



The Addicted Employee: Using Predictive Behavioral Analytics for Prevention and Treatment

Robin Parsons MS, LMHC, LCAC
Thad Perry, PhD
Fairbanks Employer Services

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Robin Parsons, MS, LMHC, LCAC, CTRS, ADS

- Chief Clinical Officer,
Fairbanks

Thad Perry, PhD

- PhD, Psychology, Vanderbilt
University
- Fairbanks Employer Services

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Agenda

Scope and Magnitude of the Problem

- Substance Abuse in Indiana
- Indiana Data on Drug Overdose
- Painkillers and Opiate Abuse

Healthcare Analytics and “Spotlighting”

- Drivers for Costs and Poor Performance
- Data Sources and Warehousing
- Social Determinants
- Predictive Modeling Application and Example

Process – Using Actionable Information

Preparing for the Future

Questions and Answers

Key Statistics

- 1 in 5 American adults are diagnosed with a behavioral health issue each year
 - Only 4 out of 10 receive any treatment
- 27 million use illegal drugs annually
 - Only 1 in 10 receives specialized treatment for substance use disorders
- Opioid epidemic
 - 78 people die each day from opioid overdoses
- Suicide epidemic
 - 118 people die each day

Substance Abuse Trends in Indiana

- Alcohol and Tobacco are the most widely abused substances in Indiana
- The opiate epidemic involving both prescription drugs and heroin has impacted Indiana tremendously. Leading to significant increases in inpatient admissions and overdose deaths
- Indiana was crowned the Meth capitol of the world, largely because of the number of meth labs seized , especially in Southern Indiana.

Indiana Trends

- Excessive use of alcohol and drugs have lead to increases in Cardiovascular conditions
Automobile accidents and other accidental injuries
HIV/AIDS, Hepatitis , Neonatal Abstinence Syndrome
- Harmful Social and Legal Consequences
Crime, domestic violence, child abuse, failure in school or work and family disruption.

Indiana Data on Drug Overdose

- Indiana leads the country with the most pharmacy robberies from 2013-2016
- Indiana has the 17th highest drug overdose mortality rate in the United States, with 14.4 per 100,000 people
- Drug overdose deaths - a majority of which are from prescription drugs - in Indiana quadrupled since 1999 when the rate was 3.2 per 100,000

Prescription Drug Abuse: Strategies to Stop the Epidemic

Disease

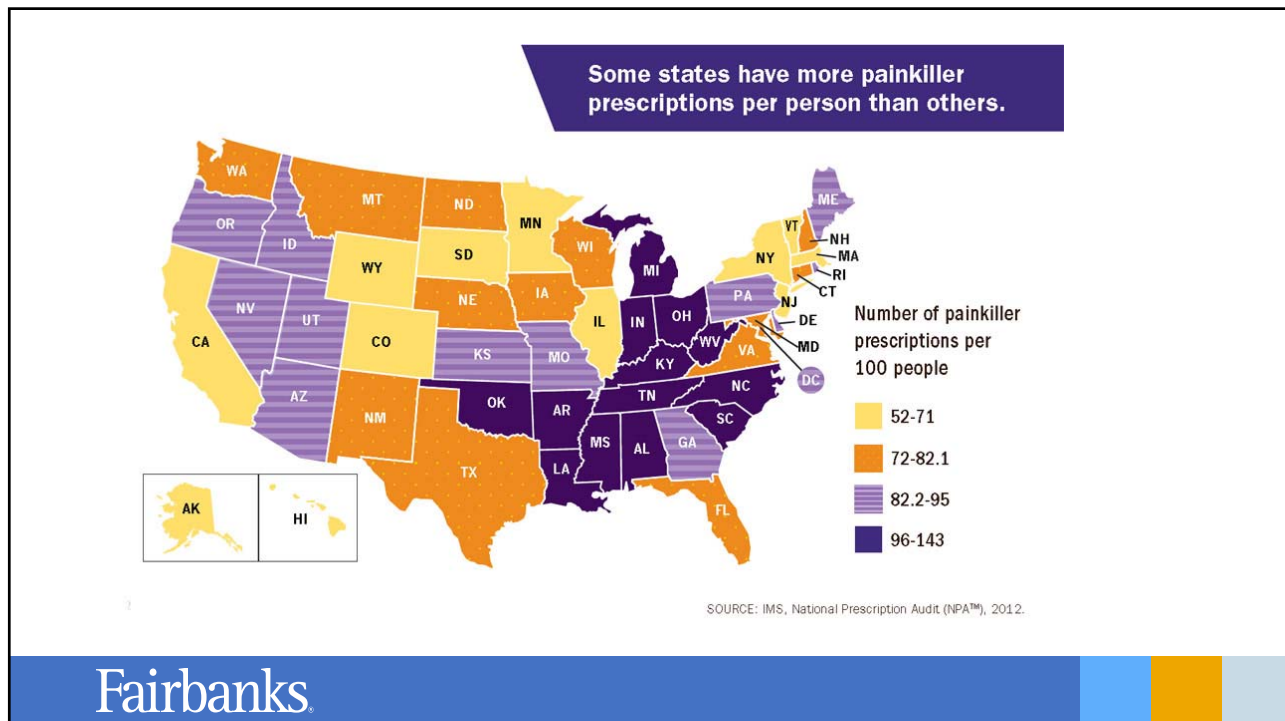
- Clear biologic basis
- Unique, identifiable signs and symptoms
- Predictable course and outcome
- Progressive
- Potentially fatal

Brain Disease

- Floods Brain with Pleasure Chemicals
- Deprives the Brain of Warning Chemicals
- Creates an Intense Euphoria
- Inhibits Anxiety and Fear even with Real Threats
- Impairs Judgement and Impulse Control
- Loss of Choice

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Women and Opioids

- Prescription opioid overdoses killed 5 times as many women in 2010 than in 1999
- More than 6600 women died from prescription opioid overdoses in 2010 (18 per day)
- Every 3 minutes, a woman goes to an Emergency room for prescription opioid abuse or misuse

Teens and Opioids

- Every day, 2500 American youth (12-17) abuse a prescription pain pill for the first time
- Nearly 1 in 20 high school students has taken Vicodin
- 1 in 30 has taken OxyContin
- Most of them got their pills from a friend or relative

Chemical Dependence – DSM Criteria

- Tolerance
- Withdrawal
- More use than intended
- Inability or desire to cut down
- Large amount of time spent using or obtaining
- Important activities given up
- Continued use despite negative consequences

Three or more of the above during a 12 month period

Alcohol

(Beer, Wine, Liquor)

- Intoxication, slurred speech, unsteady gait, impaired coordination, slow reflexes, low inhibition, blackouts
- Look for:
 - ✓ Smell of alcohol, hangovers, glazed eyes, bottles, cans or glasses with other liquids
 - ✓ Dangers are: accidents, impaired ability and judgment
 - ✓ Continued use can lead to hear and liver damage

Marijuana

(Pot, Dope, Weed, Herb, Grass, Hash, Joint, Blunt, etc.)

- Altered perceptions, red eyes, dry mouth, sweet burnt odor, neglect of self, loss of motivation, slowed reactions, memory lapses, euphoria, laughing, hunger
- Look for:
 - ✓ Rolling papers, pipes, dried plants, roach clips, baggies, incense
 - ✓ Dangers are: anxiety, memory and learning impairment, slowed thinking

Marijuana

A new report by the Substance Abuse and Mental Health Services Administration (SAMHSA) reveals that 2.6 million people aged 12 or older in 2016 tried marijuana for the first time in the past year. Only about a third of people aged 12 or older perceived great risk of harm from weekly marijuana use. When asked, 44.7 percent of youth aged 12 to 17 reported that it would be fairly easy or very easy to obtain marijuana

Cocaine or Amphetamines

(Speed, Uppers, Meth, Coke, Rock, Crack, Crank, Crystal, Ecstasy)

- Dilated pupils, restlessness, HBP, high heart rate, brief euphoria, talkativeness, high and then low, loss of appetite, weight loss, nervousness, mood swings
- Look for:
 - ✓ Glass vials, razor blades, straws, glass pipes, white powders, syringes, needle marks, sudaphedrine packages
 - ✓ Dangers are: severe depression, paranoia, heart attacks, seizures, lung damage

Opioids

(Heroin, Morphine, Codeine, Loritabs, Oxycontin, Vicodin)

- Euphoria, drowsiness, insensitivity to pain, nausea, vomiting, watery eyes, runny nose, lethargy
- Look for:
 - ✓ Needle marks, needles, syringes, spoons, pipes, pinpoint pupils, cold moist skin
 - ✓ Dangers are: lethargy, weight loss, AIDS hepatitis, accidental overdose

Heroin

- Heroin is an opiate that is highly addictive.
- It can be smoked, snorted or injected.
- Heroin acts as a depressant that impairs judgment, coordination and self control.
- Heroin exposes long term users to many other ill effects, including:
 - ✓ Clogged blood vessels
 - ✓ Collapsed veins
 - ✓ Severe skin infections
 - ✓ Abscesses
 - ✓ Infection of the heart lining and valves

Buprenorphine

- Subutex and Suboxone are medications approved for the treatment of opiate dependence. Both medicines contain the active ingredient, buprenorphine hydrochloride, which works to reduce the symptoms of opiate dependence.
- Contact the CSAT Buprenorphine Information Center at 866-BUP-CSAT, or via email at info@buprenorphine.samhsa.gov or <http://buprenorphine.samhsa>.

Tranquilizers

(Valium, Xanax, Ativan, Klonopin)

- Depressed breathing and heartbeat, intoxication, drowsiness, uncoordinated movements
- Look for:
 - ✓ Capsules, tablets, long periods of sleep, pill bottles, both marked and unmarked, other names
 - ✓ Dangers are: muscle rigidity, withdrawal, overdose

Hallucinogens

(Marijuana, LSD, PCP, Acid, Mushrooms,)

- Altered mood, anxiety, panic, nausea, slurred speech, blurred, lack of coordination
- Look for:
 - ✓ Capsules, tablets, micro dots, dried mushrooms, dilated pupils, hallucinations, disorientation, mood swings, nausea
 - ✓ Dangers are: unpredictable behavior, emotional instability, violent behavior

Inhalants

(Gas, Aerosols, Glue, Nitrates, Correction Fluids, Computer Cleaners, Paint)

- Nausea, dizziness, headaches, poor coordination, bad breath, high voice, impaired vision, violent behavior, memory and thought problems
- Look for:
 - ✓ Cleaning rags, empty spray cans like whipped cream, glue, baggies, sacks, soaked socks
 - ✓ Dangers are: unconsciousness, suffocation, nausea, vomiting, damage to brain, CNS, sudden death

Drug Abuse Costs To Employers



Drug abuse costs employers upwards of \$81 billion each year (NCADD)

Drivers of Costs and Poor Performance



Most employers do not have a clear understanding of the relatively small number of people who drive the majority of direct and indirect costs.

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What's the Risk?

- Increased healthcare costs
- Increased workers' compensation costs
- Increased absenteeism
- Increased turnover
- Diminished productivity



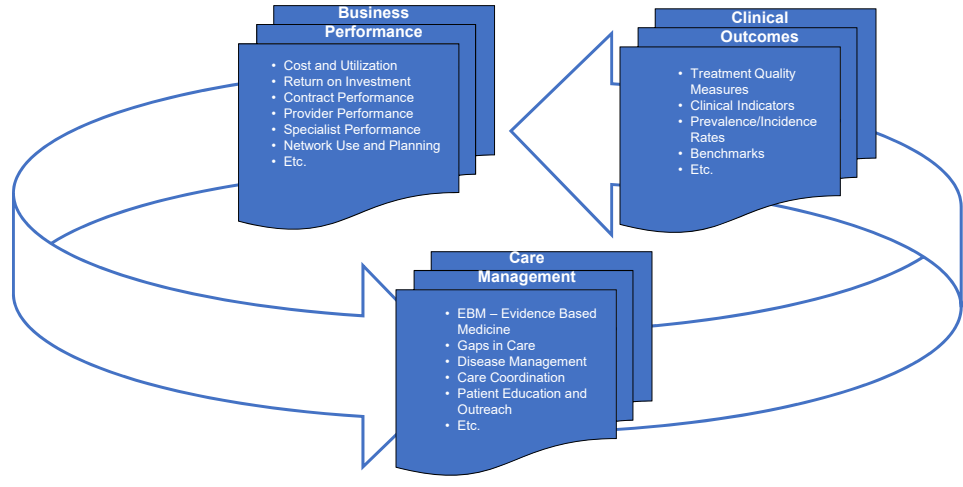
"What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?"

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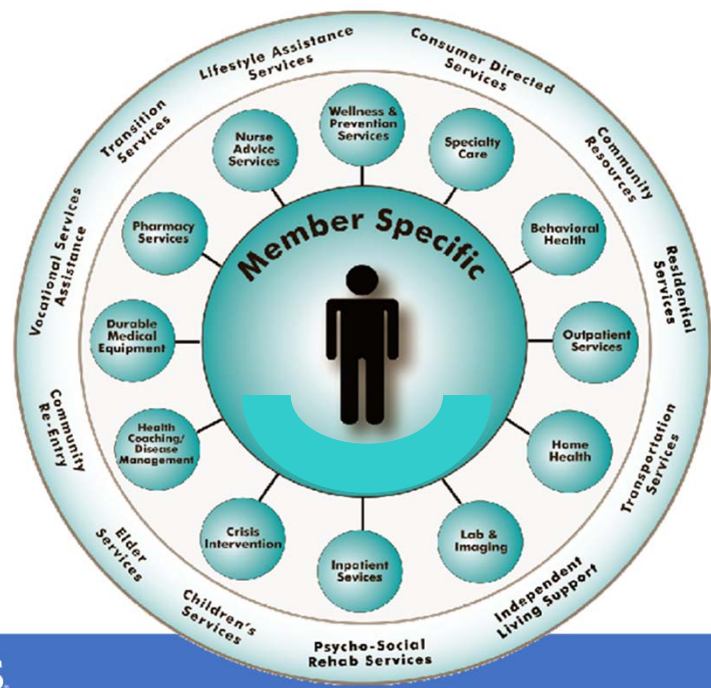
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Enterprise Data Warehouse

- Payer Data**
- Claims Data
 - Medical & Rx
 - Data Types
 - Payment and Utilization
 - Type of Service
 - Place of Service
 - Care Management Programs
 - HRAs/GHAs
 - Other Sources and Types
-
- Provider Data**
- Electronic Medical/Health Records (EMR/EHR)
 - Patient Data:
 - Demographics
 - BMI/BP/etc.
 - Lab and Radiology Values
 - Test Results
 - Provider's Notes
 - Other Sources and Types



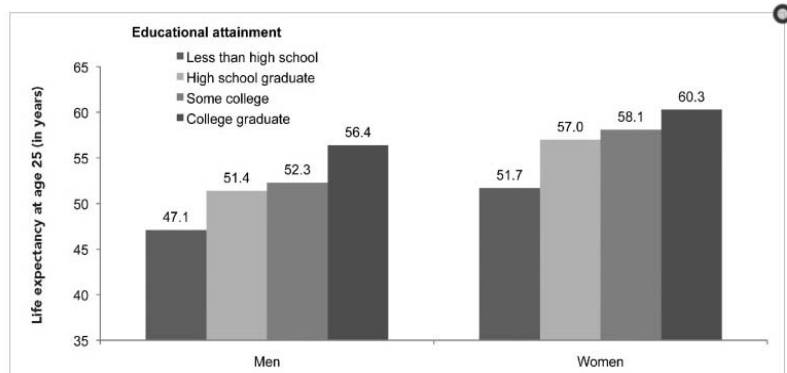
Where are these data?



Social Determinants of Health

- World Health Organization's definition of Social Determinants of Health: *the conditions in which people are born, grow, live, work and age... the fundamental drivers of these conditions.*
 - Social Determinants – Food Insecurity, Walkability, Transportation, Access to Care and Social Support
 - Socioeconomic Factors – Income, Retirement Savings, Wealth, Education

Social Determinants of Health – Education



Life expectancy in the U.S. at age 25, by education and gender, 2006^a

^aSource: Department of Health and Human Services (US), National Center for Health Statistics. Health, United States 2011: with special feature on socioeconomic status and health. Life expectancy at age 25, by sex and education level [cited 2012 Nov 29]. Available from: URL: <http://www.cdc.gov/nchs/data/hus/2011/fig32.pdf>. Reported in: Braveman P, Egerter S. Overcoming obstacles to health in 2013 and beyond: report for the Robert Wood Johnson Foundation Commission to Build a Healthier America. Princeton (NJ): Robert Wood Johnson Foundation; 2013.

Using Social Determinants of Health

- Identify patient-specific life circumstances that could adversely impact health outcomes.
- Improve understanding of the patient, which can improve the patient's engagement in managing his/her health.
- Provide service demand estimates, identifies gaps in care, and identifies opportunities by medical specialty.
- Target future improvement opportunities within the geographic area at the patient level.

Demographic Overview (1/1/2015 – 12/31/2015)

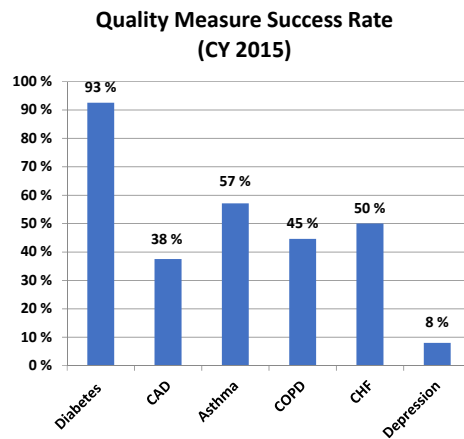
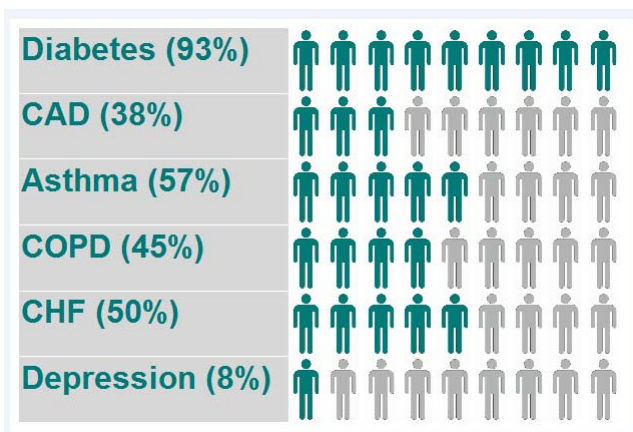
2,416 Members	Male	Female	Total	Age Group	Total
Unique Members with Claims	591	1,223	1,814	0-18	456
Unique Members without Claims	288	314	602	19-39	869
Average Age	35	37	37	40-64	1,011
				65+	80

Medical Dollars	Pharmacy Dollars	Total Dollars
\$14,291,050	\$2,060,797	\$16,351,847

Chronic Conditions (1/1/2015 – 12/31/2015)

Condition Category	Total Paid
Lymphatic, Head and Neck, Brain, and Other Major Cancers	\$2,834,500.14
Specified Heart Arrhythmias	\$2,397,758.63
Major Organ Transplant Status	\$2,294,910.48
Breast, Prostate, Colorectal and Other Cancers and Tumors	\$1,632,529.14
Seizure Disorders and Convulsions	\$1,131,030.30
Drug/Alcohol Dependence	\$568,597.17
Metastatic Cancer and Acute Leukemia	\$488,321.67
Ischemic or Unspecified Stroke	\$465,468.74
Congestive Heart Failure	\$465,468.74
Vascular Disease	\$406,909.26

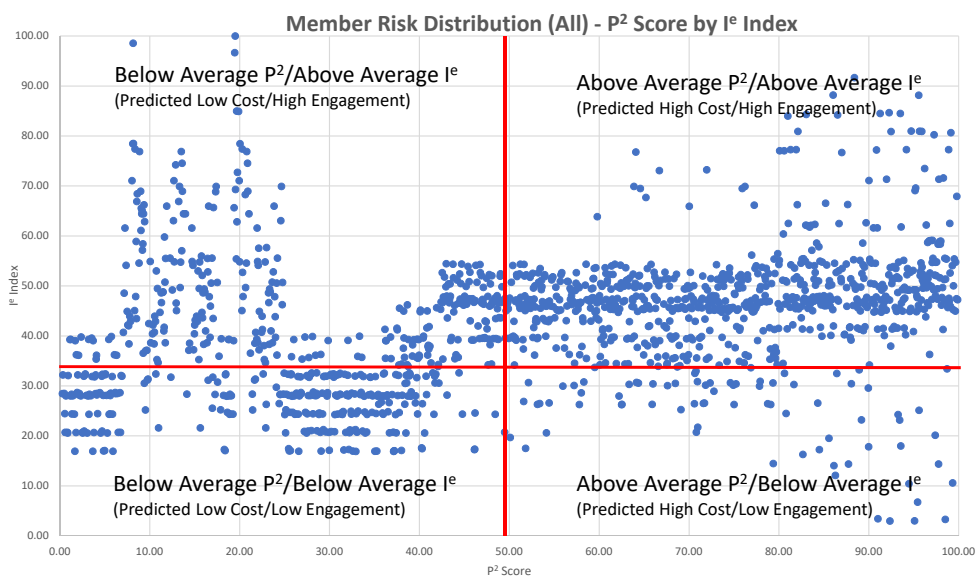
Gaps in Care



Predictive Analytics — P² Score™ and I^e Index™

Understand your entire patient population so you can make better decisions, allocate resources more effectively, and apply interventions as needed.

- Patient Predictive Risk Score (P² Score™) – This predicts the risk of a member being high cost/utilization in the absence of appropriate interventions.
- Impact and Engagement Index (I^e Index™) – This predicts the likelihood that a member will actively engage or participate in care management activities related to their conditions or healthcare concerns.



Current Per Member Per Month Cost by Risk Categories

i ^e (All)	P ² (All) PEPM Medical Costs		
	High	Moderate	Low
High	\$4,073	\$147	\$14
Moderate	\$4,908	\$124	\$8
Low	\$3,218	\$172	\$1

Overall PEPM = \$495

10% Migration from High-Moderate-Low Risk – PEPM = \$371

25% Migration from High-Moderate-Low Risk - PEPM = \$159

Process – Using Actionable Information



Process – Using Actionable Information

- Identify:
 - Patient-centric goals for better health and engagement
 - Individualized motivational factors while building on their strengths
 - Barriers to achieving health goals and a plan to address them
- Target:
 - Desirable and sustainable behavioral changes
- Intervene:
 - Optimize the employee's well-being by effectively using employer's benefits and wellness program
- Outcomes:
 - When jointly-determined goals are reached and on-going coaching is no longer needed
 - Follow-up by coach to reassess status and gains

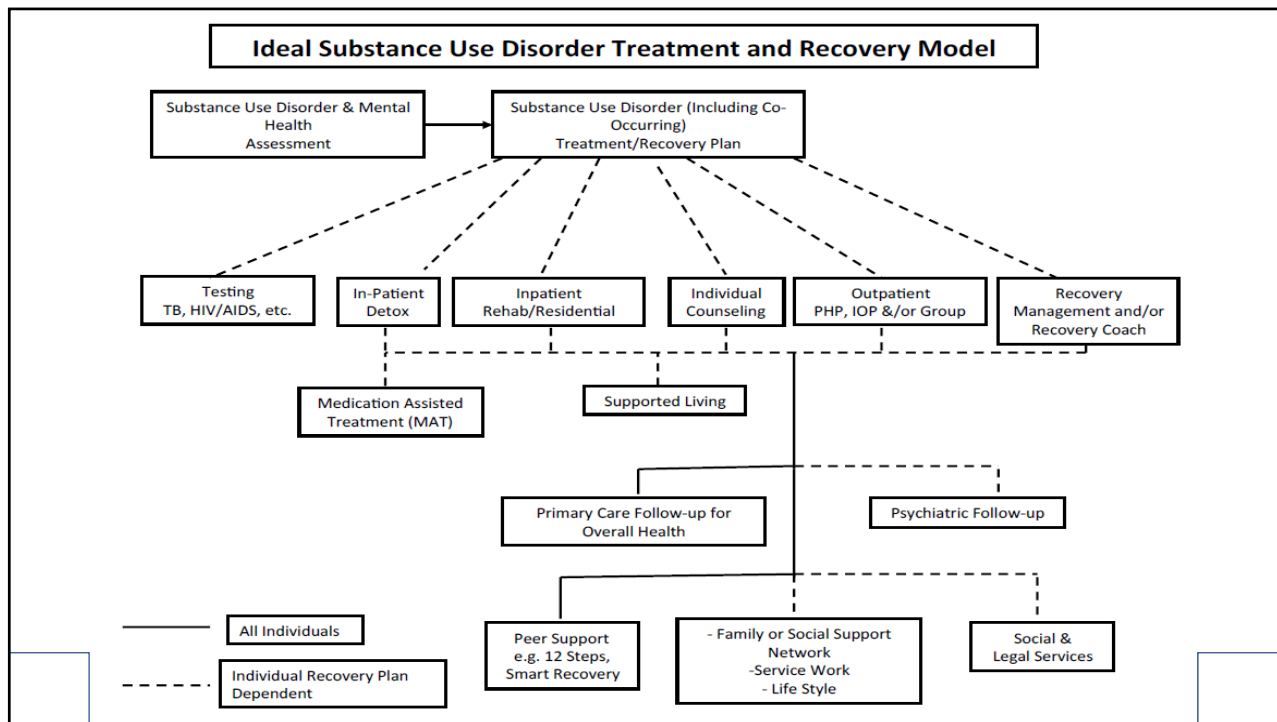
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What's Next?

- 67% of individuals with a behavioral health disorder do not get behavioral health treatment
- Depression goes undetected in over 50% of primary care patients
- 84% of the time the 14 most common physical complaints have no identifiable cause



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Resources and References

SAMSHA
 NSDUH (National Survey on Drug use and Health)
 NIDA
 NIAAA
 CDC
 ASAM
 IUPUI Fairbanks School of Public Health
fairbankscd.org
fairbanksemployerservices.com

Fairbanks – A Leader In Recovery Support

- 70+ years of experience in substance use disorders
- Touch over 20,000 individuals annually through treatment, education and outreach
- 300 employees and 260 volunteers
- Non-profit
- Provide a full continuum of care from prevention to alumni programs
- Donate significant percentage of operating revenue to patient assistance

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Fairbanks – Accreditations & Affiliations



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Q&A



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