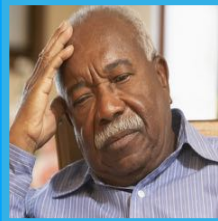


SBIRT – Now More Than Ever!



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)**





Seward Park



Chihuly Garden



Mount Rainier National Park



Wallace Falls State Park



North Cascade Mountains



Kubota Garden

Learning Goal

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

* With two twists:

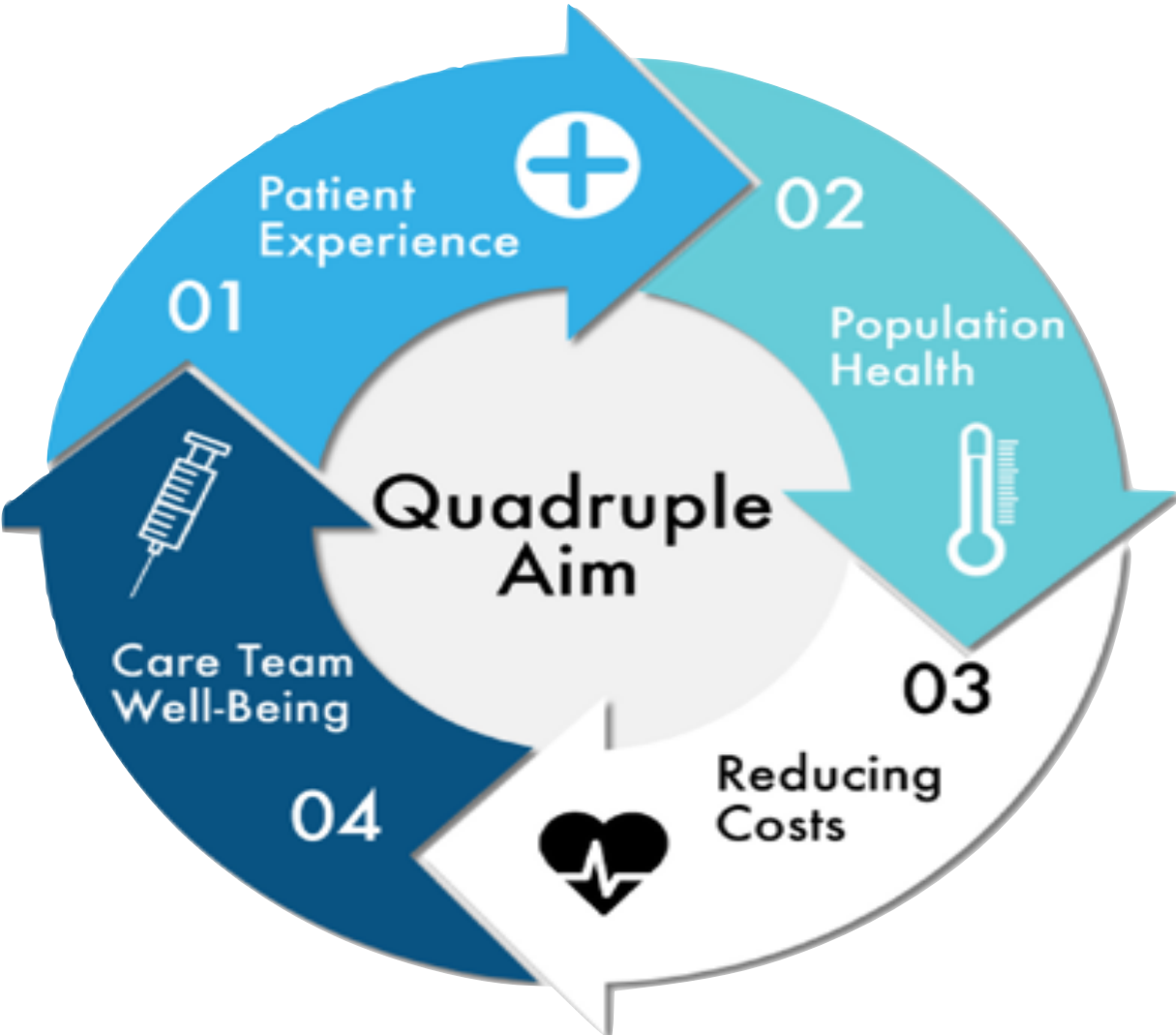
1. An expanded SBIRT model –
Behavioral Screening and Intervention (BSI)
2. Delivered by newly hired Health Coaches

Outline

- The quadruple aim
- The scope of Behavioral Health
- The problem
- What works - Behavioral Screening and Intervention
- What works - Collaborative Care
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- What works - Pharmacotherapy for AUD and OUD
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- An expanded health coaching program

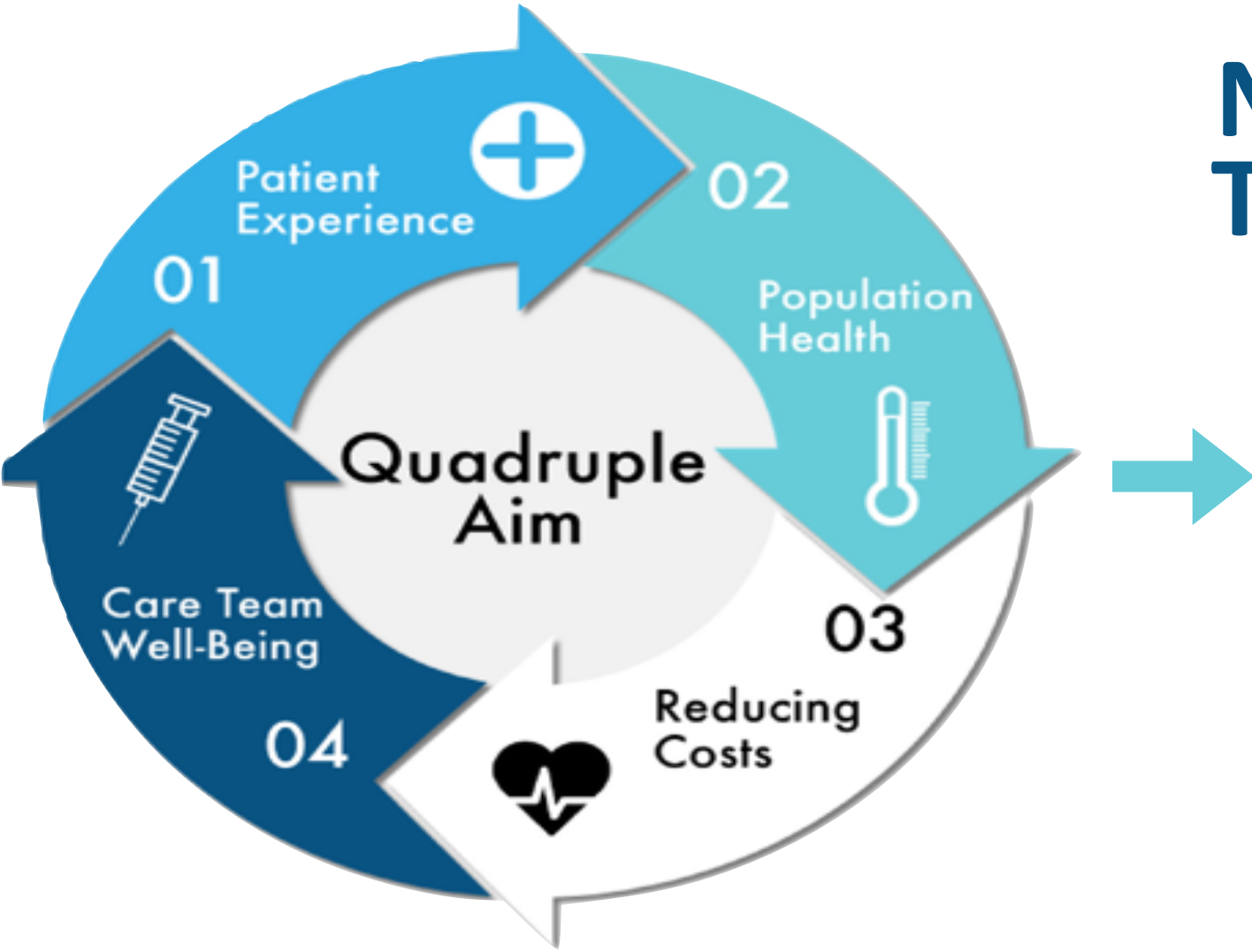
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**WHAT'S
IN IT
FOR ME?**

Now More Than Ever!



<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

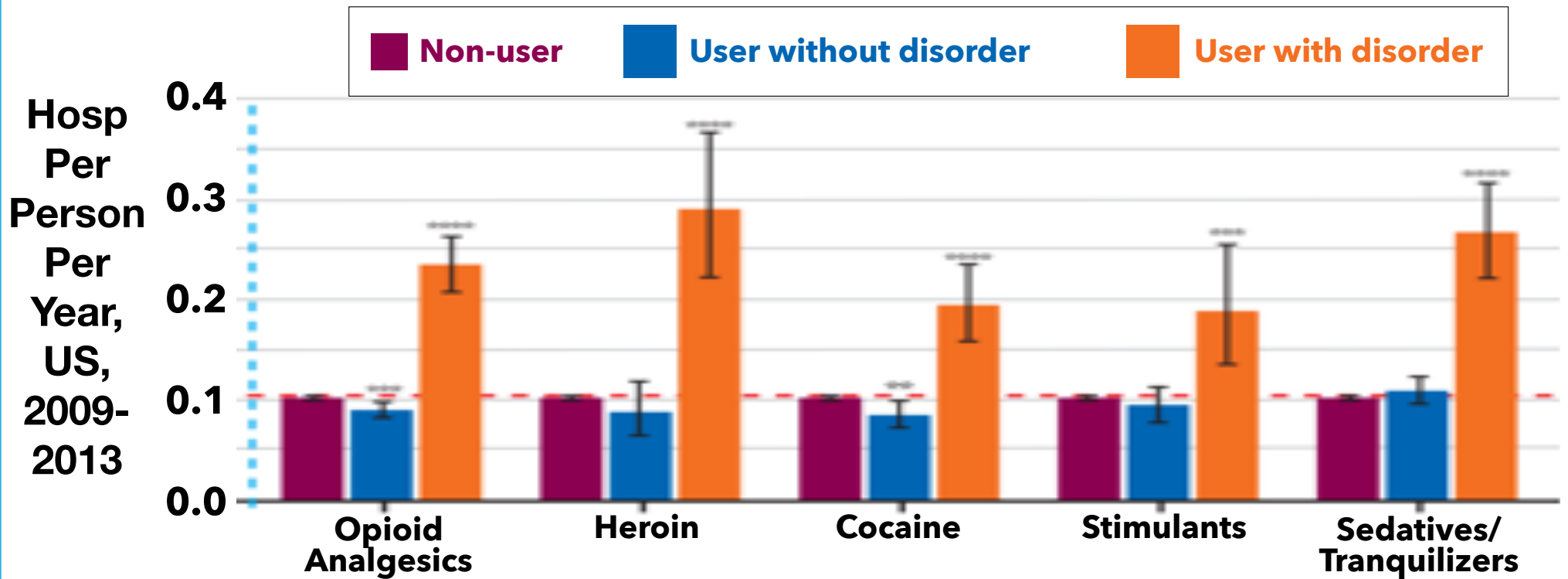
- ≥69-year-old men living at home:
↑ 22% in hospital admissions, ↑65% in hospital days
- 160,000 admissions for CHF, MI & pneumonia in 11 healthcare systems:
↑ 40% in 30-day readmissions
- 1,418 Boston hospital inpatients



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

Behavioral issues → worse outcomes + higher costs

Drug Use Disorder

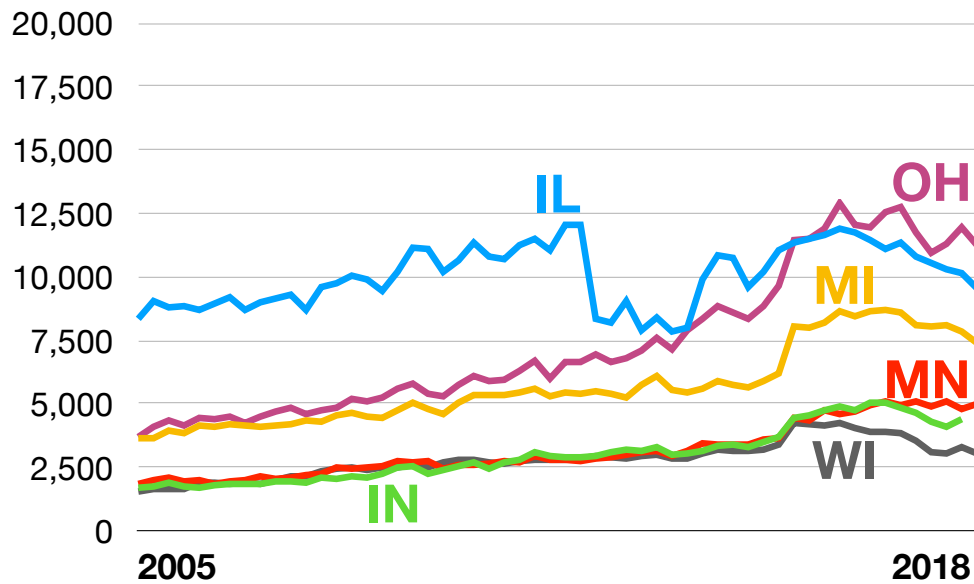


Gryczynski, Health Affairs, 2016 from National Survey on Drug Use and Health, 2009-2013

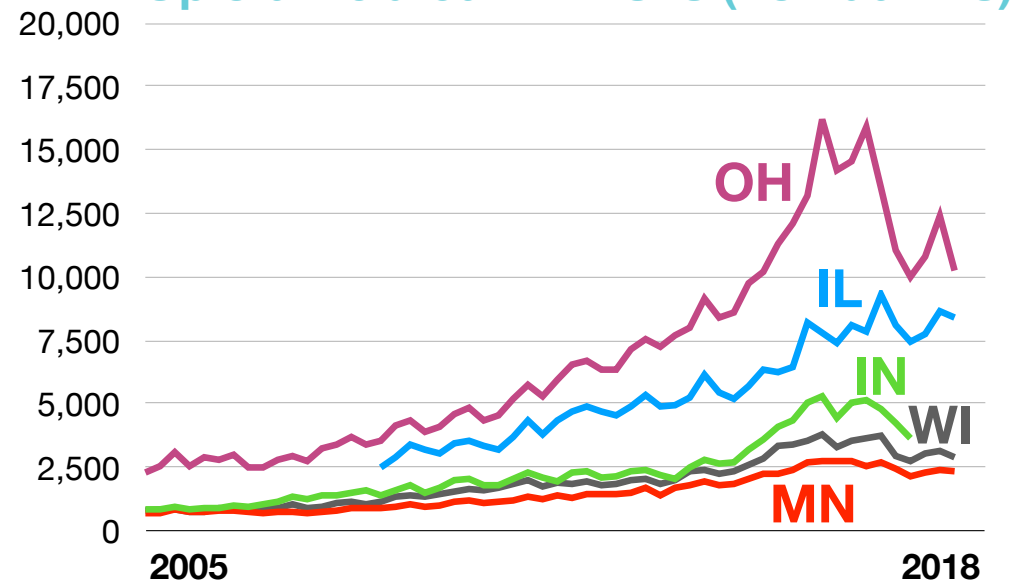
Behavioral issues → worse outcomes + higher costs

Per 100,000 Population

Opioid-Related Hospitalizations



Opioid-Related ED Visits (non-admits)

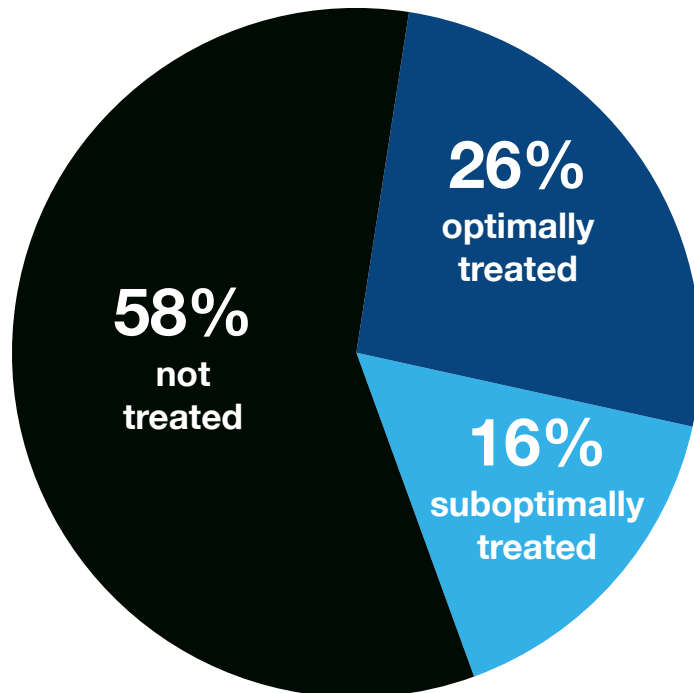


<https://www.hcup-us.ahrq.gov/faststats/>

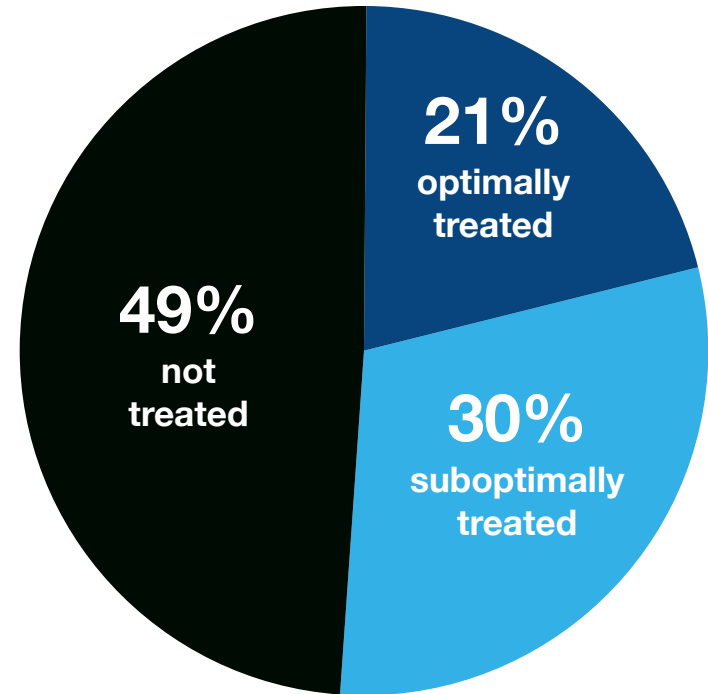
Behavioral issues → worse outcomes + higher costs

Mental health disorder treatment in the US

Anxiety



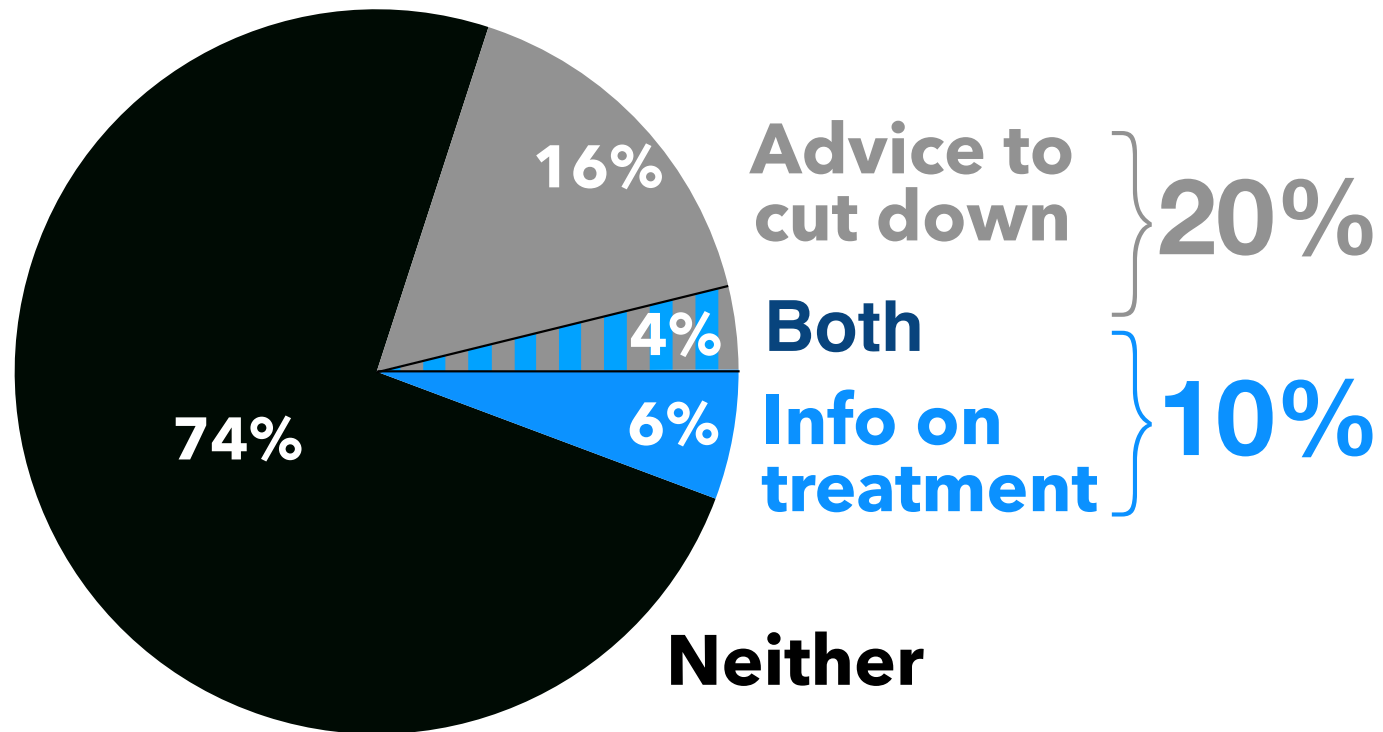
Depression



Gonzalez, Vega, Williams et al. *Annals of Psychiatry*, 2010

Behavioral issues → worse outcomes + higher costs

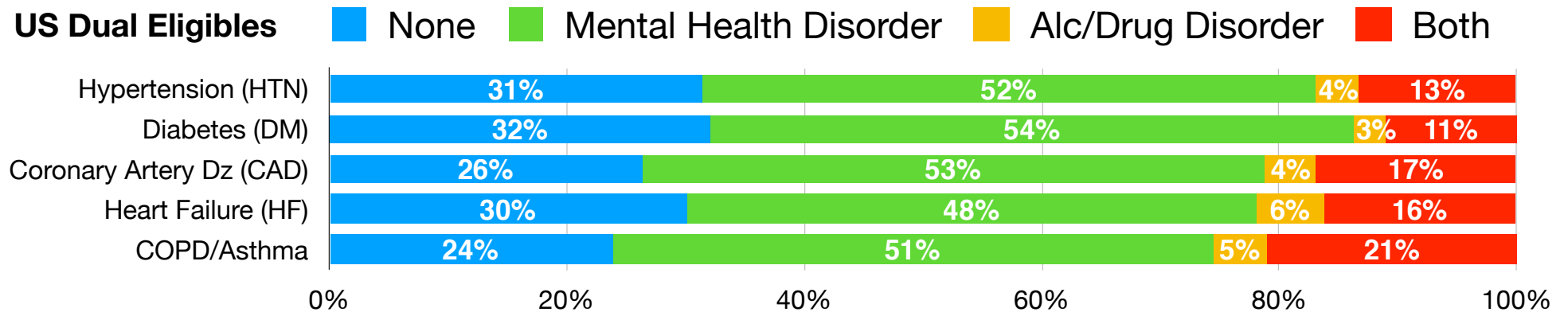
Of 1,358 alcohol dependent patients across the US in 2013



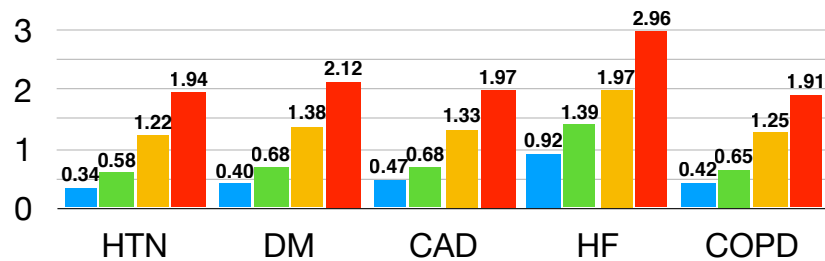
Glass, Rohnert & Brown, JGIM, 2016, with data from the 2013 National Survey on Drug Use and Health

Behavioral issues → worse outcomes + higher costs

US Dual Eligibles

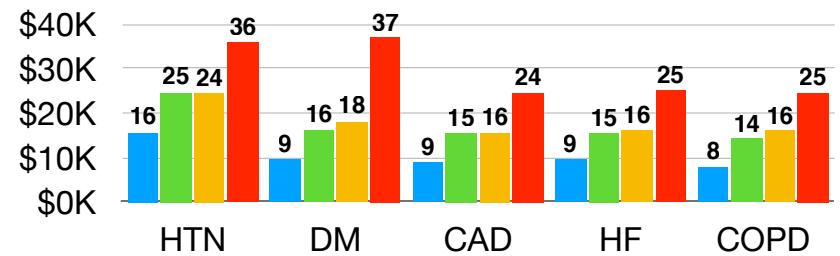


Hospitalizations Per Patient Per Year



3 to 6 x hospitalizations

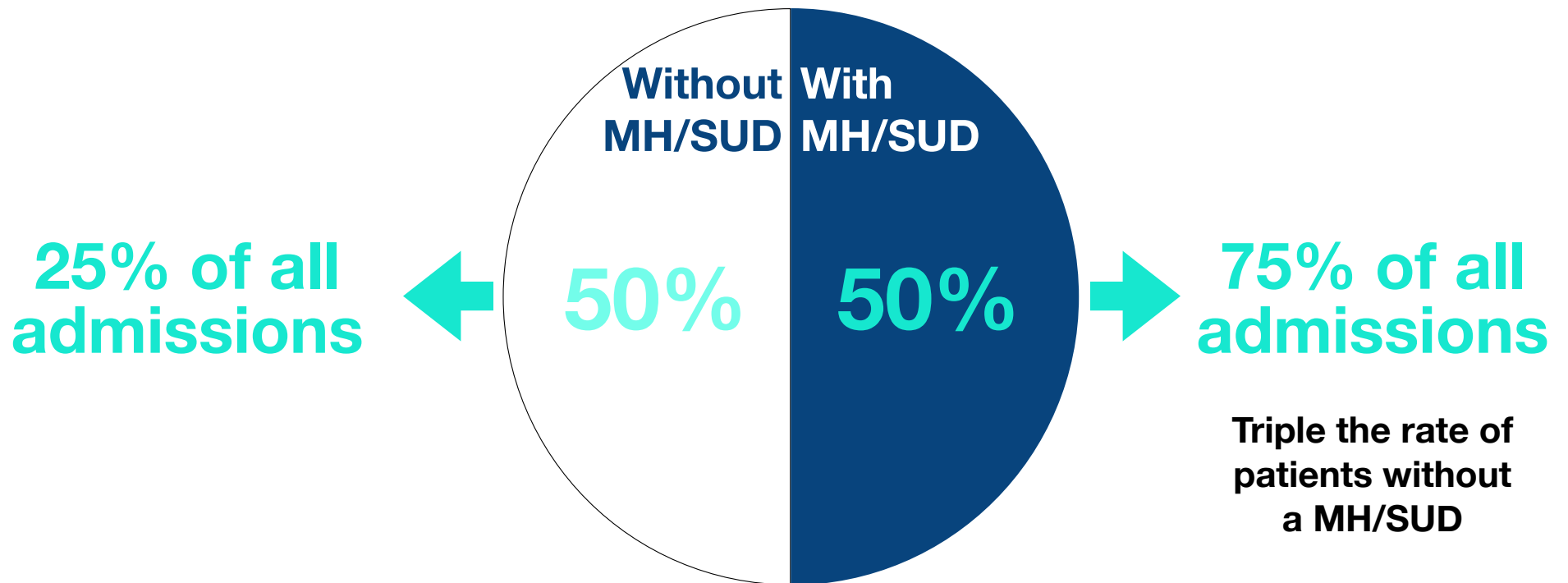
Total Cost of Care Per Patient Per Year



2 to 4 x total cost of care

Behavioral issues → worse outcomes + higher costs

ConcertoHealth Dual-Eligible Patients



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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
 - Lower extremity arterial bypass
 - Ventral hernia repair

Benowitz, American Journal of Epidemiology, 2009; Evangelista, American Journal of Cardiology, 2000; Shen, American Heart Journal, 2013; Yadavilli, European Respiratory Journal, 2012; Kobayashi, General Hospital Psychiatry, 2010; Catanzarite, Obstetrics and Gynecology, 2015; Basque, American Journal of Sports Medicine, 2015; Nelson, Hernia, 2015; McPhee, Journal of Vascular Surgery, 2013

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%)
 - Unplanned intubation (87%)
 - Cardiac arrest (57%)
 - Mechanical ventilation (53%)
 - MI (80%)
 - Stroke (73%)
 - Septic shock (55%)
 - Death (38%)
 - Infections (30% - 42%)
- Hip replacement
 - 3.71 x ↑ risk of deep infection
 - 3.05 x ↑ risk of aseptic prosthesis loosening
 - 2.58 x ↑ risk of repeat surgery

Benowitz, American Journal of Epidemiology, 2009; Evangelista, American Journal of Cardiology, 2000; Shen, American Heart Journal, 2013; Yadavilli, European Respiratory Journal, 2012; Kobayashi, General Hospital Psychiatry, 2010; Catanzarite, Obstetrics and Gynecology, 2015; Basque, American Journal of Sports Medicine, 2015; Nelson, Hernia, 2015; McPhee, Journal of Vascular Surgery, 2013

Behavioral issues → worse outcomes + higher costs

Unhealthy Drinking

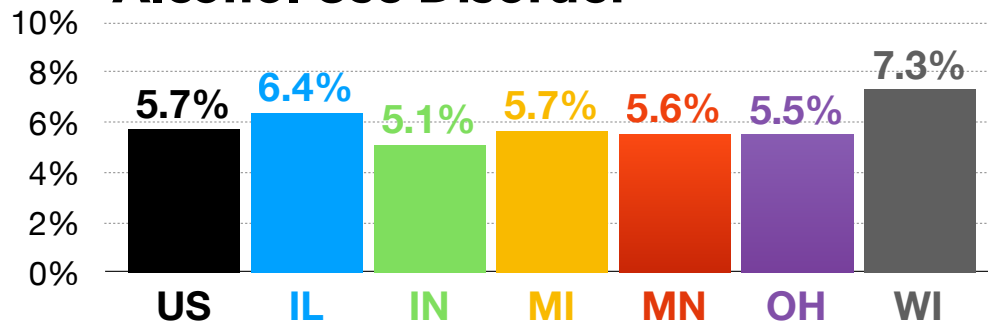
- Same number of hospitalizations as for myocardial infarctions
- Inner city hospital: 20% of ICU admissions - higher rate of uninsured
- Among pneumonia patients, higher charges, more ICU admissions
- 160,000 admissions for CHF, MI & pneumonia in 11 healthcare systems:
↑ 24% in 30-day readmissions
- 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

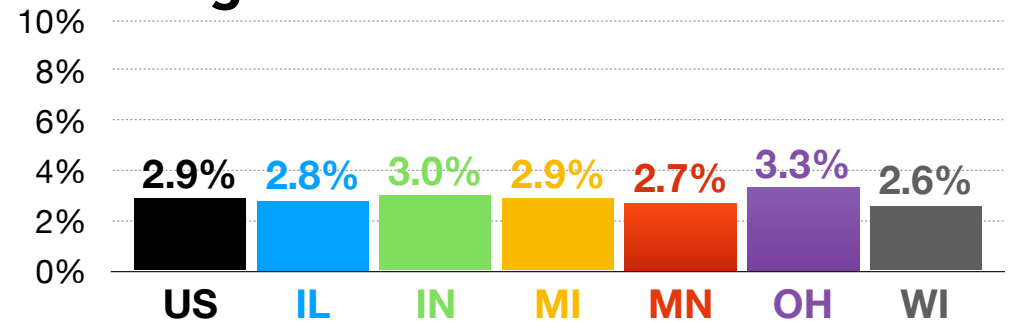
Behavioral issues → worse outcomes + higher costs

Past-Year Prevalence - 2017 to 2018

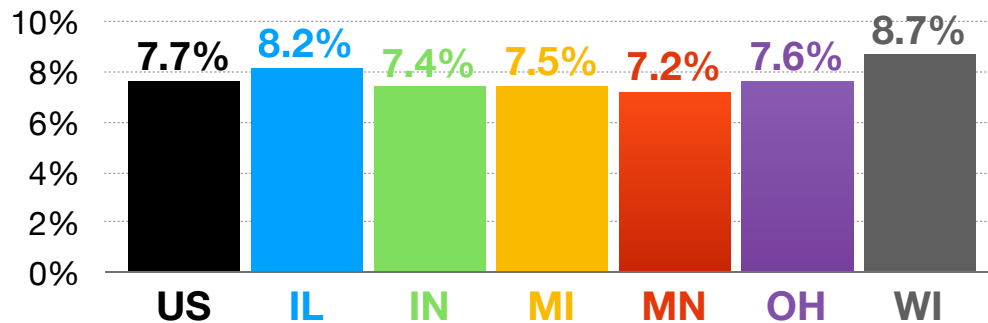
Alcohol Use Disorder



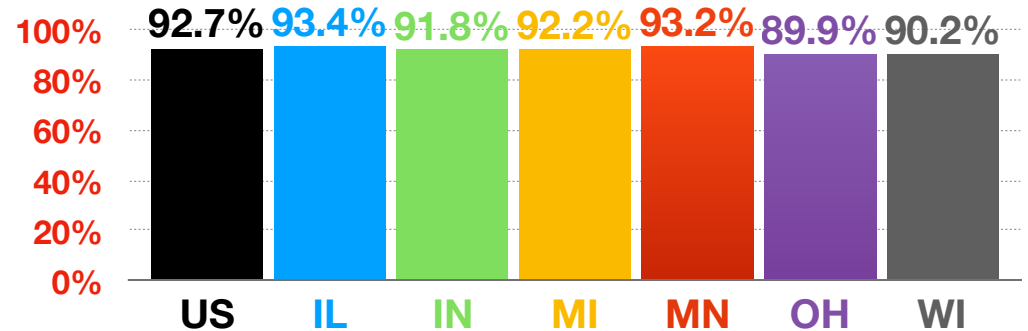
Drug Use Disorder



Substance (Alc or Drug) Use Disorder



Of people w/SUD, those with no tx

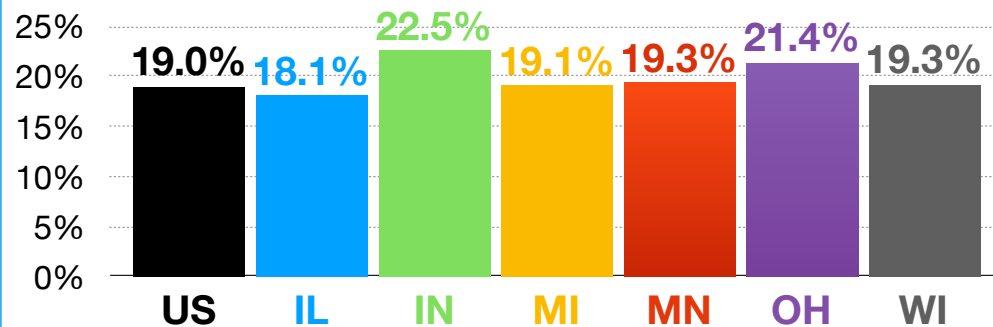


National Survey on Drug Use and Health, 2017-2018

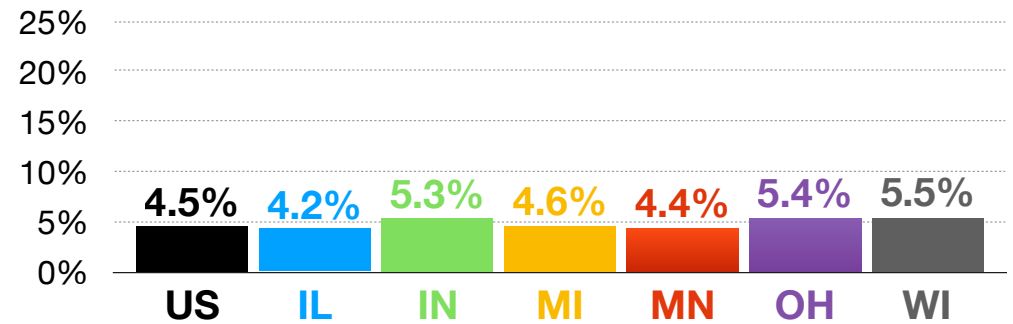
Behavioral issues → worse outcomes + higher costs

Prevalence - 2017 to 2018

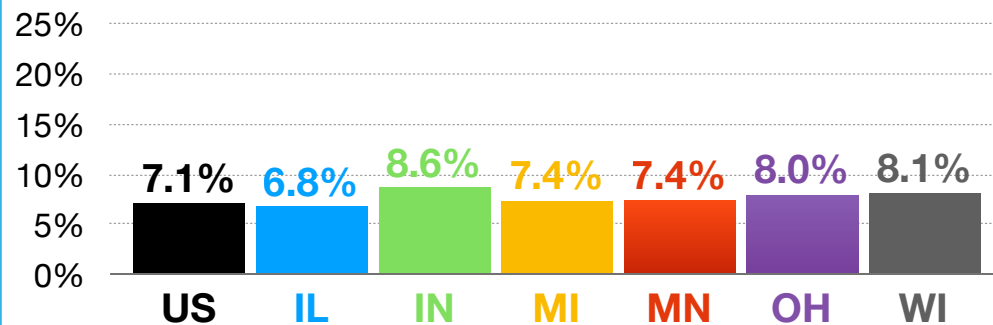
Any Mental Illness



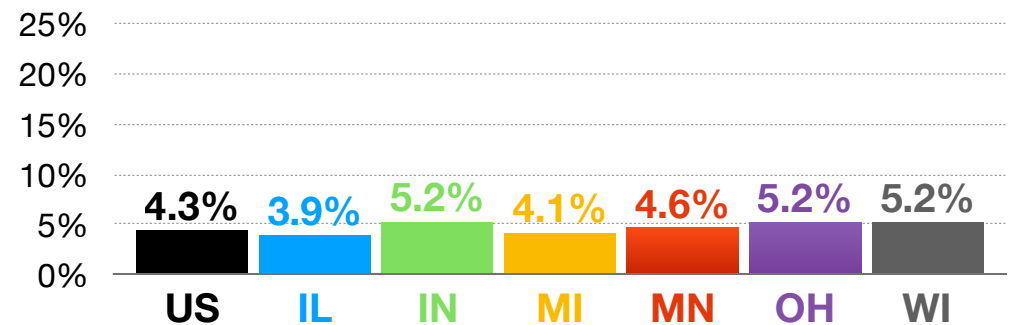
Serious Mental Illness



Major Depressive Episode



Serious Thoughts of Suicide

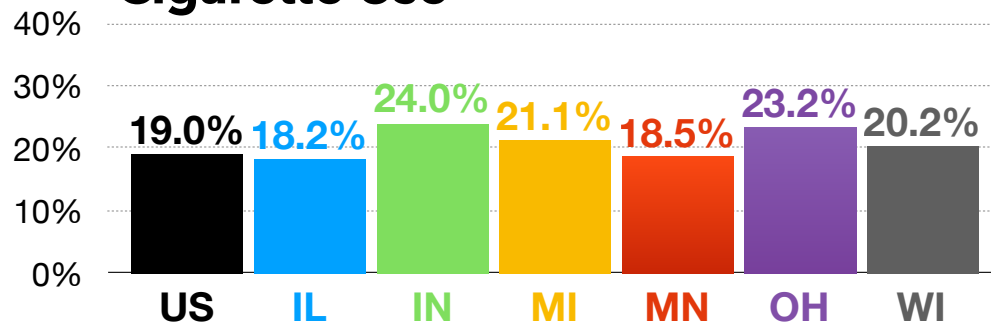


National Survey on Drug Use and Health, 2017-2018

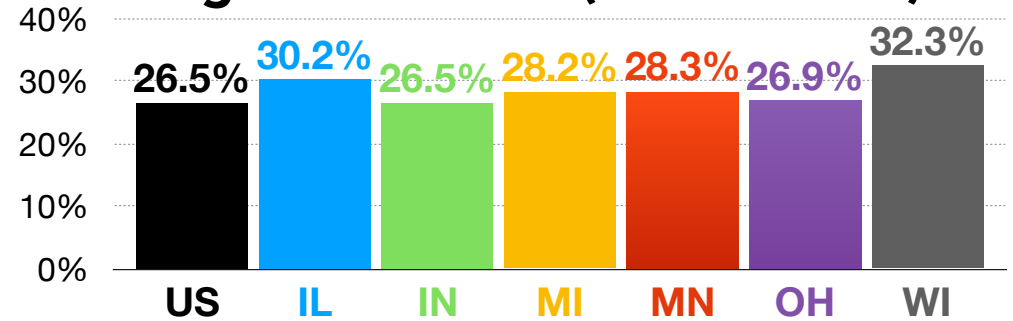
Behavioral issues → worse outcomes + higher costs

Past-Month Prevalence - 2017 to 2018

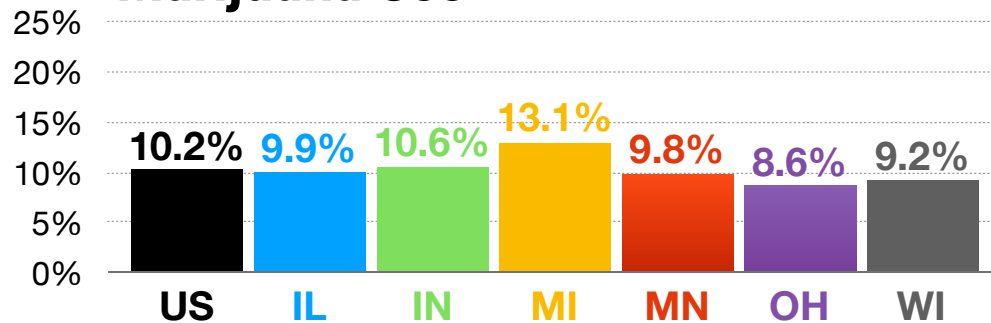
Cigarette Use



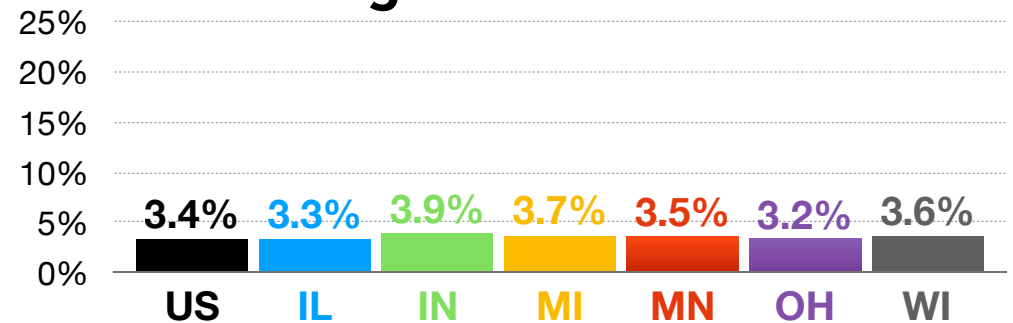
Binge Alcohol Use (≥5 M / ≥4 F)



Marijuana Use



Other Drug Use

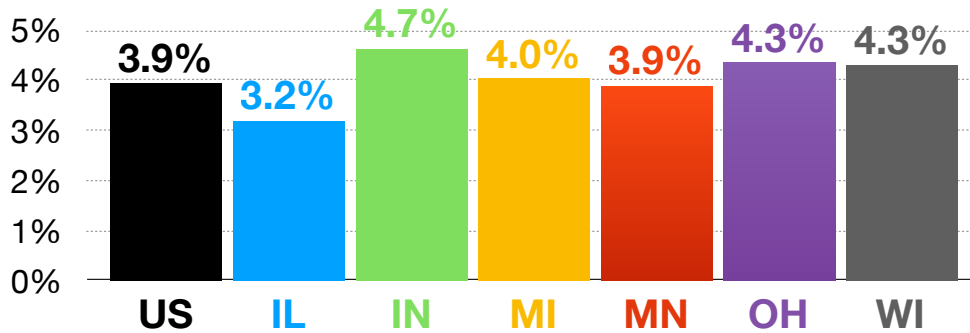


National Survey on Drug Use and Health, 2017-2018

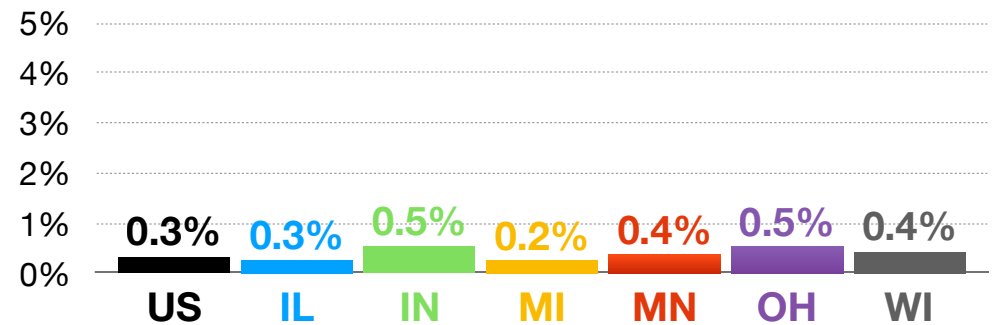
Behavioral issues → worse outcomes + higher costs

Past-Year Prevalence - 2017 to 2018

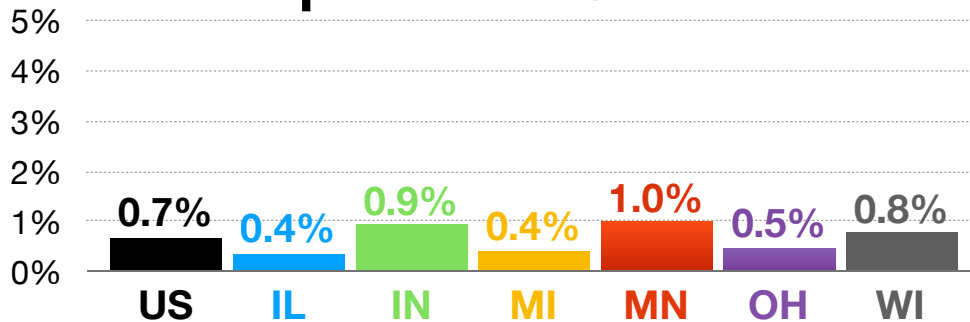
Pain Reliever Misuse



Heroin Use



Methamphetamine Use



National Survey on Drug Use and Health, 2017-2018

Behavioral Health

Mental Health &
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Disorders

Anxiety & Depression
PTSD
SPMI - Bipolar Dz, Psychosis
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Unhealthy and
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Unhealthy substance use
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Medication
Diet
Physical activity
Healthcare services

Behavioral issues → worse outcomes + higher costs

Medication Non-Adherence

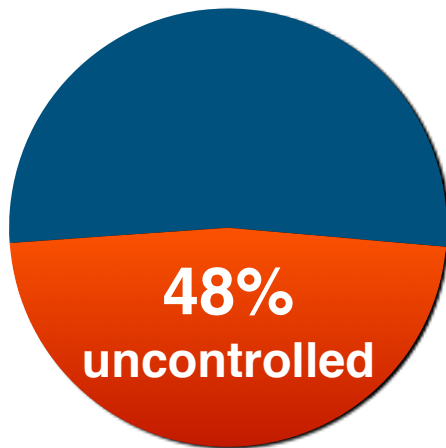
- For blue-collar minority pts, non-adherence to HTN medication is the greatest risk factor for heart failure
- Elderly have non-adherence rates of 40% to 86%, resulting in 4% to 11% of hospital admissions and 8% of ED visits
- 80% of elderly Medicaid patients have <80% Proportion of Days Covered (PDC) 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

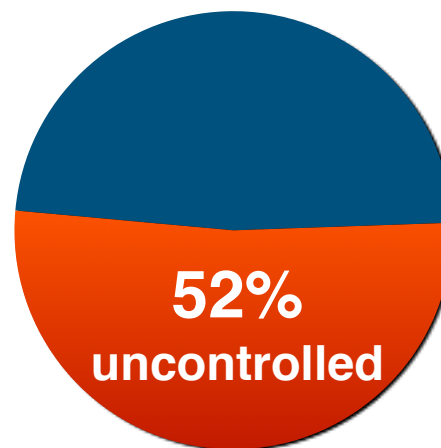
Behavioral issues → worse outcomes + higher costs

Chronic Disease Treatment in the US

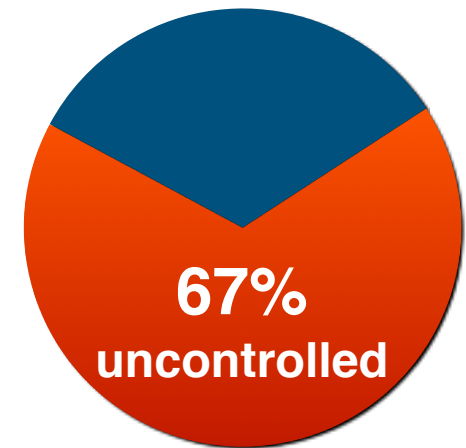
Patients with
Diagnosed
Hypertension



Patients with
Diagnosed
Type 2 Diabetes



Patients with
Diagnosed
Hyperlipidemia



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

Behavioral issues → worse outcomes + higher costs

Impacts of Medication Non-Adherence in the US

Preventable Deaths



Cost of Avoidable Hospitalizations



Other Avoidable Costs



Gandhi, Current Heart Failure Reports, 2016; Monane, Am J Pub Health, 1996; Ghali, Arch Int Med, 1988; Butler, AJMC, 2011



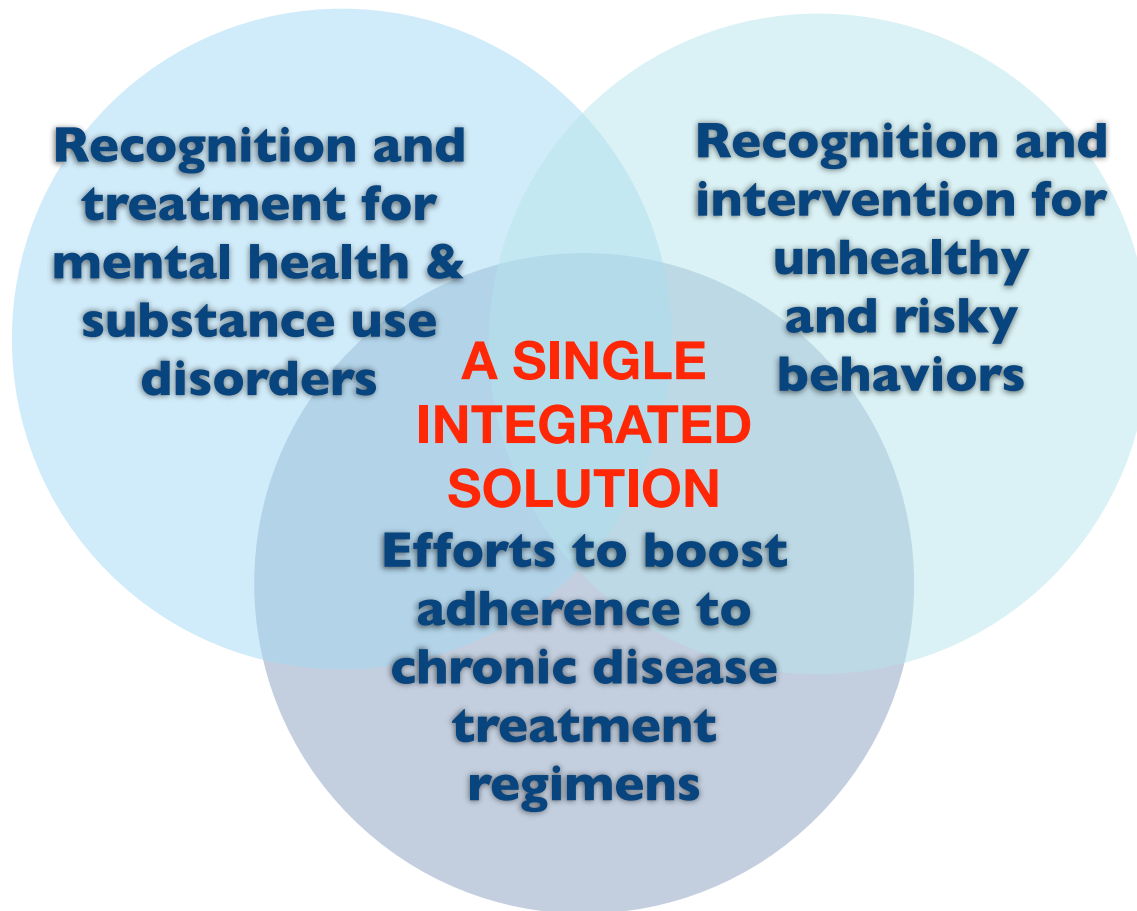
We need better ...

**Recognition and
treatment for
mental health &
substance use
disorders**

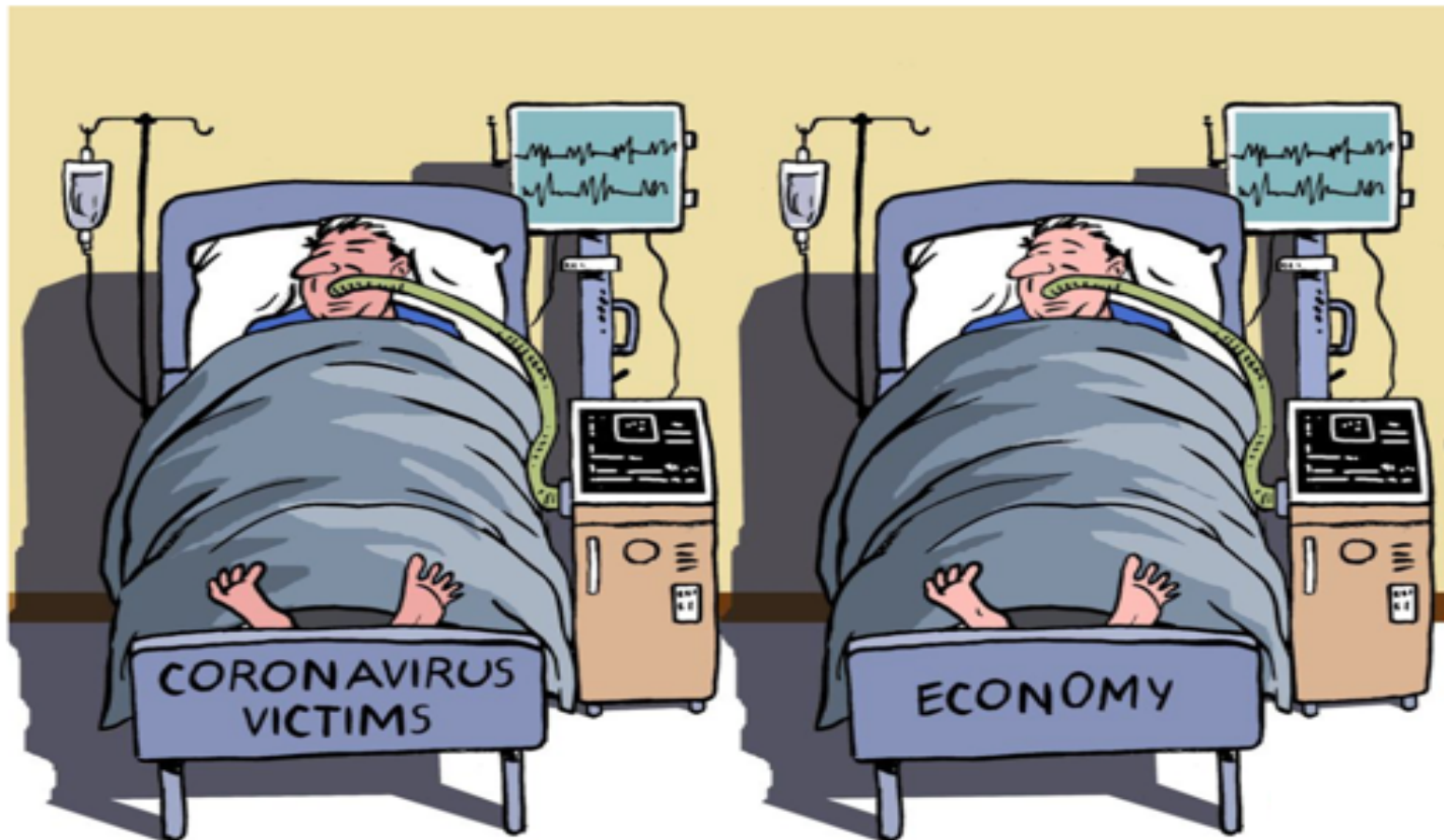
**Recognition and
intervention for
unhealthy
and risky
behaviors**

**Efforts to boost
adherence to
chronic disease
treatment
regimens**

We need better ...



... now more than ever!



RESEARCH ARTICLE

Open Access

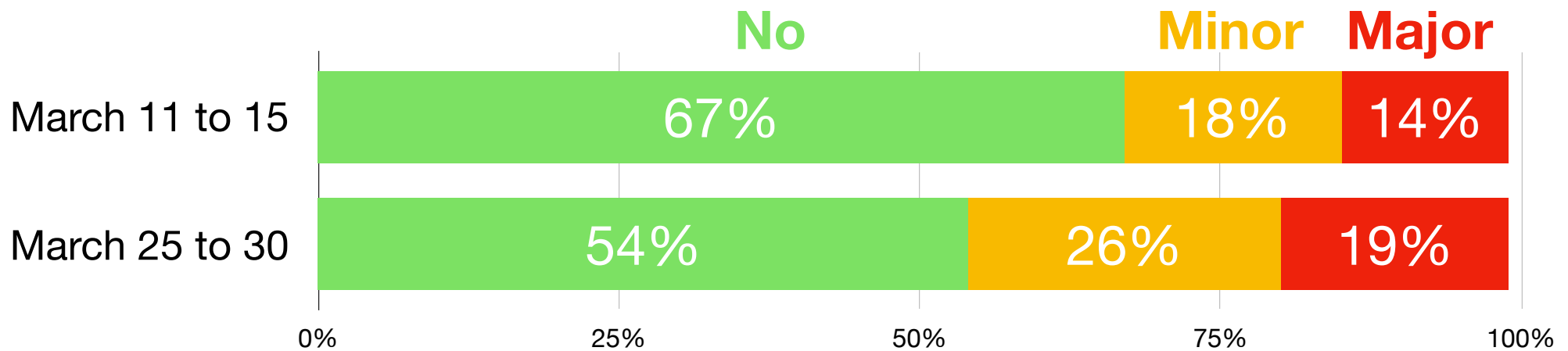


Mental health outcomes in times of economic recession: a systematic literature review

Diana Frasquilho¹, Margarida Gaspar Matos², Ferdinand Salonna^{3*}, 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?



<https://www.kff.org/health-reform/report/kff-health-tracking-poll-early-april-2020/>

KFF Health Tracking Poll - March 25 to 30

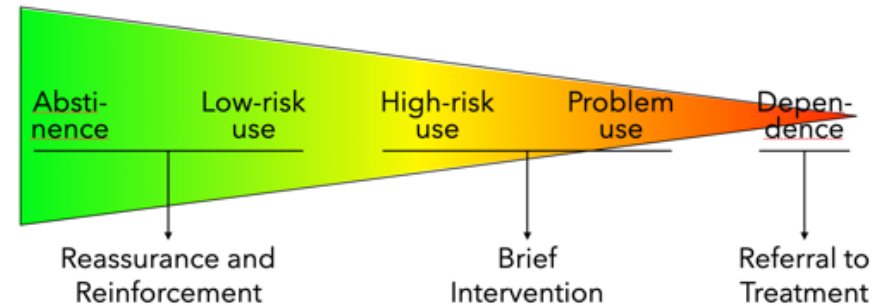
- 72% - My life has been disrupted “a lot” (45%) or “some” (27%)
- 59% - Worry about value of investments
- 57% - Worry that need to keep working increases chances of catching the coronavirus
- 53% - Worry about family members getting sick
- 53% - Worry about affording testing or treatment for the coronavirus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

<https://www.kff.org/health-reform/report/kff-health-tracking-poll-early-april-2020/>

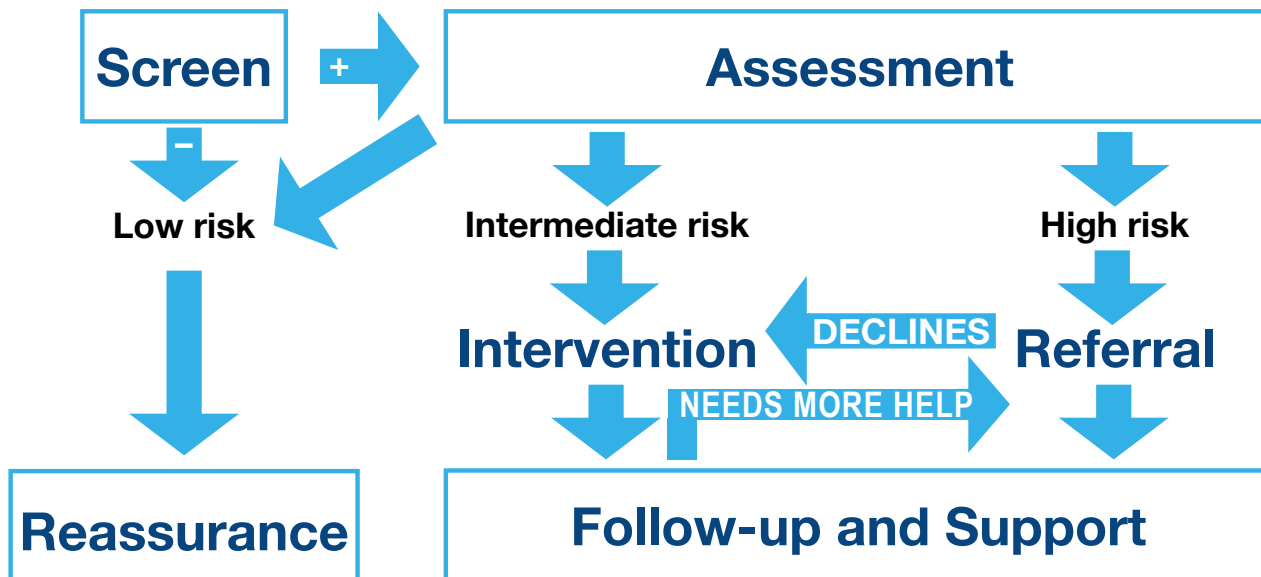
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For alcohol and drugs:
 Screening, Brief Intervention, and
 Referral to Treatment - SBIRT



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



Benefits

Identification

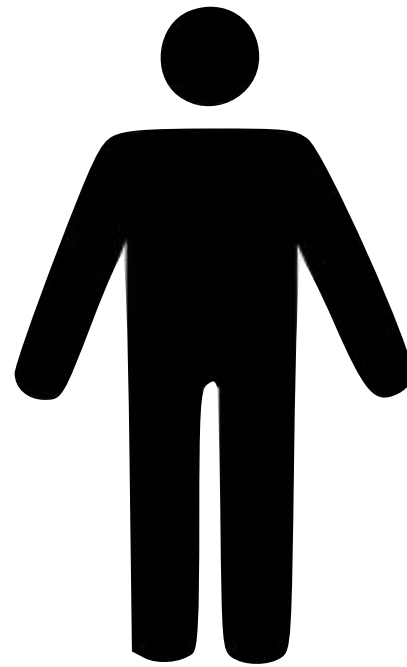
- Earlier
- More accurate

Intervention

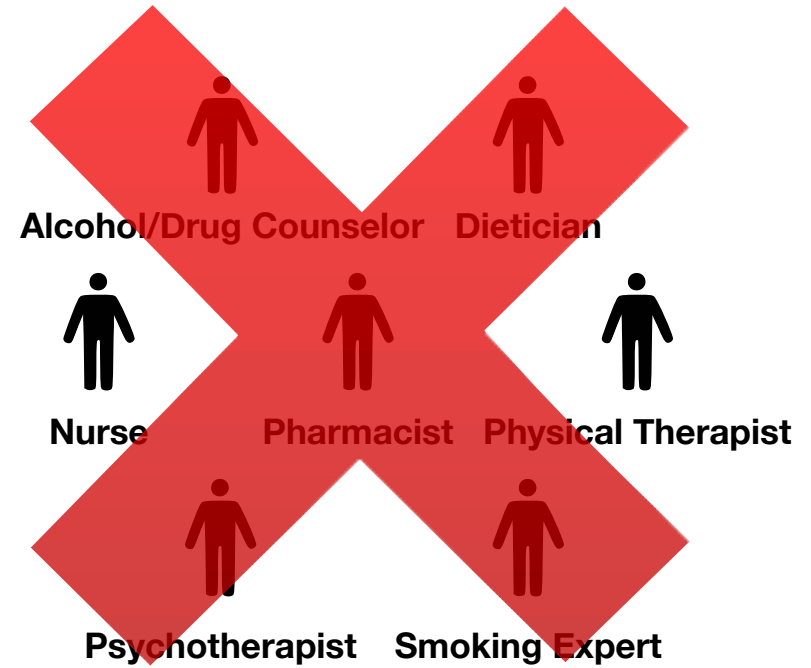
- Avert complications
- Prevent progression
- Avoid need for costlier treatment

WHO?

~~Train current staff~~

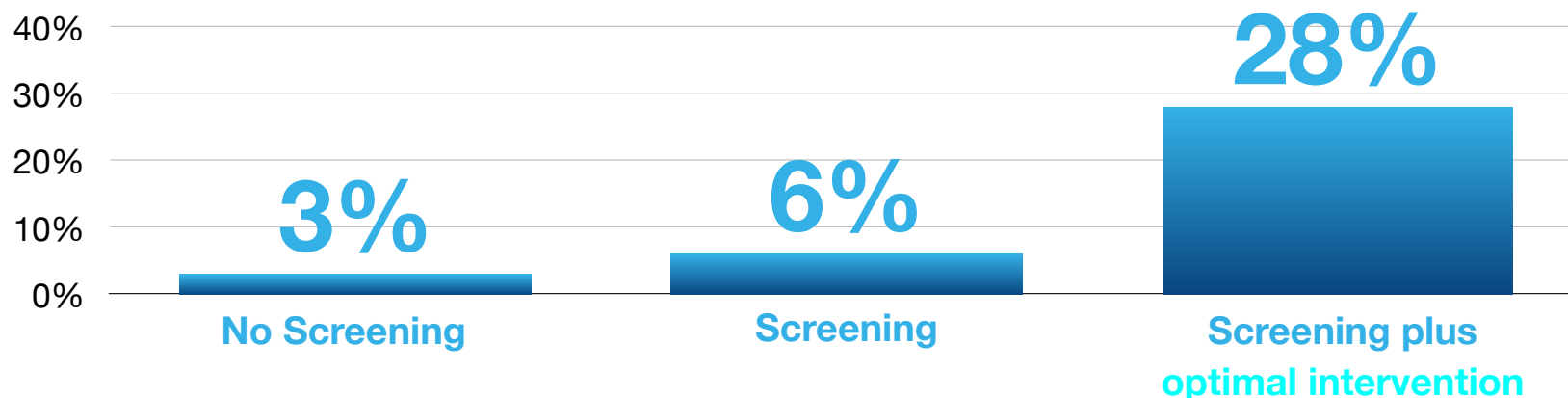


Health Coach



BSI Works for Smoking

**One-
Year
Quit
Rates**



Optimal intervention

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

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%

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Collaborative Care - A Team Approach to MHDs



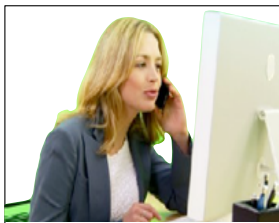
Primary care

- 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

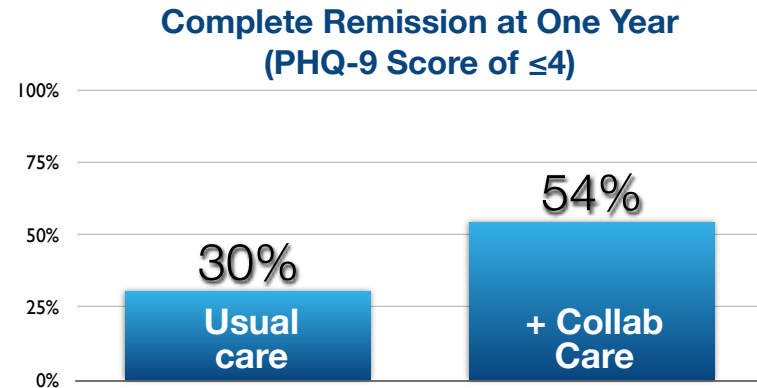
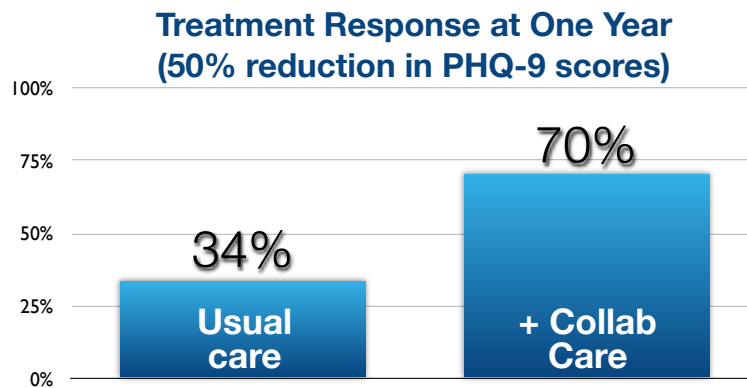
- What is their current pattern of behaviors?
- What changes do they believe would help most?
- What is their concrete plan for change?

■ 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?

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

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

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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

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

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

Carroll et al, Drug & Alc Dep, 2006. Field et al, Annals of Surgery, 2013. Lai, Cochrane Collaboration, 2010. Lundahl & Burke, J Clin Psych, 2009. Lundahl et al, Pt Educ Counseling, 2013.

Outline

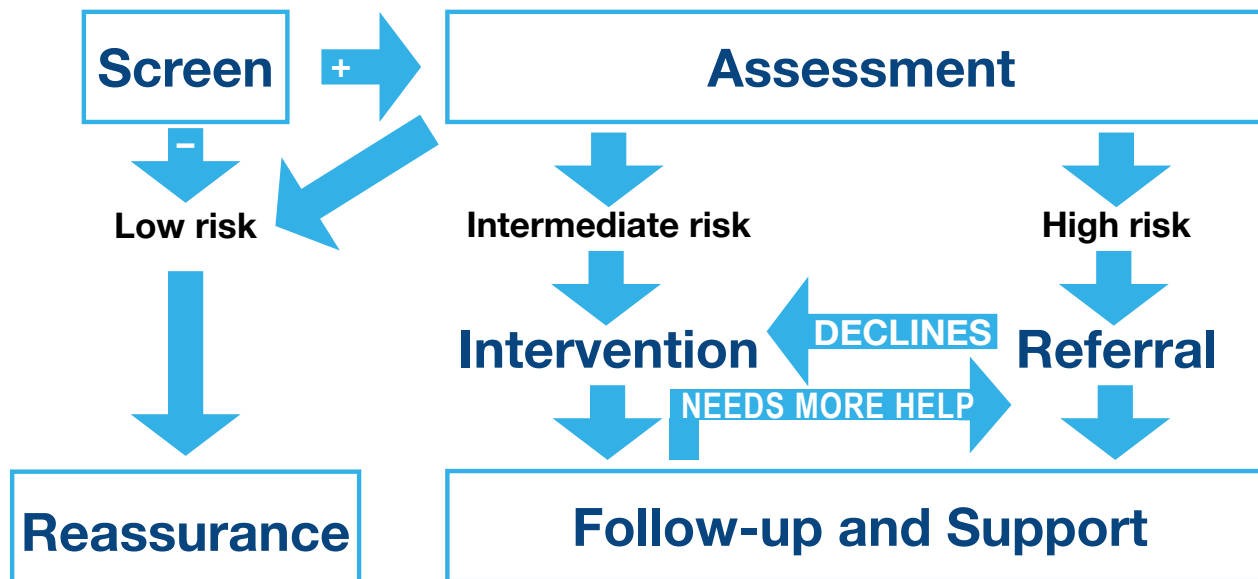
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Referral for SUDs is Not Enough

- 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



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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:

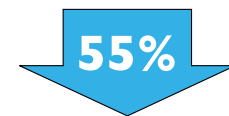
- Pt satisfaction: 4.3 to 4.9 of 5 points



Binge drinking



Marijuana use



Depression symptoms

- Reductions in drinking:
Bachelor's > Master's health coaches
- \$782 two-year net cost savings per Medicaid patient screened

Brown, American Journal of Managed Care, 2014; Paltzer, Journal of Behavioral Health Services and Research, 2017; Paltzer, Medical Care, 2019

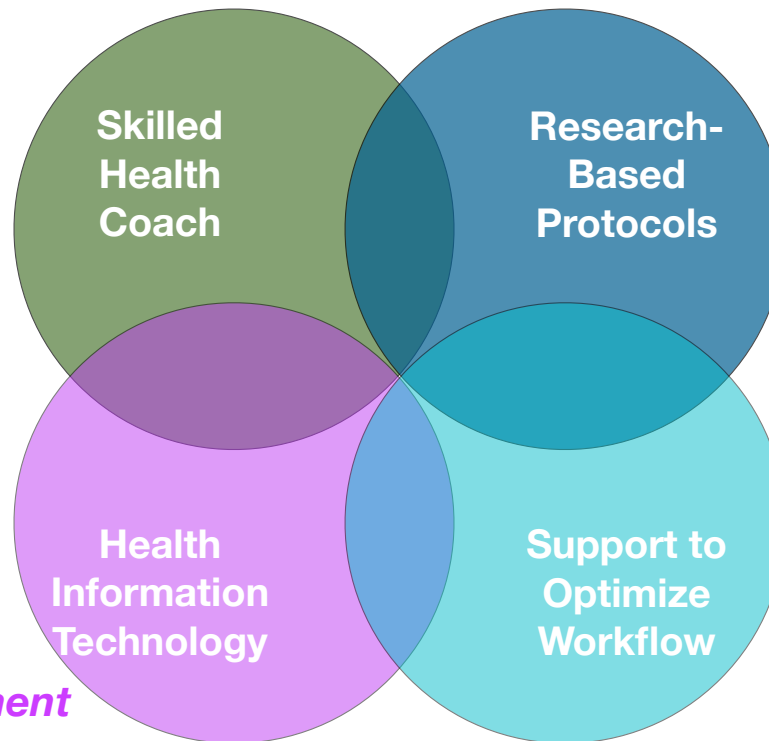
Health Coaching Topics - Well Adults

	<u>Effectiveness</u>	<u>Return on Investment</u>	<u>Notes</u>
Fruit intake	Modest	None	} Helps frame other topics as health-related
Vegetable intake	Modest	None	
Physical activity	Modest	None	
Smoking	Strong	High over many years	USPSTF-A
Alcohol	Strong	High in 1 year	USPSTF-B
Drugs	Moderate	Unknown	USPSTF-B
Anxiety	Strong	Unknown	-
Depression	Strong	High over 4 years	USPSTF-B

Integrated Health Coaching: Components for Success

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

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



- *Screens*
- *Assessments*
- *Intervention protocols*
- *Referral resources*

- *Quality metrics*
- *QI framework*
- *Coaching on best practices*

Cost Savings of BSI

	Setting	Patients	Investment	Savings	Net Savings	Per Patient ...	Years	ROI
Smoking	-	Medicaid	\$183	\$571	\$388	... who quit	1	2.1
Smoking	-	Medicaid, pregnant	\$201	\$1,273	\$1,072	... who quit	1+	5.3
Alcohol	PC	All adults	\$205	\$523	\$318	... intervened on	1	1.6
Alcohol & Drugs	ED	Disabled Medicaid	\$15	\$4,392	\$4,377	... intervened on	1	292
Alcohol & Drugs	PC	Medicaid	\$48 \$96	\$439 \$878	\$391 \$782	... screened	1 2	8.1 8.1
Depression	PC	≥60 yo	\$900	\$5,200	\$4,300	... intervened on	4	4.8

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

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Projected One-Year Cost Savings – 1,000 Primary Care Patients

	Unhealthy Alc/ Drug Use	Depression	Cigarette Smoking
Patients screened	1,000	1,000	1,000
Prevalence	20%	20%	18%
# patients intervened upon	200	200	180
Additional patients who quit (22% of those who receive interventions)	–	–	40
Year 1 healthcare cost savings per patient	\$300	\$1,300	\$571
Total 1-year healthcare savings	\$300,000	\$260,000	\$22,840
Total 1-year savings for all 1,000 patients	\$582,840		
Total 1-year savings per patient screened	\$583		

Projected Coach Hours for 1,000 Primary Care Patients

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

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

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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

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

Health Coaching Interventions

<u>Unhealthy Behaviors and SUDs</u>	<u>Mental Health Disorders</u>	<u>Medical & Social Needs</u>
<p><u>To promote commitment to change:</u> Motivational Interviewing</p> <p><u>To implement and sustain change:</u> Behavior Change Planning</p>	<p>The UW model of Collaborative Care</p>	<p>Referral to internal or external resources</p>
<p>Pharmacotherapy as appropriate</p>		

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

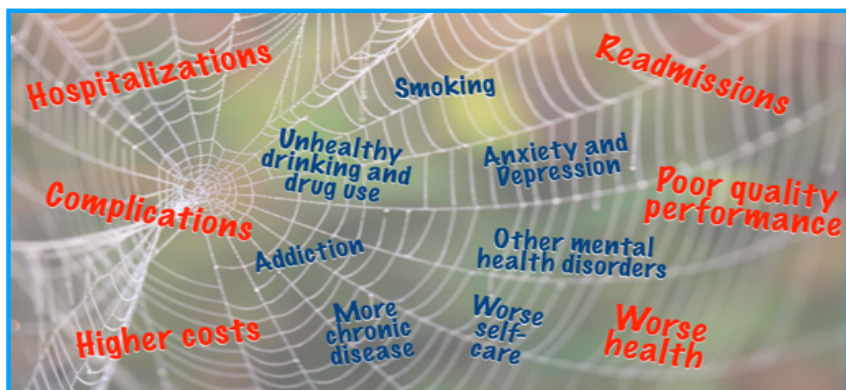
Non-Adherence
to Treatment
Regimens

CAD, CKD, COPD,
DM, HF, HTN,

Medication
Diet
Physical activity
Healthcare services

Summary

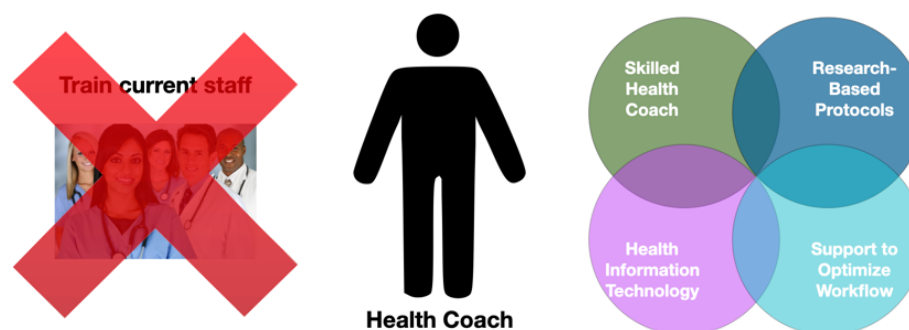
- Problem/Opportunity:



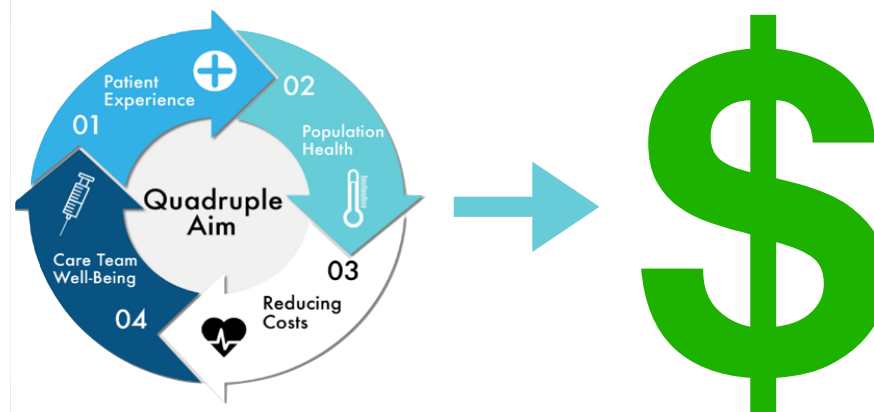
- Gaps:

Few healthcare settings deliver
 - SBIRT/BSI - MI - Collaborative care

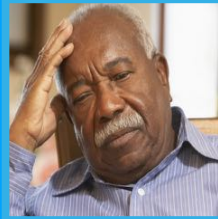
- Solution:



- Benefits:



SBIRT – Now More Than Ever!



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

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ConcertoHealth (2017-2020)**

**Board Member, Community Health Worker Coalition for Migrants and Refugees
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