smoking cessation rates

• For patients with alcohol-related injuries, MI reduces drinking more and longer than information and advice

Outline

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- The problem
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- What works - Pharmacotherapy for AUD and OUD
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- An expanded health coaching program
Referral for SUDs is Not Enough

- Referral is usually ineffective - THEN WHAT???

- Effective, FDA-approved pharmacotherapy for alcohol and opioid use disorders is vastly under-prescribed
  - For alcohol: disulfiram (Antabuse®), acamprosate (Campral®), and naltrexone (Vivitrol®)
  - For opioids: naltrexone (Vivitrol®), buprenorphine (Suboxone®)

- Primary care treatment of SUDs
  - Pharmacotherapy by PCP
  - Motivational Interviewing and Behavior Change Planning by Health Coach
  - Offer on-site counseling: 1-on-1 or group
Referral for SUDs is Not Enough

- Referral is more effective when patients who are motivated to change find that their initial self-management efforts are insufficient
Outline

• The quadruple aim
• The scope of Behavioral Health
• The problem
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• An integrated health coaching program for primary care
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Wisconsin Initiative to Promote Healthy Lifestyles

Three federally funded projects:
- $14M from 2006 to 2017
- Helped 44 clinics deliver BSI
- Screened >100,000 patients
- Delivered >23,000 interventions

SAMHSA-funded project results:
- Pt satisfaction: 4.3 to 4.9 of 5 points
- Reductions in drinking:
  - Bachelor’s > Master’s health coaches
- $782 two-year net cost savings per Medicaid patient screened

Wisconsin Department of Health Services

Brown, American Journal of Managed Care, 2014; Paltzer, Journal of Behavioral Health Services and Research, 2017; Paltzer, Medical Care, 2019
# Health Coaching Topics - Well Adults

<table>
<thead>
<tr>
<th></th>
<th>Effectiveness</th>
<th>Return on Investment</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit intake</td>
<td>Modest</td>
<td>None</td>
<td>Helps frame other topics as health-related</td>
</tr>
<tr>
<td>Vegetable intake</td>
<td>Modest</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Physical activity</td>
<td>Modest</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Smoking</td>
<td>Strong</td>
<td>High over many years</td>
<td>USPSTF-A</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Strong</td>
<td>High in 1 year</td>
<td>USPSTF-B</td>
</tr>
<tr>
<td>Drugs</td>
<td>Moderate</td>
<td>Unknown</td>
<td>USPSTF-B</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Strong</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>Strong</td>
<td>High over 4 years</td>
<td>USPSTF-B</td>
</tr>
</tbody>
</table>
Integrated Health Coaching: Components for Success

- Skilled Health Coach
- Research-Based Protocols
- Health Information Technology
- Support to Optimize Workflow

- Warm, empathic
- Non-judgmental
- Expertly trained
- Monitored
- Expertly coached

- Screens
- Assessments
- Intervention protocols
- Referral resources

- Facilitates screening and assessment
- Tracks services & behavioral outcomes
- Enables robust population management

- Quality metrics
- QI framework
- Coaching on best practices
## Cost Savings of BSI

<table>
<thead>
<tr>
<th>Setting</th>
<th>Patients</th>
<th>Investment</th>
<th>Savings</th>
<th>Net Savings</th>
<th>Per Patient …</th>
<th>Years</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>Medicaid</td>
<td>$183</td>
<td>$571</td>
<td>$388</td>
<td>… who quit</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Smoking</td>
<td>Medicaid, pregnant</td>
<td>$201</td>
<td>$1,273</td>
<td>$1,072</td>
<td>… who quit</td>
<td>1+</td>
<td>5.3</td>
</tr>
<tr>
<td>Alcohol</td>
<td>PC</td>
<td>$205</td>
<td>$523</td>
<td>$318</td>
<td>… intervened on</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Alcohol &amp; Drugs</td>
<td>ED</td>
<td>Disabled Medicaid</td>
<td>$48</td>
<td>$4,392</td>
<td>$4,377</td>
<td>1</td>
<td>292</td>
</tr>
<tr>
<td>Alcohol &amp; Drugs</td>
<td>PC</td>
<td>Medicaid</td>
<td>$900</td>
<td>$4,399</td>
<td>$4,300</td>
<td>1</td>
<td>8.1</td>
</tr>
<tr>
<td>Depression</td>
<td>PC</td>
<td>$900</td>
<td>$5,200</td>
<td>$4,300</td>
<td>… intervened on</td>
<td>4</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Richard, PLOS One, 2012; McCallum, Journal of Health Care for the Poor and Underserved, 2014; Fleming, Medical Care, 2000; Estee, Medical Care, 2010; Paltzer, Journal of Behavioral Health Services and Research, 2016; Unutzer, CMS Testimony, 2011
## Cost Savings of BSI

### Year 1 Savings Assumed for Projections

<table>
<thead>
<tr>
<th>Setting</th>
<th>Patients</th>
<th>Investment</th>
<th>Savings</th>
<th>Net Savings</th>
<th>Per Patient</th>
<th>Years</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Smoking</strong></td>
<td>Medicaid</td>
<td>$183</td>
<td>$571</td>
<td>$388</td>
<td>... who quit</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Smoking</strong></td>
<td>Medicaid, pregnant</td>
<td>$201</td>
<td>$1,273</td>
<td>$1,072</td>
<td>... who quit</td>
<td>1+</td>
<td>5.3</td>
</tr>
<tr>
<td><strong>Alcohol</strong></td>
<td>PC</td>
<td>$205</td>
<td>$523</td>
<td>$318</td>
<td>... intervened on</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Alcohol &amp; Drugs</strong></td>
<td>ED</td>
<td>$15</td>
<td>$4,392</td>
<td>$4,377</td>
<td>... intervened on</td>
<td>1</td>
<td>292</td>
</tr>
<tr>
<td><strong>Alcohol &amp; Drugs</strong></td>
<td>PC</td>
<td>$48/ $96</td>
<td>$300/ $439/ $391</td>
<td>$1,300/ $878/ $782</td>
<td>... screened</td>
<td>1/2</td>
<td>8.1/8.1</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td>PC ≥60 yo</td>
<td>$900</td>
<td>$5,200</td>
<td>$4,300</td>
<td>... intervened on</td>
<td>4</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Richard, PLOS One, 2012; McCallum, Journal of Health Care for the Poor and Underserved, 2014; Fleming, Medical Care, 2000; Estee, Medical Care, 2010; Paltzer, Journal of Behavioral Health Services and Research, 2016; Unutzer, CMS Testimony, 2011
Projected One-Year Cost Savings – 1,000 Primary Care Patients

<table>
<thead>
<tr>
<th></th>
<th>Unhealthy Alc/ Drug Use</th>
<th>Depression</th>
<th>Cigarette Smoking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients screened</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Prevalence</td>
<td>20%</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td># patients intervened upon</td>
<td>200</td>
<td>200</td>
<td>180</td>
</tr>
<tr>
<td>Additional patients who quit</td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>(22% of those who receive interventions)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1 healthcare cost savings per patient</td>
<td>$300</td>
<td>$1,300</td>
<td>$571</td>
</tr>
<tr>
<td>Total 1-year healthcare savings</td>
<td>$300,000</td>
<td>$260,000</td>
<td>$22,840</td>
</tr>
<tr>
<td>Total 1-year savings for all 1,000 patients</td>
<td>$582,840</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total 1-year savings per patient screened</td>
<td></td>
<td></td>
<td>$583</td>
</tr>
</tbody>
</table>
# Projected Coach Hours for 1,000 Primary Care Patients

<table>
<thead>
<tr>
<th></th>
<th>Unhealthy Alc/Drug Use</th>
<th>Mental Health Disorder</th>
<th>Cigarette Smoking</th>
</tr>
</thead>
<tbody>
<tr>
<td># patients who receive intervention</td>
<td>200</td>
<td>200</td>
<td>180</td>
</tr>
<tr>
<td>Average # of 30-minute sessions</td>
<td>3</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Hours per patient</td>
<td>1.5</td>
<td>5.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Total hours by topic</td>
<td>300</td>
<td>1,000</td>
<td>270</td>
</tr>
<tr>
<td>Total hours for 1,000 patients</td>
<td></td>
<td></td>
<td>1,570</td>
</tr>
</tbody>
</table>

1 Health Coach serves 1,000 patients
Total Cost per Health Coach ~ $100,000
Net Cost Savings and ROI per 1,000 patients

Net one-year savings per Health Coach

$582,840 (healthcare cost savings) - $100,000 (expenses) = $482,840 (net healthcare cost savings)

ROI = $482,840 / $100,000 = 482% - nearly 5 to 1

For 12,000 adults: 12 health coaches → $5.8M net savings
Outline

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## Comprehensive Screening

**For all patients**
- Smoking
- Depression
- Anxiety
- Alcohol
- Drugs
- Chronic diseases
  - CAD
  - COPD/Asthma
  - DM
  - HF
  - HTN

**For chronically ill, frail, or low-income patients**
- **Medications**
  - Knowledge gap
  - Side effects
  - Adherence
- **Specific health issues**
  - Pain
  - Wounds/sores
  - Vision & hearing
  - Chewing & swallowing
  - Bladder & bowel
  - Cognition
  - Fall risk
- **Healthcare-related issues**
  - Difficulty making appointments
  - Transportation barriers
  - Advanced directives
- **Function**
  - ADLs, IADLs
  - Mobility
  - Caregiver burnout
- **Social determinants**
  - Housing
  - Food access
  - Finances
  - Loneliness
  - Employment
  - Education
- **Difficulty making medical decisions**
- **Phone/communication barriers**
Health Coaching for Chronic Diseases

Patient Education
- Normal anatomy and physiology
- Etiology - altered anatomy and physiology
- Symptoms
- Complications

Motivational Interviewing
- Patient goal-setting: What symptoms and complications does pt most wish to avoid?
- Patient selection of behavior changes from a menu of options
- Behavioral change planning - SMART objectives and ongoing QI
# Screening and Intervention Topics by Chronic Disease

<table>
<thead>
<tr>
<th>Behavioral Focus</th>
<th>CAD</th>
<th>COPD</th>
<th>DM</th>
<th>HF</th>
<th>HTN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking cessation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Increased physical activity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Daily rest periods with legs elevated</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Diet with less animal products</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Diet with more plant products</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Diet with less sodium/salt</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Weight loss</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Limited drinking</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Stress reduction</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Regular PCP visits</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Flu and pneumonia shots</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Regular HbA1c tests</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular dentist and eye doctor visits</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twice-a-day brushing and flossing</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily feet check for sores</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication adherence</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Rescue plan or sick plan</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Control of diabetes</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Control of blood pressure</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
# Health Coaching Interventions

<table>
<thead>
<tr>
<th>Unhealthy Behaviors and SUDs</th>
<th>Mental Health Disorders</th>
<th>Medical &amp; Social Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To promote commitment to change:</strong></td>
<td>The UW model of Collaborative Care</td>
<td>Referral to internal or external resources</td>
</tr>
<tr>
<td>Motivational Interviewing</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>To implement and sustain change:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior Change Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pharmacotherapy as appropriate</td>
<td></td>
</tr>
</tbody>
</table>
The Problem

Mental Health & Substance Use Disorders
- Anxiety & Depression
- PTSD
- SPMI - Bipolar Dz, Psychosis
- Alcohol/Drug Disorders

Unhealthy and Risky Behaviors
- Smoking
- Poor diet
- Physical inactivity
- Unhealthy substance use

Non-Adherence to Treatment Regimens
- CAD, CKD, COPD, DM, HF, HTN,
- Medication
- Diet
- Physical activity
- Healthcare services
Summary

- **Problem/Opportunity:**

- **Gaps:**
  Few healthcare settings deliver
  - SBIRT/BSI
  - MI
  - Collaborative care

- **Solution:**

- **Benefits:**

  - $
SBIRT – Now More Than Ever!

Richard L. Brown, MD, MPH - DrRichBrown@gmail.com

Former Tenured Professor of Family Medicine
University of Wisconsin (1990-2017)

Former Senior Medical Director for Population Health Management
ConcertoHealth (2017-2020)

Board Member, Community Health Worker Coalition for Migrants and Refugees
(www.chwcoalition.org)