Feasibility of Implementing Workplace Opioid Guidelines

Intervention Protocol 1.0

National Clinical Trial (NCT) Identified Number: 05387408

Principal Investigator: Ann Marie Dale

Policies

Sponsor: Washington University School of Medicine

Grant Title: Improving Health and Employment Outcomes Through Workplace Opioid

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CONFIDENTIALITY STATEMENT

This document is confidential communication. Acceptance of this document constitutes agreement by the recipient that no unpublished information contained herein will be published or disclosed without prior approval of the Principal Investigator or other participating study leadership and as consistent with the NIH terms of award.

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STATEMENT OF COMPLIANCE

The trial will be carried out in accordance with International Council on Harmonisation Good Clinical Practice (ICH GCP) and the following:

- United States (US) Code of Federal Regulations (CFR) applicable to clinical studies (45 CFR Part 46, 21 CFR Part 50, 21 CFR Part 56, 21 CFR Part 312, and/or 21 CFR Part 812).

National Institutes of Health (NIH)-funded investigators and clinical trial site staff who are responsible for the conduct, management, or oversight of NIH-funded clinical trials have completed Human Subjects Protection and ICH GCP Training.

The protocol, informed consent form(s), recruitment materials, and all participant materials will be submitted to the IRB for review and approval. Approval of both the protocol and the consent form(s) must be obtained before any participant is consented. Any amendment to the protocol will require review and approval by the IRB before the changes are implemented to the study. All changes to the consent form(s) will be IRB approved; a determination will be made regarding whether a new consent needs to be obtained from participants who provided consent, using a previously approved consent form.]

INVESTIGATOR'S SIGNATURE

The signature below constitutes the approval of this protocol and provides the necessary assurances that this study will be conducted according to all stipulations of the protocol, including all statements regarding confidentiality, and according to local legal and regulatory requirements and applicable US federal regulations and ICH guidelines, as described in the *Statement of Compliance* above.

Principal Investigator or Clinical Site Investigator:

Signed:  Date: 12/18/23

Name*: Ann Marie Dale

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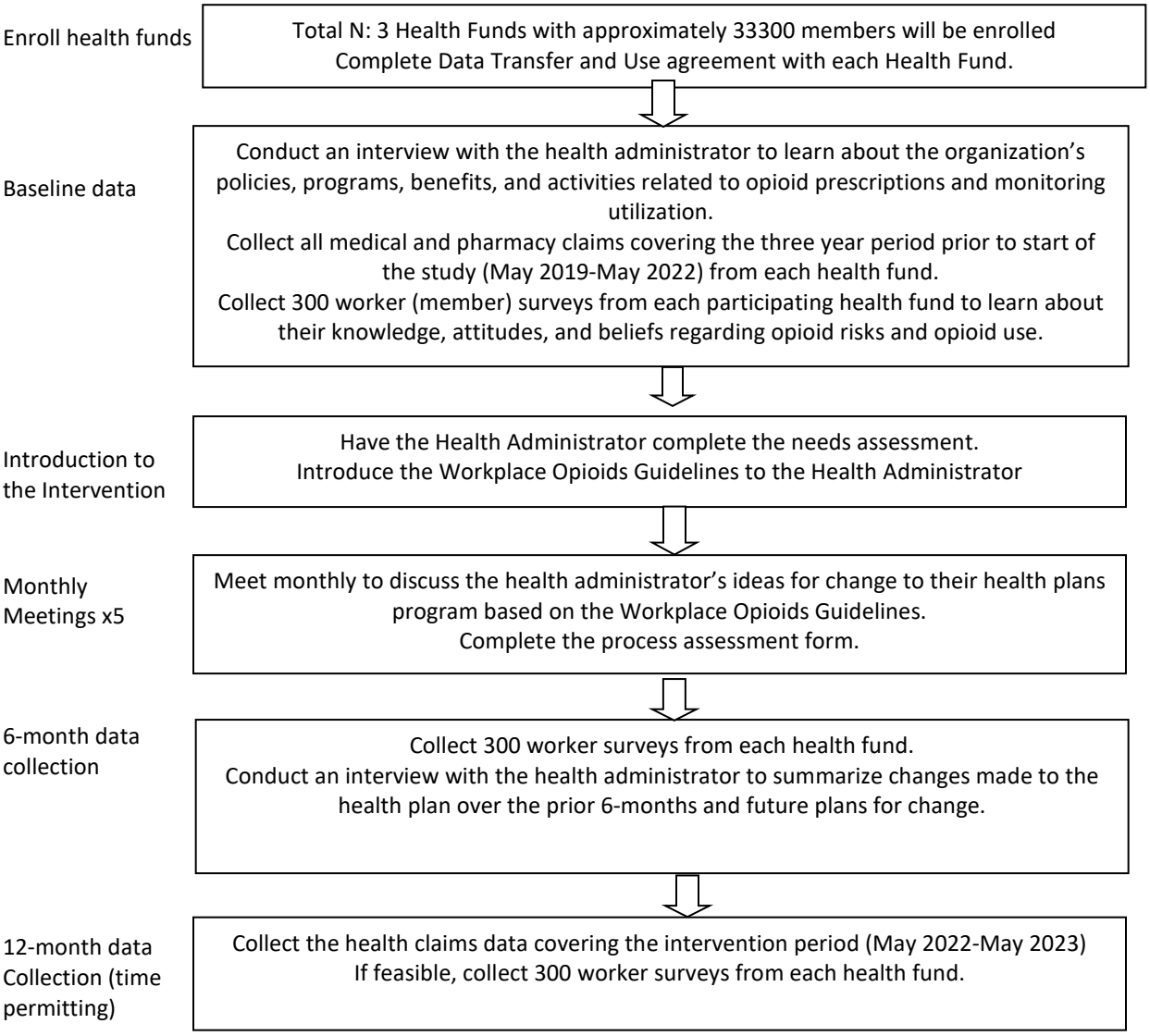
1 PROTOCOL SUMMARY

Title:	Improving Health and Employment Outcomes Through Workplace Opioid Policies
Grant Number:	1R34DA050044-01
Study Description:	We will implement the intervention in three local union health funds, evaluate the implementation using the RE-AIM framework, and collect the data needed to measure effectiveness of the workplace opioid guidelines. We will measure a) the health fund's adoption of policies and programs; b) opioid prescriptions, chronic opioid use, and OUD in health claims and pharmacy data; c) changes in knowledge, attitudes, and beliefs of employers, health fund administrators, and employees; and d) employee participation in employee assistance programs and healthcare recovery services.
Objectives*:	The overall aim is to evaluate the feasibility of implementing workplace opioid guidelines in the construction trades; define and collect measures of implementation and effectiveness. The primary objective is to evaluate a change in opioid misuse and opioid use disorder from medical and pharmacy claims, and worker surveys following a change in policies and programs within health funds. The secondary objective is to evaluate a change in lost time and willingness to seek help among workers who are struggling with opioid misuse or substance use problems on worker surveys.
Endpoints*:	The primary endpoints are a) the change in the proportion of workers with opioid misuse, opioid use disorder and opioid overdose: administrative data and b) in the proportion of workers with opioid misuse: worker surveys from baseline to 6-months. The secondary endpoints are a) the change in the proportion of workers with lost time: worker surveys and b) the proportion of workers who are willing to seek help: worker surveys from baseline to 6-months.
Study Population:	Participants will be members of three participating union health funds. We anticipate these unions will have 33300 members enrolled between 2019-2023, which is the period of data used for the trial. All union members of the participating health funds will be enrolled in the study. We expect the demographics of the participants will reflect the demographics of the membership, which is approximately 8% female, and 90% Caucasian. All participants will be located within the geographical region of the union membership.
Phase* or Stage:	This is a feasibility trial.

Description of Sites/Facilities Enrolling Participants:	We will ask each health fund to share the invitation for participating in the member worker surveys although the data will be collected electronically and stored on the Washington University secure servers. The union health funds will use their communication channels to reach their members.
Description of Study Intervention/Experimental Manipulation:	This is a single arm, intervention feasibility trial to evaluate the researcher's ability to enroll union health funds, collect secondary claims data and primary survey data, and to monitor the health funds use of the intervention. The intervention will be a comprehensive evidence-based set of guidelines shared with each participating union health fund and monitored for use of the guidelines through monthly meetings with the research team for 6 months. Implementation process measures will document the use of the intervention.
Study Duration*:	We will enroll participants from May 2022 through May 2023.
Participant Duration:	Each participant will be invited to complete a survey at baseline and at 6-months, although we will not collect identifiers that link the data between time points so each participant will be enrolled for one data collection.

1.1 SCHEMA

Flow Diagram (single arm feasibility trial)



1.2 SCHEDULE OF ACTIVITIES

	Baseline	Visit 1 Day 1	Visit 2 Day 30 ±7	Visit 3 Day 60 ±7	Visit 4 Day 90 ±7	Visit 5 Day 120 ±7	Visit 6 Day 150 ±7	Visit 7 Day 180 ±30	Visit 8 Day 360 ±30
Enroll Union Health Funds	X								
Sign Data Transfer and Use Agreement (DUA)	X								
Interview Health Administrator	X								
Collect medical and pharmacy claims	X								X
Collect worker surveys	X							X	
Complete process assessment		X	X	X	X	X	X	X	X
Outcome Evaluation									
Opioid misuse and opioid use disorder from administrative claims	X								X
Opioid misuse from worker survey	X							X	
Self-reported lost work time from worker survey	X							X	
Self-reported willingness to seek help from worker survey	X							X	

2 INTRODUCTION

2.1 STUDY RATIONALE

The overall goal of this trial is to develop and test the feasibility of implementing best evidence workplace policy guidelines to reduce opioid use and misuse among working age people, the population primarily affected by the opioid crisis. This study will develop workplace opioid guidelines to reduce prescription opioid use, decrease opioid misuse and opioid use disorder (OUD), and improve health-related employment outcomes. After development of the guidelines, there will be a test of the feasibility of implementing these guidelines among construction workers, an occupational group at uniquely high risk of opioid use and fatal overdose. This project is significant because it will define best practices for workplace opioid policies, adapt these policies to a high-risk occupational group (construction workers), and evaluate the feasibility of implementing best practice workplace opioid guidelines via employment-based health insurance plans and employers. The research team brings together national leaders in workplace health, substance use disorders, and the construction industry to develop an intervention based on implementing new workplace opioid guidelines. This project is innovative because it targets a high-risk population through employment-linked health insurance and other workplace policies - an understudied yet potentially powerful target for intervention. This proposed project will provide critical foundational information to design and conduct a future randomized trial to implement and evaluate health insurance and employment policy guidelines among joint labor-management health funds in the building trades, and uses a Total Worker Health approach to address the influence of employment-linked policies and programs on addiction and recovery. Following formative work with input from subject matter experts, academics, and stakeholders from the construction industry, we will develop a set of Workplace Opioid Guidelines to Prevent Opioid and Substance Abuse for the Construction Trades. Then we will conduct a feasibility trial to evaluate the feasibility of implementing workplace opioid guidelines in the construction trades; define and collect measures of implementation and effectiveness. For this aim, three local union health funds will be recruited, and receive the Workplace Opioid Guidelines. Implementation of the Guidelines will be evaluated using the RE-AIM framework, with collection of data needed to measure effectiveness of the workplace opioid guidelines. The outcomes measures will be a) the health fund's adoption of policies and programs; b) opioid prescriptions, chronic opioid use, and OUD in health claims and pharmacy data; c) changes in knowledge, attitudes, and beliefs of employers, health fund administrators, and employees; and d) employee participation in employee assistance programs and healthcare recovery services.

2.2 BACKGROUND

People in their working years are the population most affected by the opioid crisis. The U.S. is in the middle of an opioid crisis, with annual drug overdose deaths increasing dramatically in the past decade, now exceeding the number of annual motor vehicle deaths and surpassing the number of deaths from HIV in any one year at the height of the HIV crisis. In 2017, 95% of the 70,067 U.S. drug overdose deaths

occurred among persons aged 18-64 years.[1] In the 2017 National Survey of Drug Use and Health,[2] 34% of respondents aged 18-64 years reported using prescription opioids for pain relief in the past year; of those using prescription opioids, 17% report misuse, meaning taking the opioids not as prescribed. Of those reporting opioid misuse or opioid use disorder (OUD), most were currently employed full-time or part-time (66% and 52% respectively). Since the majority of reported opioid use and misuse occurs among the employed working age population, workplace policies, programs, and health benefits should be considered important venues for intervention.

The relation between employment status and opioid use can be leveraged to prevent opioid misuse and promote recovery for opioid use disorder. Most working age people obtain health insurance through their employers, meaning that opioid prescribing practices and treatment for opioid misuse are influenced by employment-based insurance policies for a large proportion of the population at risk. Health-related disability from opioid use has effects on employment, with potential loss of earnings and access to health insurance for individuals and their dependents, and affects the larger economy. We propose to leverage workplace policies as a tool to prevent opioid misuse and aid in recovery for opioid use disorder.

Figure 1. Cascade of opioid use and employment outcomes

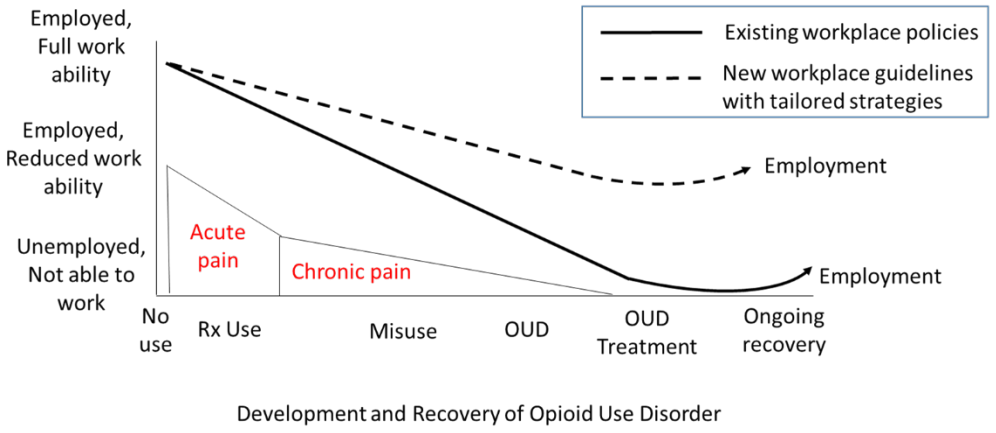


Figure 1 shows our conceptual model for how the transition from no use of opioids to initial use and subsequent transitions to misuse and OUD influence employment. The cascade of opioid use and misuse often starts with an initial prescription for acute pain, and the increase in opioid prescriptions in the U.S. parallels the opioid overdose epidemic.[3-5] Key goals include more judicious prescribing, and slowing or eliminating the transition from opioid use to OUD. In this conceptual model, corresponding work and disability outcomes are shown on the vertical axis. While every individual's experience is different, this simplified model points out how opioid use at every stage is linked to work ability and employment outcomes. There are multiple steps along this cascade where changes in employer-based policies can influence the development of opioid misuse, course of recovery, and other important health and economic outcomes. Our goal is to develop best practices for workplace guidelines

and policies around opioid use, and determine if these guidelines reduce misuse, improve recovery, and enhance employment status as suggested in Figure 1.

Opioid use poses major economic costs linked to employment. Though personal and social costs of the opioid crisis from mortality and morbidity are well known, employment costs are less appreciated. It is estimated that 46% of the total societal costs of prescription opioid misuse in the U.S. are workplace costs, driven by lost earnings from premature death, reduced compensation, and lost employment.[6] Costs to employers include lowered productivity from absenteeism, higher healthcare costs, and higher hiring and training costs resulting from turnover of skilled workers.[7] Manufacturing and construction firms in hard-hit states report shortages in the blue-collar labor market because otherwise qualified candidates are unable to pass mandatory drug screens.[8] Comparisons of labor force participation and unemployment suggest that more prime-aged men are dropping out of the labor force for health reasons, with OUD a major driver of work disability.[8, 9] Nationally, about 40% of change in labor force participation can be accounted for by prescription opioids, and labor force participation fell more among prime age men in areas where more opioids are prescribed.[10] These major economic costs related to opioid use can motivate employers to implement best practices regarding opioid use in the workplace.

The prescription opioid crisis poses a unique challenge for employers. Only 20% of employers surveyed by the National Safety Council (NSC) felt prepared to deal with issues related to opioid use and misuse.[11] Few employers provide training on drug issues to workers or supervisors, and the majority of employers implement strict drug free policies, terminating workers for the first failed drug test instead of implementing “second chance” policies and providing workplace recovery programs.[12-14] Lower availability of skilled workers, high worker replacement costs, and drug-related productivity losses suggest that current drug policies make little business sense, and exacerbate the social costs of opioid misuse.[15, 16] However, there is little guidance for employers on how to avoid escalation of prescription opioid use to OUD and to enhance recovery from OUD, and there are no generally applicable, validated instruments, regulations, or guidelines for determining job-specific impairment due to taking prescription medications.[17] The NSC has urged employers to take an active role toward opioids in the workplace for “saving jobs, saving lives, and reducing human costs”.[11] Recommended steps include partnering with health insurance, pharmacy benefit managers (PBM), and employee assistance program (EAP) providers, re-evaluating policies, testing for prescription opioid misuse, investing in management and employee education, and ensuring confidential access to help and treatment.[11] The National Institute for Occupational Safety and Health (NIOSH) has proposed a framework to be used by researchers and practitioners to address the opioid crisis, including determination of what guidance employers and medical providers need to prevent medically-prescribed opioid use from becoming opioid use disorder.[18]

Guidelines can help prevent new cases of opioid misuse and OUD. Recent CDC guidelines recommend limiting initial prescriptions of opioids for acute pain, and limiting the prescription of opioids for treatment of chronic non-cancer pain, in order to reduce future opioid misuse and OUD.[19] These recommendations are supported by analyses of state level Medicaid data and state level workers' compensation data.[20-22] Positive evidence directly relevant to workers comes from the implementation of guidelines in Washington State that limited opioid prescriptions beyond the acute period for work-related injuries.[23] Prior authorization requirements, with hard stops to prescription approval, resulted in a large and sustained drop in persistent opioid use and a reversal of lost work patterns related to opioid prescribing seen in the prior decade. Similar success was seen in Texas, where requirements for pre-authorization for many opioid medications led to a marked decrease in prescribing.[24] Several states have now taken steps to address opioid use in their workers' compensation systems by limiting opioid availability, educating health care providers on responsible opioid prescribing, and increasing awareness of the risks of OUD among injured workers.[25, 26] While some state-level plans have implemented these policies, most commercial insurance programs and health funds have not and this remains a significant gap.[27, 28] Most of opioid prescribing recommendations are written from a clinical or statewide insurer perspective and do not consider the influence that employers can have with prevention and support of chronic opioid use and misuse. There is increasing consensus that PBMs and employer based health funds also have an important role to play in improving health and limiting disability among their workforce by limiting the use of opioid medications for their employees, and by managing opioid use and claims more actively.[29] The challenges presented to employers about what to do regarding opioid use in the workplace and the role that practical guidelines can play motivates Aim 1 of this proposal. In **Aim 1**, we will identify best practice healthcare and employment policies regarding opioid use and misuse.

Construction workers are a large group at very high risk for opioid use and overdose. Rates of opioid use, misuse, and overdose vary widely by occupational group,[30-32] and construction workers are among the top three industries reporting substance misuse.[30] A NIOSH study based on surveillance of deaths from 21 states found that workers in construction had the highest proportional mortality rate from opioids among all occupations; construction workers were 6% of the working population but comprised 13% of all overdose deaths.[31] A study of death certificates in Massachusetts from 2011-2015 found that construction workers had the highest rate of overdose deaths (150.6/100,000 workers), a rate six times the average rate for all workers.[32] In this study, construction workers accounted for 24% of all opioid-related deaths among the working population. Construction workers stand out for both rate and number of opioid overdose deaths (13-24% of all deaths); there are several likely causes. First, construction is a dangerous and physically demanding industry, with high rates of workplace injuries, high rates of chronic pain, and higher rates of medical care for acute and chronic musculoskeletal disorders than the general working population.[33, 34] More injuries, more common chronic pain, and more medical encounters increase the likelihood of being prescribed opioid pain medication. Indeed, analyses

of national data have shown that rates of opioid overdose deaths are significantly higher among workers employed in industries and occupations with higher rates of work-related injuries and illnesses.[32] Second, construction work is often intermittent, and workers are usually paid only for time worked. Analysis of data across all occupations showed that opioid death rates are significantly higher among workers in occupations with lower availability of paid sick leave and lower job security, suggesting that the need to return to work soon after an injury or to work while in pain may contribute to high rates of opioid-related overdose deaths among workers in construction and other industries.[32] Third, in addition to having a higher chance of receiving an opioid prescription, construction workers have higher rates of alcohol and tobacco use than the general population,[35] putting them at higher risk of developing OUD after initiation of opioids. National organizations of construction unions and employers are becoming aware of this issue and have a strong incentive to address this crisis.[36, 37] Importantly, the structure of health benefits and employment of union construction workers makes this group well suited to test policy and guideline changes. In collaboration with construction industry leaders and union health plans, in **Aim 2** we will further characterize the opioid problem in construction and create guidelines on opioid use by adapting best-practice healthcare and employment policies to the unique needs of the construction industry.

Joint Labor-Management Health and Welfare Funds offer a unique opportunity to study workplace interventions. Unionized construction workers are typically covered by Taft-Hartley Health and Welfare Funds, which administer health insurance plans that cover approximately nine million U.S. adults.[38] These union health funds are coordinated by national unions, governed by joint labor-management boards at a regional or national level, and are funded by contributions from employers (contractors) and by the union members. These funds offer several advantages to study implementation of employment related guidelines. First, these funds cover a large proportion of the employed population at highest risk for opioid overdose. Second, eligibility for health benefits is linked to hours worked by each covered member, so data on both individual work hours and health care expenditures are available across multiple employers, allowing linkage of diagnoses and treatment to employment outcomes, regardless of change in employer by the member. Third, interventions to reduce tobacco use have been conducted across multiple Taft-Hartley plans,[38, 39] indicating the potential for conducting opioid policy intervention studies in a similar manner. As described below, our nationally recognized team of occupational health and addiction researchers has worked extensively with our local construction unions and health funds to analyze health claims and work hour data and to implement workplace health interventions. The structure of these union health funds and our strong working relationships with partner organizations support the feasibility of our proposal to obtain data and influence workplace health policies in this group.

In summary, there is an urgent need to develop and test the effectiveness of best practices employment policies and employment-linked health insurance plans in order to reduce OUD and

disability related to prescription opioid use. Employment-linked health programs and policies can reduce initial opioid use, decrease the risk for escalation from opioid use to misuse and OUD, and provide better treatment for persons with opioid misuse and OUD through early identification and appropriate treatment, including policies to maintain employment during recovery. Our proposed study will address NIDA's strategies and priorities to strengthen our understanding of the opioid epidemic, understand the effects of policies, use science to improve policy, improve the connection between research and practice, address policy barriers that affect access to the best evidence based treatment, and assess employment outcomes as a key health and social indicator.[40] To date, employers are still unsure of what to do, and there has been little or no study of implementing and evaluating evidence based practices to employment policies and programs. This proposal will help fill this gap.

2.3 RISK/BENEFIT ASSESSMENT

2.3.1 KNOWN POTENTIAL RISKS

From the IRB approved informed consent document:

There are no known risks and no costs to the participants. The participants will not be penalized or lose any benefits for which they would otherwise qualify and participation will not affect their job.

2.3.2 KNOWN POTENTIAL BENEFITS

Unions, employers, and health funds will gain greater awareness of the opioid epidemic and how they can address it in their workforce using the Workplace Opioid Guidelines that will be created in this project. Workers will learn of the risks of opioid use and be made aware of workplace programs and policies related to opioid use and treatment. Health claims, pharmacy data, and work hours data are important for showing the improvement in health (changes in number of opioid prescriptions, and number of workers with opioid use disorder) and employment outcomes (change in lost work hours/days in work hour records) after the Health Fund adopts policies and programs from the guidelines. These changes will help determine the effectiveness of these guidelines.

2.3.3 ASSESSMENT OF POTENTIAL RISKS AND BENEFITS

The information from participation will aid in assessing the benefit of the intervention and may guide future changes to the health fund's decision for policies, programs, and benefits offered to union members of the health fund. The potential risks to participants are unlikely and minimal; the benefits to them and the construction industry outweigh the risks.

3 OBJECTIVES AND ENDPOINTS

The objective of this trial is to evaluate the feasibility of implementing the workplace opioid guidelines in union health funds of the construction trades and measure the implementation and effectiveness of changes made to the union health fund policies, programs, and benefits made in response to using the workplace guidelines. We will assess implementation using process measures recorded over a 6-month period of time using the REAIM framework. We will assess effectiveness by measuring changes in the administrative claims and from worker surveys collected from members.

The primary outcomes will show a change in a) the proportion of workers with opioid misuse, opioid use disorder and opioid overdose collected from administrative data over a 4 year period (3-years prior to the intervention, and one-year of the intervention implementation) and b) the proportion of workers with opioid misuse measured from worker surveys from each of the union health funds over a 6-month period after start of implementation of the intervention.

The secondary outcomes will show a change in a) the proportion of workers with lost time measures and b) the proportion of workers willing to seek help measured from worker surveys from each of the union health funds, and collected over a 6-month period after start of the implementation of the intervention.

The feasibility trial will be deemed successful if the study successfully recruits three union health funds, and collects measures to assess the implementation of the intervention and effectiveness of health and behaviors during the trial period. This is not a randomized trial, nor is the study powered to expect statistical changes in the outcome measures. The benefit for conducting the feasibility trial is to test all procedures in the specific population to guide plans for a future randomized trial.

OBJECTIVES	ENDPOINTS	JUSTIFICATION FOR ENDPOINTS
Primary		
The objective of this trial is to evaluate the feasibility of implementing the workplace opioid guidelines in union health funds of the construction trades by measuring the implementation and effectiveness of health,	The primary endpoint(s) include a change in a) Proportion of workers with opioid misuse, opioid use disorder and opioid overdose from administrative data and b) Proportion of workers with opioid misuse from worker surveys	Administrative claims data covers all the majority of the union members as most members are eligible for these benefits. Therefore, the data more accurately reflects the proportion of the workforce who have misused opioids or received a diagnosis for opioid use

OBJECTIVES	ENDPOINTS	JUSTIFICATION FOR ENDPOINTS
behaviors, and attitudes toward opioids.		disorder. These metrics are useful outcomes to show the longer term impact of policies and benefits provided through the union health fund.
Secondary		
The secondary objective(s) are goals that will provide further information on the use of the intervention.	Secondary endpoints include a change in behaviors and attitudes in response to the intervention and will include a) Proportion of workers with lost time from worker surveys and b) the proportion of workers who are willing to seek help from opioid misuse from worker surveys.	The worker survey data shows the perceived behaviors reported by the respondents. These respondents will be compared to the demographics of the population to explore potential bias by workforce characteristics. These outcomes show the intermediate impact of policies and programs provided through the union health fund.

4 STUDY DESIGN

4.1 OVERALL DESIGN

This study is a feasibility trial testing the ability to recruit an appropriate population (the union health fund), collect outcome measures relevant to change from using the intervention (through administrative claims data and collection of worker surveys), and process measures of implementation over a period of time considered appropriate to implement organizational changes guided by the intervention.

This is a feasibility trial evaluating procedures and success to enroll the health funds, collect data, monitor implementation of the intervention, and assess change in outcome measures in a 6-month period of time.

The health funds recruited to participate in this study will be from a convenience sample using a snowball method of recruitment. The study does not involve randomization.

This is a single arm trial with pre-post measures of change in the outcomes over a 6-month period of time. The study will attempt to collect 12-month measures if time allows.

This will be a single-site trial, as all data will be collected by the research team, although the invitations for worker survey participation will be distributed through messages from the participating union health fund. The administrative data will be shared with the Washington University researchers through a data transfer and use agreement.

The intervention is the Workplace Guidelines to Prevent Opioid and Substance Abuse for the Construction Trades. These guidelines offer ideas, resources and organizational assessments on how to develop or advance a substance use prevention program targeting policies, programs, and benefits under the employer, union and their health and welfare funds.

4.2 SCIENTIFIC RATIONALE FOR STUDY DESIGN

This is a feasibility trial to evaluate the study procedures and feasibility of recruiting and collecting the data for a future trial. As such, it was important to recruit a small number of groups from the population, and collect data for the intended period of time, but there was no need for a comparator group for the intended goal of this study.

4.3 JUSTIFICATION FOR INTERVENTION

The construction industry has one of the highest overdose rates of any industry, with the majority of those overdoses from opioids. The industry has one of the highest injury rates with many workers suffering from chronic disorders incurred from work activities. Prescription opioids have been prescribed to treat these chronic disorders. The union health fund provides the health benefits and health programs for the union members. There is a need to provide union health funds with guidance on policies, programs and benefits that may help prevent initial use of prescription opioids and treatment for members with opioid misuse and opioid use disorder. The Workplace Guidelines to Prevent Opioid and Substance Abuse for the Construction Trades are evidence-based guidelines designed for use by the construction industry. The guidelines are intended to be used by construction organizations to assess their need, and provide guidance and off the shelf resources that may be tailored for use by the organization. The overall goal of the guidelines are to reduce the incidence of opioid misuse and opioid use disorder, missed days of work due to opioid use, and increase members willingness to seek treatment if they need help.

4.4 END-OF-STUDY DEFINITION

The end-of-study is defined as the collection of 6-months (or 12-months) of data has been collected from all enrolled union health funds OR the end of the funding period (including no-cost extension time). Since

this is a feasibility trial, it is not known if three organizations will be successfully recruited and if it will be feasible to collect all data for outcomes (including administrative claims and workers surveys) by the end of the funding period.

5 STUDY POPULATION

The study population are members of the participating union health funds from the construction trades. All of the member workers of the enrolled health funds will be considered eligible participants for the study. For administrative claims data, this will include all members who were benefits eligible from May 2019 through the end of the study period (May 2023). For worker surveys, all active members of the union will be eligible and invited to participate. There will be no exclusions from eligibility.

The members of the union health funds will be at least 18 years of age, with no maximum age limit. The study population characteristics will reflect the demographics of the workforce, with approximately 8% female and 10% non-Caucasian.

5.1 INCLUSION CRITERIA

All members of the participating union health funds will be eligible for inclusion in the study. For administrative data, this will include benefits-eligible members of the union health fund from May 2019-May 2023. For worker surveys, this will include members of the union from May 2022-May 2023.
The members will be at least 18 years of age, as that is an age requirement of the union. There are no other demographic restrictions.

5.2 EXCLUSION CRITERIA

There is no exclusion criteria for participation among the members of the participating union health funds. Each participating health fund must sign a data transfer and use agreement to provide the research team access to the administrative claims data and share requests to the members to complete a worker survey. Participating health funds must also be willing to review the workplace opioid guidelines for trial and to have regular meetings with the research team to share their plans related to using the intervention (guidelines).

Union health funds that do not complete a data transfer and use agreement, and are unwilling to facilitate surveying their members and are unwilling to trial the intervention will be excluded from participation.

5.3 LIFESTYLE CONSIDERATIONS

N/A

5.4 SCREEN FAILURES

There are no screening requirements or restriction from participation.

5.5 STRATEGIES FOR RECRUITMENT AND RETENTION

Recruitment of health funds will be communicated through intermediaries from union leadership and union organizations within the construction trades. Prior to the start of the study, three union health funds had provided verbal consent to participate. Each enrolled health funds must be willing to participate in all facets of the project, including data collection, and trial of the intervention.

The research team will work with each health fund to identify potential means to invite members to complete the worker survey. Possible methods for survey recruitment include distributing an online survey link via email or text message, posting a survey link in union newsletters, or collecting paper surveys at union meetings or training schools. Access to the survey will be provided through a QR code or electronic link to a Redcap survey which is a secure, web-based data collection tool. Worker survey data collection will be cross-sectional in nature and therefore we do not plan to follow individual workers overtime. Participants will be given the option to refuse participation without any repercussions to their employment, health benefits, or standing in the union.

The survey will take approximately 10 minutes to complete. There will be no incentives offered to participate.

Each health fund will seek completion of 300 surveys at two time points, baseline and 6-months for a total of 900 surveys from three health funds. The expected enrollment will reflect the demographics of the population, with approximately 8% females, and 10% non-Caucasian. The age range will be from 18 years with no upper age limit, although the majority of the sample will range from 18-65 years. The data from this trial will be used to compute statistical power for a future study, should the feasibility trial be successful.

6 STUDY INTERVENTION(S) OR EXPERIMENTAL MANIPULATION(S)

6.1 STUDY INTERVENTION(S) OR EXPERIMENTAL MANIPULATION(S) ADMINISTRATION

6.1.1 STUDY INTERVENTION OR EXPERIMENTAL MANIPULATION DESCRIPTION

The intervention is a set of evidence-based guidelines developed by the research team, with formative work and review by subject matter experts, and stakeholders from the construction industry, many of whom have implemented the policies, programs and benefits suggested in the guidelines. The intervention will provide recommendations across the continuum of disease from prevention (no opioid use), through treatment and recovery. It will also cover the topics for different roles including human resources, upper management, front-line supervisors and healthcare providers involved with the monitoring and treating drug-related issues.

The intervention is intended to be used by the organization, union health fund that provides the health benefits and programs for the union members. The health fund has the fiduciary responsibility to provide health policies, programs, and benefits to maximize the health of the members. The health fund must receive approval for health initiatives from the Labor-Management board of trustees. The target of the intervention is the union members, who are the subjects of the health fund policies, programs, and benefits. The outcomes of the study will be measured by the clinical health claims, and self-reported behaviors of the union members.

6.1.2 ADMINISTRATION AND/OR DOSING

The health fund administrator will meet with the Principal Investigator from the research team to participate in a baseline interview to explore the current policies, programs and benefits offered by the health fund to protect the members from opioid misuse and opioid use disorder. The baseline health fund interview will cover the company background, attitudes and beliefs toward opioids, health fund policies and programs, (written policies, drug testing, medical health benefits, behavioral health benefits, pharmacy benefits, member assistance program, legal considerations, employee education on opioid risks, supervisor training related to opioid use, culture of care of the union, collective bargaining agreement related to substance and opioid use disorder, and plans to change policies and programs related to opioids and substance use). The baseline interview guide can be found in the Additional Information section: R34 Aim 3 Health Fund Baseline Interview Guide_051222.

After all baseline data collection is completed, the intervention will be initiated. The intervention will include one-hour monthly meetings by Zoom scheduled at a convenient time for the health fund

administrator and the Principal Investigator. At the initial meeting, the health administrator will be introduced to the guidelines and asked about what plans they currently have to change. A copy of the guidelines used in the trial can be found in the Additional Information section: v3.0_WashU_Opioid Prevention Program in Construction_07062022.

At each follow-up monthly meeting, the researcher will ask information from the Monthly Health Fund meeting script_follow up found in the Additional Information section. The intervention meetings will be held over a 6-month period.

The meetings will provide an opportunity to discuss barriers to implementation and share new ideas and strategies. The health fund administrator will be encouraged to build a team to support the development and implementation of the plan ideas (as discussed in the guidelines). The meetings will also provide an opportunity to discuss the analysis of the administrative claims, and results of the worker surveys.

6.2 FIDELITY

6.2.1 INTERVENTIONIST TRAINING AND TRACKING

The intervention will be delivered by the Principal Investigator. Each meeting will cover the progress the health administrator has made toward implementing their plan, and whether the health administrator found new ideas or resources for their plan from the guidelines. The follow-up monthly meeting will be scheduled at the end of the prior meeting with reminders sent out to the health administrator 2 days in advance of the meeting. Interim communications will be made by email as needed.

6.3 MEASURES TO MINIMIZE BIAS: RANDOMIZATION AND BLINDING

This study does not involve randomization nor blinding.

6.4 STUDY INTERVENTION/EXPERIMENTAL MANIPULATION ADHERENCE

Monthly meeting attendance will be logged in OneNote (a project management log) with cancellations and reasons for cancellations as this will be important information to consider for the feasibility of a future trial.

6.5 CONCOMITANT THERAPY

N/A

6.5.1 RESCUE THERAPY

N/A

7 STUDY INTERVENTION/EXPERIMENTAL MANIPULATION DISCONTINUATION AND PARTICIPANT DISCONTINUATION/WITHDRAWAL

7.1 DISCONTINUATION OF STUDY INTERVENTION/EXPERIMENTAL MANIPULATION

This feasibility trial is designed to learn what barriers exist for participation in the trial, across all study activities throughout the study process:

- the initial recruitment of health funds,
- enrollment of health funds that complete the study eligibility (data transfer and use agreement)
- collection of baseline data including administrative claims and worker surveys,
- completion of the baseline interview with the health administrator (about existing policies, programs, and benefits related to substances and opioids),
- attendance to monthly intervention meetings for 6 months,
- follow-up data collection on worker surveys at 6-months,
- final data collection at 12-months (time permitting).

The feasibility trial will be discontinued at the end of the 6-month intervention, or if all enrolled health funds drop out of the study, or if no health funds are enrolled with adequate time in the study period remains to complete the intervention (of at least 6-months).

7.2 PARTICIPANT DISCONTINUATION/WITHDRAWAL FROM THE STUDY

A health fund may be withdrawn from the study if they stop participating or request to drop out.

No participant will be withdrawn from the study. Participants may choose to not complete the worker survey. The researchers may drop a participant's survey from analysis if more than half of the items are not completed.

7.3 LOST TO FOLLOW-UP

The health fund may be lost to follow up if they stop attending meetings.

The participant data is collected as cross-sectional data so no participants will be lost to follow-up.

8 STUDY ASSESSMENTS AND PROCEDURES

8.1 ENDPOINT AND OTHER NON-SAFETY ASSESSMENTS

At baseline, recruited union health funds will be asked to agree to several activities before they are enrolled in the study. These include 1) sign a data transfer and use agreement (DUA) with the Washington University research team, 2) willingness to review the Workplace Guidelines to Prevent Opioid Abuse in the Construction Trades" and implement changes to their organizational policies, programs, and benefits to reduce opioid misuse and opioid use disorder among their members, 3) participate in a series of study-related meetings to discuss their current program and plan for changes, 4) provide administrative claims as outlined in the DUA, and 5) communicate invitation to all members to complete a worker survey for the study. The partners were asked to enroll for a minimum of 6-months but preferable 12-months of activities.

Once the DUA was signed and the union health fund was enrolled, and the administrator or their representative was asked to participate in an interview to discuss their knowledge and attitudes toward OUD, describe their existing workplace opioid policies and programs and the date of adoption or implementation, and any changes to their policies or programs underway or plans for future changes. The interview also asked questions about participation rates in programs for workers, adherence to and enforcement of policies, and the methods for disseminating programs. See "R34 Aim 3 Health Fund Baseline Interview" in the Additional Information Section.

The other baseline data collection included the administrative claims data and member "worker surveys".

The union health fund administrator was asked to share a pre-specified set of variables from their medical and pharmacy claims and covering the period from May 2019-May 2022. See the list of requested variables from the administrative datasets in the Additional Information Section in the file called "Data Variables List for opioids project_052322". The study team had the administrator to share a sample of their variables for review by study team. Once the variables were agreed upon, the administrator was asked to share the de-identified datasets with a linking variable so the data could be linked without using an employee id or social security number. The data would be shared under a waiver of consent. All data was stored on a secure network. Only members of the research team had access to the data. The statistician and PI worked with the health fund staff to insure they had a good understanding of each variable (and units of each) and were able to create a database that aligned with the variables needed for analysis. See the data management section and analysis plans below.

The participating union health funds were asked to distribute a link for a Redcap survey to a representative sample of their members to collect 300 completed surveys. All members of the union were eligible but member participation was voluntary. The health fund recruited the member using methods determined by them to be most successful to reach the members and encourage participation. These methods included email, newsletter, and verbal invitations. Members were invited to participate but they were allowed to take as much time as they want to consider participation in the study. The health fund did not know which members participated in the survey. The surveys were accessed through a QR code or survey link shared through health fund communications. The Redcap QR code or survey link could be accessed through a computer or on an apple or android device. The first page of the survey showed the consent information (see Consent Document). The member had the option to consent by advancing to the survey or to decline by exiting the survey. There was no written consent and participants were not paid to participate. The brief survey asked about the members' knowledge of their health fund's benefits and policies, attitudes toward use of opioids by self and others, employment status, participation in union programs including Employee Assistance Program (EAP), and health-related productivity using widely used survey instruments. We did not collect names or any other identifying information and the survey took about 5-10 minutes to complete. A copy of the members "R34 AIM 3 Worker Survey" may be found in the Additional Information Section.

The data was collected in the Redcap software program at Washington University. The electronic information was stored on a password protected, secured server at Washington University. Only member of the research team had access to the data. Only summarized information from the worker surveys was shared with the health fund. During the period of data collection, the research team reviewed the demographics and counts of the survey, to encourage continued data collection if the desired number of surveys was not collected or the data did not represent the characteristics of the workforce.

After completion of the baseline data collection, the research team met with the union health fund administrator to introduce the intervention. The guidelines are shown in the Additional information section (v3.0_WashU_Opioid Prevention Program in Construction_07062022). The team and health fund met on a recurring monthly basis for 6 months. The goal of the meetings was to discuss the health fund's plan for changes to their opioid prevention program. A series of questions were discussed to review the progress on the plan, and to discuss how the guidelines were used to support the planned changes. Following the items in the REAIM framework, the discussion included "what" was changed or planned to be changed, the implementation strategies for adoption of the changes, and barriers and success for implementing the change. All meetings were virtual (primarily over Zoom) and scheduled a month in advance, with a reminder sent out 2 days before the meeting.

Data Management: The following are the list of steps taken to manage the administrative health claims and worker surveys. The final databases were used to compute the results for outcomes.

See the "Data management of Administrative Health Claims and Worker Surveys" in the Additional Information section.

8.2 SAFETY ASSESSMENTS

N/A

8.3 ADVERSE EVENTS AND SERIOUS ADVERSE EVENTS

8.3.1 DEFINITION OF ADVERSE EVENTS

This protocol uses the definition of adverse event from 21 CFR 312.32 (a): any untoward medical occurrence associated with the use of an intervention in humans, ***whether or not considered intervention-related***.

8.3.2 DEFINITION OF SERIOUS ADVERSE EVENTS

Should an event be reported to the research team, it will be referred to the IRB for classification as to the severity of the event.

8.3.3 CLASSIFICATION OF AN ADVERSE EVENT

8.3.3.1 SEVERITY OF EVENT

This study will evaluate a group-level intervention of an organization's opioid-related policies and procedures delivered by union health funds, and disseminated to their membership. We will not collect individual identifiers, thus we will likely not have data on Adverse Events or Serious Adverse Events related to the intervention.

8.3.3.2 RELATIONSHIP TO STUDY INTERVENTION/EXPERIMENTAL MANIPULATION

In the event that we learn of an adverse event, we will adhere to the following reporting timeframes:

- Adverse Events will be reported to the NIDA Program Officer (PO) as part of the annual progress report. Although we will not know the identity of the individual involved, in the report we will describe the event, when it occurred, and the outcome (if known).

- Serious/Unanticipated Adverse Events will be reported to the NIDA PO within 24 hours, with a follow-up on the status of the event within 72 hours later, although it is unlikely an individual will experience a SAE as a result of participation in the study.
- We will also report all AEs to the IRB within 10 working days of when we become aware of the event, as required by the IRB.
- It will likely be difficult to know if the event is related to the intervention, however the event will be reported if the research team is notified.

8.3.3.3 EXPECTEDNESS

It is unlikely that an Adverse Event will be related to the intervention, as the implementation of the intervention is at the discretion of the union health fund and likely subject to the Trustee Board Approval. However, if an event does occur, it will be reported.

8.3.4 TIME PERIOD AND FREQUENCY FOR EVENT ASSESSMENT AND FOLLOW-UP

- Serious/Unanticipated Adverse Events will be reported to the NIDA PO within 24 hours, with a follow-up on the status of the event within 72 hours later, although it is unlikely an individual will experience a SAE as a result of participation in the study.
- We will also report all AEs to the IRB within 10 working days of when we become aware of the event, as required by the IRB.

8.3.5 ADVERSE EVENT REPORTING

Serious/Unanticipated Adverse Events will be reported to the NIDA PO.

We will also report all AEs to the IRB.

8.3.6 SERIOUS ADVERSE EVENT REPORTING

Serious/Unanticipated Adverse Events will be reported to the NIDA PO.

We will also report all AEs to the IRB.

8.3.7 REPORTING EVENTS TO PARTICIPANTS

N/A

8.3.8 EVENTS OF SPECIAL INTEREST

N/A

8.3.9 REPORTING OF PREGNANCY

N/A

8.4 UNANTICIPATED PROBLEMS

8.4.1 DEFINITION OF UNANTICIPATED PROBLEMS

This protocol uses the definition of Unanticipated Problems as defined by the Office for Human Research Protections (OHRP). OHRP considers unanticipated problems involving risks to participants or others to include, in general, any incident, experience, or outcome that meets **all** of the following criteria:

- Unexpected in terms of nature, severity, or frequency given (a) the research procedures that are described in the protocol-related documents, such as the Institutional Review Board (IRB)-approved research protocol and informed consent document; and (b) the characteristics of the participant population being studied;
- Related or possibly related to participation in the research ("possibly related" means there is a reasonable possibility that the incident, experience, or outcome may have been caused by the procedures involved in the research); and
- Suggests that the research places participants or others at a greater risk of harm (including physical, psychological, economic, or social harm) than was previously known or recognized.]

8.4.2 UNANTICIPATED PROBLEMS REPORTING

The investigator will report unanticipated problems (UPs) to the reviewing Institutional Review Board (IRB) and to the Data Coordinating Center (DCC)/lead principal investigator (PI). The UP report will include the following information:

- Protocol identifying information: protocol title and number, PI's name, and the IRB project number

- A detailed description of the event, incident, experience, or outcome
- An explanation of the basis for determining that the event, incident, experience, or outcome represents an UP
- A description of any changes to the protocol or other corrective actions that have been taken or are proposed in response to the UP

To satisfy the requirement for prompt reporting, UPs will be reported using the following timeline:

- UPs that are serious adverse events (SAEs) will be reported to the IRB and to the DCC/study sponsor/funding agency within 24 hours of the investigator becoming aware of the event
- Any other UP will be reported to the IRB and to the DCC/study sponsor/funding agency within 7 days of the investigator becoming aware of the problem
- All UPs should be reported to appropriate institutional officials (as required by an institution's written reporting procedures), the supporting agency head (or designee), and the Office for Human Research Protections (OHRP) within 30 days of the IRB's receipt of the report of the problem from the investigator

8.4.3 REPORTING UNANTICIPATED PROBLEMS TO PARTICIPANTS

N/A

9 STATISTICAL CONSIDERATIONS

9.1 STATISTICAL HYPOTHESES

This is a feasibility trial to evaluate the ability to recruit and enroll health funds, collect endpoint data for primary and secondary outcome measures, and to collect process measures related to implementation of the intervention with three health funds. There is no formal hypothesis testing in this trial although we will calculate descriptive statistics at baseline and follow-up (6-months) to show change over time. The data will be used to compute statistical power for a future R01 if the current study is successful.

- Primary Endpoint(s):

a) We will calculate the Proportion of workers with opioid misuse, opioid use disorder and opioid overdose using administrative data. We will assess change of opioid misuse and opioid use disorder at 6 months following delivery of the intervention

b) We will calculate the proportion of workers with opioid misuse from worker surveys. We will assess change in opioid misuse at 6 months following delivery of the intervention.

- Secondary Endpoint(s):

a) We will calculate the proportion of workers with lost time using worker surveys. We will assess change in reported lost time at 6 months following delivery of the intervention.
b) We will calculate the proportion of workers reporting willingness to seek help for opioid abuse using worker surveys. We will assess change in reported willingness to seek help at 6 months following delivery of the intervention.

9.2 SAMPLE SIZE DETERMINATION

There were no power sample calculations for this study as it is a feasibility pilot study. The data generated from this study will inform the power calculations for a future R01, if the pilot study is successful.

We estimated the number of participants needed for surveys from the sample sizes needed to document change over time for similar behavior outcomes from past studies. The data will be collected at two points in time (baseline and 6-months after start of the intervention). We will collect cross-sectional data, and calculate the group-level change pre-post intervention. We will collect 300 surveys for each participating health fund at baseline and at 6-months post-intervention, and at 12-months time permitting. This will be a minimum of 1800 surveys, or 2700 surveys time permitting.

We estimated the number of participants for the administrative data from the membership sizes of union health funds from past studies. In past studies, union health fund members have covered 10,200 members. We estimate we will collect administrative data for 10,200 members for each of three health funds (total of 30,600) members.

9.3 POPULATIONS FOR ANALYSES

We will calculate descriptive statistics for the full population of the administrative data. The data will include active and retired members from the benefits-eligible group of the period May 2019-May 2022. We will include any member who was continuously benefits-eligible but censor them after they drop eligibility or don’t self-pay to continue coverage. All retired members who self-pay will also be included I the analyses.

We will calculate descriptive statistics for those members who complete the worker survey. We will compare the demographics (age, gender, race) of those who completed the survey to the union

membership to see if the two groups (surveyed versus union members) have similar characteristics. This will help assess the feasibility of the survey recruitment methods to obtain a representative sample.

9.4 STATISTICAL ANALYSES

9.4.1 GENERAL APPROACH

Outcome data is derived from the administrative claims and worker surveys.

Administrative claims will be collected over two periods (06/01/2019-05/31/22) and (06/01/2022-05/31/2023). All three outcomes of interest are primary outcomes. The analysis will examine the group level change of the outcome, adjusting for length of time in each period, to show a reduction in impaired health or behaviors that may be due to implementation of the intervention.

Worker surveys will be collected by member worker surveys from each health fund at two points in time. The baseline, before implementation of the intervention, and at 6-months after start of implementation. All members will be invited to complete a survey. The desired sample is 300 surveys per health fund at each time point. The outcomes are composed of one or more items in the surveys. Group level statistics will be computed as the proportion of members with a positive response to each outcome. The change in proportion by time point may be due to implementation of the intervention.

9.4.2 ANALYSIS OF THE PRIMARY ENDPOINT(S)

a) Administrative Claims
    a. Outcome variables of interest
        i. Opioid misuse- "Overlapping Rx" OR "Multiple Rx on same day, different provider"
        ii. Chronic opioid use- more than 60 days supply in a 90 day window
        iii. Opioid use disorder- ICD-10 T40* (Poisoning by, adverse effect of and underdosing of narcotics and psychodysleptics) &/Or ICD-10 F11* (opioid related disorders) &/or prescribed MAT (Drug name contained "methadone" or "buprenorphine"; picks up buprenorphine, suboxone, zubsolv, naltrexone, methadone, narcan, and vivitrol)
    b. Compute statistics for baseline period (06/01/2019-05/31/2022) and follow-up (06/01/2022-05/31-2023)

i. Categorical data will be presented as N (%), continuous data as median (25th, 75th %tile)

c. Run comparisons between baseline and follow-up time points
   i. Comparisons involving two categorical variables will be made using Fisher's exact test
   ii. Comparisons involving a continuous variable and a categorical variable will be made using Wilcoxon Rank Sum test or Kruskal Wallis test

b) Worker Survey
   a. Outcome variable of interest
      i. Opioid misuse- Participant responded yes to one of the following two questions:
         1. Did you use the pain medication more than prescribed, or for a longer period than prescribed? [pnmed_longer]x
         2. Have you used prescription pain medications that were prescribed to someone else? [pnmed_othersrx]x

   b. Compute the change at 6 months post-intervention (change of opioid misusep) of group-level data collected from groups of health

All endpoints are independent outcomes.

9.4.3 ANALYSIS OF THE SECONDARY ENDPOINT(S)

For each secondary endpoint:

Worker Survey

a) Proportion of workers with lost time. Responded yes to one of the questions below:
   a. Please refer to the last 12 months for the following questions: Did you miss any days of work because of your pain or discomfort? [missday_pn]x
   b. In the past 12 months, have you gone to work intoxicated, high, or recovering from the night before? [missday_intox] [*possible reduced productivity]x

b) Proportion of workers who are willing to seek help. Responded yes to one of the questions below:

   Through their workplace:
   a. If I was struggling with a substance use problem... I would be willing to seek help from my supervisor or someone in human resources [help_sup_hr]x
   b. If I was struggling with a substance use problem... I would be willing to seek help from a professional (MAP or behavioral health) [help_prof]x

c. If I was struggling with a substance use problem... I would be willing to ask a trusted coworker for help [help_coworker]x
d. Have you attended Alcoholics or narcotics anonymous (AA/NA) group [aa_na_use]x
e. Have you met with the specialist? [peer_supp_use]x

Seek professional help (employee assistance program or behavioral health)

f. If benefit is available…. Union sponsored Member assistance program (MAP) [eap]x; Have you used these benefits? Member assistance program (MAP) [eap_use]x
g. If benefit is available…. Behavioral health (counseling) [behav_health]x; Have you used these benefits? Behavioral health (counseling) [behav_health_use]x

c) Compute the change at 6 months post-intervention (change of lost time and change in willingness to seek help) of group-level data collected from groups of health fund members.

All endpoints are independent outcomes.

9.4.4 SAFETY ANALYSES

N/A

9.4.5 BASELINE DESCRIPTIVE STATISTICS

N/A

9.4.6 PLANNED INTERIM ANALYSES

N/A

9.4.7 SUB-GROUP ANALYSES

If there is adequate data collected for more than one health fund, we will stratify the data by health fund group to assess the similarity and differences in the demographics of each of the health fund characteristics (age, gender, race) and by the primary and secondary endpoints. We will use these results to help inform future decisions toward conducting an R01 trial.

9.4.8 TABULATION OF INDIVIDUAL PARTICIPANT DATA

Administrative claims data will be combined using a unique linking variable. The claims data will include the date of service in order to identify the time point. Three years of data will be collected at baseline (May 2019-May 2022) and one year of data for follow up (June 2022-May 2023). The data will be analyzed as group level data by time point.

The worker surveys will be analyzed as group level data by time point. The data will not be tabulated by individual participants, nor will the administrative data be linked to the worker survey data.

9.4.9 EXPLORATORY ANALYSES

There are no planned exploratory analyses in this study.

10 SUPPORTING DOCUMENTATION AND OPERATIONAL CONSIDERATIONS

10.1 REGULATORY, ETHICAL, AND STUDY OVERSIGHT CONSIDERATIONS

10.1.1 INFORMED CONSENT PROCESS

10.1.1.1 CONSENT/ASSENT AND OTHER INFORMATIONAL DOCUMENTS PROVIDED TO PARTICIPANTS

Consent forms describing in detail the study intervention, study procedures, and risks will be given to the participant and written documentation of informed consent will be completed prior to starting the study intervention. The consent document is submitted with this protocol: materials are submitted with this protocol: InformedConsent_05052022.

10.1.1.2 CONSENT PROCEDURES AND DOCUMENTATION

The Health Fund organization will provide a Data Transfer and Use Agreement to share their administrative data with the researchers. The data will be de-identified when it is received by the health fund. The multiple datasets will include a unique linking variable to link the records of participants. Since there will be no identifiable data in the administrative data, informed consent will be waived as approved by the IRB. The administrative data will be shared through a secure sharefile, and stored on a secure network at Washington University. Only members of the research team will have access to the data.

The workers survey data collection will include an informed consent. Each participant will receive a QR code or link to a Redcap survey. Once a participant clicks on the Redcap survey link, they will see the consent information and from there will have the option to participate by continuing to the start the survey. Participants who do not want to participate will be told to exit the screen. Since the survey will capture cross-sectional data and the data will be analyzed at the group level, there will be no need to link the survey data in follow-up data collection.

10.1.2 STUDY DISCONTINUATION AND CLOSURE

This study may be prematurely terminated if there is sufficient reasonable cause. If the study is prematurely terminated, the Principal Investigator (PI) will promptly inform the participating health funds, the Institutional Review Board (IRB), and sponsor/funding agency and will provide the reason(s) for the termination.

Circumstances that may warrant termination or suspension include, but are not limited to:

- The participating health funds stop participating or ask to be dropped from the study
- Determination of futility

10.1.3 CONFIDENTIALITY AND PRIVACY

Participant confidentiality and privacy is strictly held in trust by the participating investigators, their staff, the safety and oversight monitor(s), and the sponsor(s) and funding agency. This confidentiality is extended to the data being collected as part of this study. Data that could be used to identify a specific study participant will be held in strict confidence within the research team. No personally-identifiable information from the study will be released to any unauthorized third party without prior written approval of the sponsor/funding agency.

All research activities will be conducted in as private a setting as possible.

The study monitor, other authorized representatives of the sponsor or funding agency, representatives of the Institutional Review Board (IRB), regulatory agencies or representatives from companies or organizations supplying the product, may inspect all documents and records required to be maintained by the investigator, including but not limited to, medical records (office, clinic, or hospital) and pharmacy records for the participants in this study. The clinical study site will permit access to such records.

The study participant's contact information will be securely stored at each clinical site for internal use during the study. At the end of the study, all records will continue to be kept in a secure location for as

long a period as dictated by the reviewing IRB, Institutional policies, or sponsor/funding agency requirements.

Study participant research data, which is for purposes of statistical analysis and scientific reporting, will be transmitted to and stored on the password protected network of Washington University Box. This will not include the participant's contact or identifying information. Rather, individual participants and their research data will be identified by a unique study identification number. The study data entry and study management systems used by research staff at Washington Unviersity will be secured and password protected. At the end of the study, all study databases will be de-identified and archived on the Washington University Box drive.

Measures Taken to Ensure Confidentiality of Data Shared per the NIH Data Sharing Policies
It is NIH policy that the results and accomplishments of the activities that it funds should be made available to the public (see *https://grants.nih.gov/policy/sharing.htm*). The PI will ensure all mechanisms used to share data will include proper plans and safeguards for the protection of privacy, confidentiality, and security for data dissemination and reuse (e.g., all data will be thoroughly de-identified and will not be traceable to a specific study participant). Plans for archiving and long-term preservation of the data will be implemented, as appropriate.

Certificate of Confidentiality
To further protect the privacy of study participants, the Secretary, Health and Human Services (HHS), has issued a Certificate of Confidentiality (CoC) to all researchers engaged in biomedical, behavioral, clinical or other human subjects research funded wholly or in part by the federal government. Recipients of NIH funding for human subjects research are required to protect identifiable research information from forced disclosure per the terms of the NIH Policy (see *https://humansubjects.nih.gov/coc/index*). As set forth in 45 CFR Part 75.303(a) and NIHGPS Chapter 8.3, recipients conducting NIH-supported research covered by this Policy are required to establish and maintain effective internal controls (e.g., policies and procedures) that provide reasonable assurance that the award is managed in compliance with Federal statutes, regulations, and the terms and conditions of award. It is the NIH policy that investigators and others who have access to research records will not disclose identifying information except when the participant consents or in certain instances when federal, state, or local law or regulation requires disclosure. NIH expects investigators to inform research participants of the protections and the limits to protections provided by a Certificate issued by this Policy.

10.1.4 FUTURE USE OF STORED SPECIMENS AND DATA

Worker survey data collected for this study will be stored at the Institute for Social Research (ICPSR) at University of Michigan Data Coordinating Center. After the study is completed, the de-identified, archived data will be transmitted to and stored at the National Addiction & HIV Data Archive Program (NAHDAP), for use by other researchers including those outside of the study. Permission to transmit data to a publically shareable data file has been included in the informed consent.

10.1.5 KEY ROLES AND STUDY GOVERNANCE

There is no independent safety monitor for this study. The Principal Investigator is responsible for the safety monitoring of the study. The Principal Investigator will be responsible for data and safety monitoring, executing the Data and Safety Monitoring (DSM) plan, and complying with the reporting requirements.

Principal Investigator
Ann Marie Dale, PhD, Professor
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10.1.6 SAFETY OVERSIGHT

Safety oversite will be done internally by study team self-assessments with oversite by the Principal Investigator.

10.1.7 CLINICAL MONITORING

Internal quality management of study conduct, data collection, and documentation will be monitored throughout the study. Each participating health fund will follow a common quality management plan.

Quality control (QC) procedures will be implemented as follows:

Source documents and the electronic data --- Data will be initially captured in the electronic Redcap database. The statistician will review all surveys for completeness of information prior to including the survey in analysis.

Intervention Fidelity — Consistent delivery of the study interventions will be monitored throughout the intervention phase of the study. Procedures for ensuring fidelity of intervention delivery will include documentation of meetings in OneNote, monitoring data collection forms in master tracking file, and staff review of documents in participant folders.

10.1.8 DATA HANDLING AND RECORD KEEPING

10.1.8.1 DATA COLLECTION AND MANAGEMENT RESPONSIBILITIES

Data collection will be the responsibility of the clinical trial staff at the site under the supervision of the site investigator. The investigator will be responsible for ensuring the accuracy, completeness, legibility, and timeliness of the data reported. The statistician will create the statistical databases and recordkeeping with oversight from the investigator.

All source documents will be completed in a neat, legible manner to ensure accurate interpretation of data.

Hardcopies of the study visit worksheets will be provided for use as source document worksheets for recording data for each participant consented/enrolled in the study. Data recorded in the electronic case report form (eCRF) derived from source documents will be consistent with the data recorded on the source documents.

Administrative data will be shared with the research team by a sharing link from each Health Fund. The data will be stored in Wash U Box, and only members of the research team will have access. The data will be managed using SAS and R statistical packages. Any personal identifiers will be destroyed as soon as possible, as none should be needed for analysis. The analysis journal will be documented in word and stored in Box. The data system includes password protection and internal quality checks, such as automatic range checks, to identify data that appear inconsistent, incomplete, or inaccurate.

The worker survey data will be captured electronically and stored in Redcap, with validation limits to insure accurate entries. The data will be downloaded, and managed using SAS and R statistical packages with the source code, derived variables, and data dictionary developed and updated as needed. The data will be stored in Box. This data system includes password protection and a secure network.

The study flow and intervention data will be recorded in Microsoft OneNote, and in Word using the data collection templates. All data will be recorded electronically. Should hard copies be generated, they will

be scanned and stored electronically, and source hard copies destroyed. All study records will be electronic, and will be stored on a password protected, secure network through Washington University.

10.1.8.2 STUDY RECORDS RETENTION

General study documents including the team meetings and intervention information will be retained for a minimum of 1 year after the close of the study, as these data will have no future use after close of the trial. The administrative data will be retained for 2 years. The worker survey data, which will be the only data set shared publically, will be retained for 6 years after end of data collection. It is the responsibility of the sponsor/funding agency to inform the investigator should these documents need to be retained for a longer period of time.

10.1.9 PROTOCOL DEVIATIONS

This study will be developing the protocol to be used in a future trial, so there will be no protocol deviation.

10.1.10 PUBLICATION AND DATA SHARING POLICY

This study will be conducted in accordance with the following publication and data sharing policies and regulations:

National Institutes of Health (NIH) Public Access Policy, which ensures that the public has access to the published results of NIH funded research. It requires scientists to submit final peer-reviewed journal manuscripts that arise from NIH funds to the digital archive PubMed Central upon acceptance for publication.

This study will comply with the NIH Data Sharing Policy and Policy on the Dissemination of NIH-Funded Clinical Trial Information and the Clinical Trials Registration and Results Information Submission rule. As such, this trial will be registered at ClinicalTrials.gov, and results information from this trial will be submitted to ClinicalTrials.gov. In addition, every attempt will be made to publish results in peer-reviewed journals. Data from this study may be requested from other researchers 1 year after the completion of the primary endpoint by contacting the Interuniversity Consortium for Political and Social Research ICPSR.UMICH.EDU [https://www.icpsr.umich.edu] The data will be available in the National Addiction & HIV Data Archive Program (NAHDAP). Considerations for ensuring confidentiality of these shared data are described in Section 10.1.3.

10.1.11 CONFLICT OF INTEREST POLICY

The independence of this study from any actual or perceived influence, such as by the pharmaceutical industry, is critical. Therefore, any actual conflict of interest of persons who have a role in the design, conduct, analysis, publication, or any aspect of this trial will be disclosed and managed. Furthermore, persons who have a perceived conflict of interest will be required to have such conflicts managed in a way that is appropriate to their participation in the design and conduct of this trial. The study leadership in conjunction with the National Institute of Drug Abuse has established policies and procedures for all study group members to disclose all conflicts of interest and will establish a mechanism for the management of all reported dualities of interest.

10.2 ADDITIONAL CONSIDERATIONS

The following are the referenced documents used in this study:

A. R34 Aim 3 Health Fund Baseline Interview Guide_051222
B. R34 AIM 3 Worker Survey
C. Administrative Claims_Data Variables
D. V3.0_WashU_Opioid Prevention Program in Construction_07062022
E. Monthly Health Fund meeting script_followup
F. Data management of Administrative Health Claims and Worker Surveys

A. Health Fund Baseline Interview–R34 AIM 3

Date: _____ **Interviewee: _____**

Organization: **Interviewer:**

We invite you to participate in a 1-hour interview as part of a research study being conducted by investigators from Washington University in St. Louis. The purpose of this study is to evaluate a union and health fund's use of guidelines to reduce opioid misuse among their members. The interview will ask about your knowledge and attitudes toward opioid use disorder or OUD, existing workplace opioid policies and programs and the date of adoption or implementation, and any changes to your policies or programs underway or plans for future changes.

Number	Questions	Response
A	Company Background	
a.1	How many eligible members are covered by the Health Fund?	
a.2	What is your role in the Health Fund?	
a.3	What Unions are covered by the health fund? Does each union have the same health care coverage as the other unions or distinct coverage? Please explain.	

B. Attitude and Beliefs	Notes
B.1. Do you think that the use of prescription opioid misuse and related opioid issues is present among employees in your organization? What leads you to believe this? (supervisor report, claims data, positive drug test results)	
B.2. Has your organization had an experience with a drug related incident or overdose of an employee Did this happen on the worksite? Can you share the story?	

Now I will go through a series of questions to learn about your health fund and/or union policies and programs. Please answer each item, but if the item falls under another organization (such as the union), please let me know and we would like to talk to a contact from the organization to answer those questions.

C	Health Fund Policies and Programs (Needs Assessment)	
Element	**Question**	**Notes:** If they do not know, ask who is better person or organization to answer the question. Include date started, benefit/coverage for some/all members, perceptions of member utilization and awareness of benefits, policy under the collective bargaining agreement (CBA), and **request for copy of policy to research team**

C.1. Policies	C.1.a. Tell us about your organizations policies related to substance use? Written policy? Does it cover general substances or specific substances? (opioid and alcohol)	
	C.1.b. What is covered in the policy (substance use prohibitions, expectations of the workforce, and consequences)?	

C.2. Drug Testing	C.2.a. Tell us about your organizations drug testing program? Do you have a formal program? What does it include and how is it implemented?	
	C.2.b. Describe the written procedures to conduct drug testing and actions to manage test results?	
	C.2.c. What are the consequences if a worker tests positive? Are the consequences formal or informal? For tests done by the union For tests done by the employer	
	C.2.d. Do you use any special strategies to ensure your program is delivered effectively?	

C.3. Medical, Health Benefits	C.3.a. What treatments does your medical health insurance offer to members for pain management?	
	C.3.b. What non-prescription opioid pain management treatments are covered? Chiropractic? Acupuncture? Physical therapy)?	

C.4. Behavioral, Health Benefits	C.4.a. What programs and services are covered by your organization's behavioral health insurance?	

C.5. Pharmacy, Health Benefits	C.5.a. What pharmacy protections are in place related to prescription opioids?	
	C.5.b. What strategies do you use to communicate your organization's **medical**, **behavioral health**, and **pharmacy** benefits to members?	
	C.5.c. Do you monitor utilization of **medical**, **behavioral health**, and **pharmacy** benefits by members? (types of claims/prescriptions used)	

C.6. MAP	C.6.a. Does your organization have an MAP? What services does the MAP provide to your members? How does a member get connected to MAP? Can you expand on the options? Time from first contact to meet with counselor?	
	C.6.b. What strategies do you use to communicate these benefits (MAP) to members?	
	C.6.c. What portion of your members use the MAP each year?	

B.7. Legal Considerations	B.7.a. Does your organization have a return to work policy? If yes does it cover employees with substance use disorder? i.e. does it accommodate workers returning to work after treatment (inpatient or outpatient)	

C.8. Employee Education	C.8.a. Does your organization train workers about opioid risks? C.8.b. What does the training include and when do they receive it? [a) opioid risks, b) how to get help if they are struggling with opioids, and c) information on the (safety and health) impact opioids have on the workplace]	

C.9. Supervisor Training	C.9.a.Does your organization provide training to your supervisors on issues related to opioids, intoxication and substance misuse?	
	If yes, please describe what is covered, when supervisors are trained, duration of training, and follow up training sessions?	

	[These may be covered: Recognize reasonable suspicion, how to talk to and respond to someone suspected of being under the influence, how to manage worker in return to work, and how to engage with workers after a critical incident.]	
	C.9.b. What strategies have you used to provide education and promote participation to members?	

C.10. Other	C.10.a. Is there anything else your organization is doing that you feel helps prevent, treat, or manage opioid misuse? If yes, please explain.	

C.11. Culture of Care	C.11.a Do you feel your organization has a caring culture for substance use and opioid use disorder? Please explain why or why not and give examples.	

C.12. Collective Bargaining Agreement	C.12.a. Does the CBA contain any language or restrictions in policies and benefits related to substance use and opioid use disorder?	

D. Plans for change/improvements to policies and programs related to opioids and substance use	
D.1. Are you in the process of making any changes now?	
D.2. What do you feel are the most important elements you need to add or improve in your organization to address opioids?	
D.3. What are your next steps to address the opioid issue in your company?	

E.1. Please provide names and contact information for others we need to talk to get the rest of the information.

Name	Title	Contact Information (email/phone)

E.2. Identify documents we need to collect:

Example Documents	Documents Interview will share
• Employee Benefits • Written polices • Collective Bargaining Agreement • Written programs (if available) • Forms	

Please complete the Checklist as another measure for us to understand their program.

Health and Safety Substance Use Survey

Below are the instructions, consent, and survey. Please check the box at the end of the informed consent to begin the survey.

Informed Consent

We invite you to participate in a research study being conducted by Dr. Ann Marie Dale from Washington University in St. Louis. The purpose of this study is to evaluate a union and health fund's use of guidelines to reduce opioid misuse among their members. We are seeking workers to complete this survey to evaluate the use of the guidelines.

If you choose to participate, you will be a volunteer for the study; you will be asked to complete a 10 minute survey; and you may skip any questions that you prefer not to answer. All information will be anonymous. We will not ask any questions that identify you. The survey questions ask about your knowledge of health benefits and policies, attitudes toward use of opioid prescriptions, and participation in union programs and benefits.

There are no known risks and no costs to you for participation. You will not be penalized or lose any benefits for which you otherwise qualify and participation will not affect your job. There is no compensation for participation. Although you will not directly benefit from participation, your information may help improve health risks of others in the construction industry. If you choose not to participate, please do not answer any of the questions and exit out of this webpage.

Your data will be stored without your name or any other information that would allow us to identify you. Your data may be used in future research studies and cannot be removed. By allowing us to use your data you give up any property rights you may have in the data. We will share your data with a large data repository (a repository is a database of information) for use by the research community. Your individual identity will not be known in this data set.

If you have any questions about the research study itself, please contact: Sam Biver at sbiver@wustl.edu. If you feel you have been harmed from being in the study, please contact: Dr. Ann Marie Dale at amdale@wustl.edu. If you have questions, concerns, or complaints about your rights as a research participant, please contact the Human Research Protection Office at 1-(800)-438-0445 or email hrpo@wustl.edu. General information about being a research participant can be found on the Human Research Protection Office web site, http://hrpo.wustl.edu. Thank you very much for your consideration of this research study.

☐ If you agree to participate click this box, then click submit once you are finished with the survey

---

How old are you? (years)

_____

What is your gender?

◯ Male
◯ Female

What is your race?

◯ White
◯ Black/African American
◯ Asian/Asian American
◯ American Indian/ Alaska Native
◯ Native Hawaiian or other Pacific Islander
◯ Other

Please specify other race

_____

Are you Hispanic or Latino?	◯ Yes ◯ No
Are you currently eligible for benefits through the St. Louis Laborers' Welfare plan?	◯ Yes ◯ No
Are you currently employed?	◯ Yes ◯ No
Have you worked for your employer for less than a year?	◯ Yes ◯ No
How many months have you worked for your employer?	_____
How many years have you worked for your employer?	_____
Have you worked in construction for less than a year?	Yes ◯ No ◯
How many months have you worked in construction?	_____
How many years have you worked in construction?	_____
On average how many hours do you work in a week?	_____
What type of construction is your current (or most recent) project?	◯ Residential ◯ Commercial ◯ Industrial ◯ Other
Please specify other construction type	_____
How steady is your work?	◯ Regular and steady ◯ Seasonal ◯ Frequent layoffs ◯ Both seasonal and frequent layoffs ◯ Other
My job security is good	◯ Strongly disagree ◯ Disagree ◯ Agree ◯ Strongly agree

The following 3 questions refer to the typical activities in your job

I regularly drive a vehicle or operate heavy machinery at work

- ○ Strongly disagree
- ○ Disagree
- ○ Agree
- ○ Strongly agree

I regularly work from height or other fall risks while at work

- ○ Strongly disagree
- ○ Disagree
- ○ Agree
- ○ Strongly agree

I regularly supervise the safety of others while at work

- ○ Strongly disagree
- ○ Disagree
- ○ Agree
- ○ Strongly agree

Please refer to the last 12 months for the following questions

Have you had trouble (such as ache, pain, discomfort, numbness) in any part of your arms, back, or legs?	○ Yes No
Have you had trouble carrying out normal activities (e.g. job, home, hobbies) because of this trouble in your arms, back, or legs?	○ Yes ○ No
Have you seen a doctor for this painful condition?	○ Yes ○ No
Did you miss any days of work because of your pain or discomfort?	○ Yes ○ No
Have you taken any over-the-counter medications to manage your pain?	○ Yes ○ No
Have you been prescribed (by a doctor) any pain medication? CHECK ALL THAT APPLY:	☐ Vicodin ☐ OxyContin ☐ Tylenol 3 with codeine ☐ Percocet ☐ Darvocet ☐ Morphine ☐ Hydrocodone ☐ Oxycodone ☐ Other ☐ I have not been prescribed pain medication.
Did you use the pain medication?	○ Yes ○ No
Are you currently using this prescription pain medication?	○ Yes ○ No

Did you use the pain medication more than prescribed, or for a longer period than prescribed?	◯ Yes ◯ No
Did you use the pain medication for symptoms other than pain, such as to help you sleep, to improve your mood, or to relieve stress?	◯ Yes ◯ No
Have you used prescription pain medications that were prescribed tosomeone else?	◯ Yes ◯ No
In the past 12 months, have you gone to work intoxicated, high, or recovering from the night before?	◯ Yes ◯ No
In the past 12 months, have you used illicit (illegal) drugs to relieve pain when unable to get pain medications?	◯ Yes ◯ No

Does your union have any of the following policies related to substance use?

Mandatory drug testing	◯ Yes ◯ No ◯ I don't know
Employee with failed drug tests are given medical treatment/counseling	◯ Yes ◯ No ◯ I don't know

Does your employer have any of the following policies related to substance use?

	Yes	No	I don't know
Mandatory drug testing	◯	◯	◯
Safety sensitivejobs (drive ◯equipment, work from heights)	◯	◯	
Light duty work available	◯	◯	◯
Employee termination for failed ◯drug tests	◯	◯	
Employee given second chance ◯	◯	◯ to work if failed drug test	
Naloxone kits are available in ◯	◯	◯ the workplace	
Must tell employer if taking ◯prescription opioids for medical reasons	◯	◯	

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Did your union offer any of the following benefits in the last 12 months?

Union sponsored Member assistance program (MAP)

- ○ Benefit offered
- ○ Benefit not offered
- ○ I don't know if benefit is offered

Sick leave pay

- ○ Benefit offered
- ○ Benefit not offered
- ○ I don't know if benefit is offered

Short term disability

- ○ Benefit offered
- ○ Benefit not offered
- ○ I don't know if benefit is offered

Medical health insurance

- ○ Benefit offered
- ○ Benefit not offered
- ○ I don't know if benefit is offered

Chiropractic/physical therapy coverage

- ○ Benefit offered
- ○ Benefit not offered
- ○ I don't know if benefit is offered

Behavioral health (counseling)

- ○ Benefit offered
- ○ Benefit not offered
- ○ I don't know if benefit is offered

Pharmacy plan

- ○ Benefit offered
- ○ Benefit not offered
- ○ I don't know if benefit is offered

Have you used these benefits?

	Yes	No
Member assistance program (MAP)	○	
Sick leave pay	○	
Short term disability	○	
Medical health insurance	○	
Chiropractic/physical therapy		○
	○	

Behavioral health (counseling)

Pharmacy plan

Did you attend any of the following trainings through the union?

	Yes	No
Training on how to administer naloxone		
Training on risk of opioids and substance use		
Mental health first aid training		

How long was the training on how to administer naloxone?	Less than 5 minutes 5-15 minutes 15-60 minutes Greater than 1 hour
How long was the risk of opioid and substance use training?	Less than 5 minutes 5-15 minutes 15-60 minutes Greater than 1 hour
How long was the mental health first aid training?	1/2 day Full day More than 1 day

Are you aware about any of these programs through the union?

	Yes	No
Alcoholics or narcotics anonymous (AA/NA) group		
Have you attended Alcoholics or narcotics anonymous (AA/NA) group		
Trained peer support specialist		
Have you met with the specialist		
Received prescription opioid "Warn Me" stickers for your insurance card		

Please pick the best answer for each statement.

How often have you worked with someone who is intoxicated or recovering from the night before?

- Always
- Often
- Occasionally
- Rarely
- Never

How often have you worked with someone who is high or under the influence of drugs?

- ○ Always
- ○ Often
- ○ Occasionally
- ○ Rarely
- ○ Never

Please rate the extent to which you agree with each statement

Substance use is a serious problem for workers in our industry

- ○ Strongly disagree
- ○ Disagree
- ○ Neither Agree nor Disagree
- ○ Agree
- ○ Strongly agree

People who are addicted to opioids are making a choice to use them and would stop if they really wanted to

- ○ Strongly disagree
- ○ Disagree
- ○ Neither Agree nor Disagree
- ○ Agree
- ○ Strongly agree

Workplace stress may lead to self-medication with drugs or alcohol.

- ○ Strongly disagree
- ○ Disagree
- ○ Neither Agree nor Disagree
- ○ Agree
- ○ Strongly agree

I would be scared or anxious that I would lose my job if I disclosed that I had a problem with using alcohol or drugs.

- ○ Strongly disagree
- ○ Disagree
- ○ Neither Agree nor Disagree
- ○ Agree
- ○ Strongly agree

Most people think less of a person who has been in treatment for substance use.

- ○ Strongly disagree
- ○ Disagree
- ○ Neither Agree nor Disagree
- ○ Agree
- ○ Strongly agree

Most employers will not hire someone who has been treated for substance use in favor of another applicant

- ○ Strongly disagree
- ○ Disagree
- ○ Neither Agree nor Disagree
- ○ Agree
- ○ Strongly agree

Most people who observed or suspected a co-worker was using a substance would ignore the behavior

- ○ Strongly disagree
- ○ Disagree
- ○ Neither Agree nor Disagree
- ○ Agree
- ○ Strongly agree

If I was struggling with a substance use problem…

	Yes	No
I would be willing to seek help from my supervisor or someone in human resources	○	○
I would be willing to seek help from a professional (MAP or behavioral health)	○	○
I would be willing to ask a trusted coworker for help	○	○

You have completed the survey. Thank you. Please press submit

C. Administrative Claims_Data Variables

Label	Variable name	database	Description
Patient Identifier	Patient ID	Claims	Unique identifier created by health plan to allow linkage of the datasets (pharmacy and claim data)
Claim date	claimDate	Claims	date of claim
Claim type	claimType	Claims	code for type of claim
Provider identifier	providerSrv ID	Claims	Unique identifier in health plan database for provider
Primary diagnosis (ICD-10)		Claims	primary ICD-10 code
All diagnoses (ICD-10 codes)	allDiagnosis	Claims	ICD-10 codes for the visit
CPT and HPCCS codes	procedureCode	Claims	CPT and HPCCS codes
Claim start date	serviceFrom	Claims	start date of claim episode
Claim end date	serviceThru	Claims	end date of claim episode
Claim episode	Sequence	Claims	number to group rows of data for each single episode
Patient Identifier	Patient ID	Pharmacy	Unique identifier created by health plan to allow linkage of the datasets (pharmacy and claim data)
Pharmacy date of service	Date of Service	Pharmacy	Pharmacy date of service
Pharmacy location identifier	Pharmacy RX No	Pharmacy	Pharmacy location identifier
Drug name	Drug Name	Pharmacy	drug name
Drug type	Drug Type	Pharmacy	drug type
Drug identifier	NDC	Pharmacy	drug identifier
Refill number	Rx Refill Nbr	Pharmacy	number of the refill
Formulary category	Formulary Ind	Pharmacy	single or combination drug
Indication for drugs	Most Common Indication	Pharmacy	category of indication for drugs (i.e. pain/inflammation)
drug for maintenance	Maintenance Drug	Pharmacy	purpose of drug
number of days	Days Supply	Pharmacy	number of days supply
number of tablets	Fill QTY	Pharmacy	number of tablets per drug
Claim correction	Claim count Nbr	Pharmacy	Used to correct misentries in data
Relationship code	Relshp Cde	Pharmacy	relationship of the patient (member, spouse, dependent) to identify possible non-member data in the dataset
Age	Age	Pharmacy	Computed by the health fund, age at time of first claim
Gender	Gender	Pharmacy	sex of patient
prescriber unique identifier	Prescriber NPI Nbr	Pharmacy	prescriber unique identifier
pharmacy claim number	Pharmacy Claim ID	Pharmacy	pharmacy claim number
Prior authorization code	Prior authorization type	Pharmacy	Prior authorization code

Prior authorization number	Prior authorization Nbr	Pharmacy	Unique prior authorization number
Work hours	Work hours	Work hours	work hours

WORKPLACE GUIDELINES TO PREVENT OPIOID AND SUBSTANCE ABUSE FOR THE CONSTRUCTION TRADES

This work was supported by National Institute on Drug Abuse grant R34 DA050044-01.

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12 EXECUTIVE SUMMARY

The opioids crisis has devastated the U.S. leading to a substantial number of people suffering from a chronic substance dependency called opioid use disorder. This crisis has been particularly hard on the construction industry. Construction workers perform physically demanding work that leads to high rates of musculoskeletal injuries; workers seek medical treatment for pain relief, even among the youngest workers. Many construction workers have little or no sick leave and poor job security causing these workers to more often come to work when in pain and possibly under the influence from substance use. Workers often receive prescription opioids from a physician to treat their pain.

There is growing evidence that opioid prescription use leads to the development of opioid use disorders and addiction. The medical community and providers have been encouraged to judiciously prescribe opioids for pain and to use alternative pain-relieving treatments. Employers and member organizations should support limiting opioid prescriptions and should help employees who may already have a dependence on opioids through opioid preventive and supportive workplace policies and programs. The construction industry has a unique challenge given the complex organizational structure and employment of workers through temporary, union, and or subcontracts for many construction projects. Employees of these multi-organizational situations may receive their health and safety benefits and programs from more than one organization, often creating gaps or conflicts between health services and the organization of work.

These guidelines were created to help employers, unions, and union health funds evaluate the opioid prevention supports offered within their organization, and aid the development of a comprehensive plan of opioid prevention policies, benefits, and programs for employees to reduce their risk for developing an opioid use disorder. The document addresses the unique issues presented by multi-employer arrangements and contracts, with particular attention to employee benefits provided through union organizations. The recommendations in these guidelines may be applied to other substance use situations such as illicit drug use or marajuana, but there may be additional preventive actions needed to provide comprehensive prevention for these other substance use situations.

13 BACKGROUND

The opioid crisis has led to a substantial number of overdose deaths of U.S. workers. This substantial loss of workers from drug addiction and overdose deaths is contributing to the declining pool of workers, greater healthcare costs, and lower worker productivity. The opioid crisis was born out of the medical system's attempt to address the pain crisis by prescribing opioids, ignoring the addictive nature of opioids.

- Employees with substance use disorders miss 10 days of work per year more than their co-workers [1]
- Drug overdose deaths exceeded 100,000 in a single year in 2021 [2]
- The number of fatal workplace overdoses increased in each of the 8 years to 2020 [3]

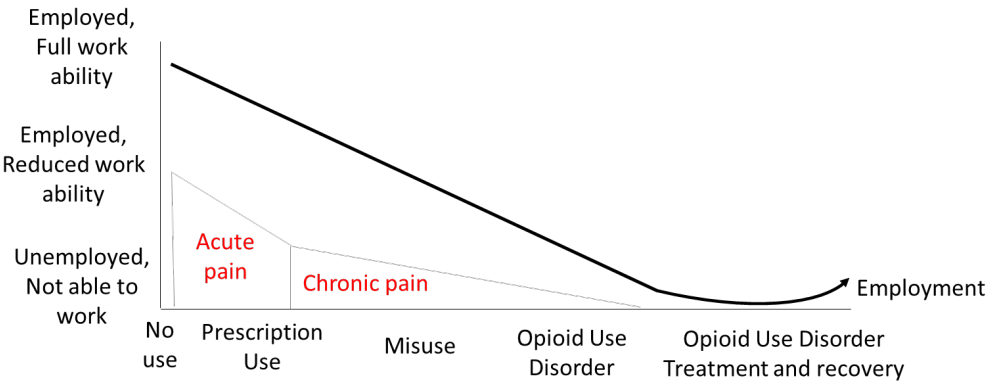
The construction industry has one of the highest rates of prescription opioid use and overdose death rates. The construction industry has many of the factors that contribute to worker addiction: a large portion of workers with painful musculoskeletal health conditions caused by the physically demanding work, lack of sick leave to aid physical recovery, and a culture that prioritizes productivity over health concerns [4].

- Construction workers are 7 times more likely to die of opioid-related overdoses than the average worker [5]
- The construction industry has the highest rate of substance use disorder among all industries [1]
- 1 out of 3 construction workers has a musculoskeletal disorder (MSD) [6]
- Prescription opioid use is 3 times higher among construction workers with MSDs [4]
- Workers who are using opioids have a significantly increased risk of falls and unsafe behaviors, putting themselves and others at risk of injury in the workplace [7]
- Many workers use alcohol, prescription opioids, and other substances to relieve mental stress and physical pain [7]

Substance use disorders are common in the workplace, leading to high costs for healthcare and lost productivity. Figure 1 shows the loss of employment as workers transition from taking opioids, to misusing opioids, to developing opioid use disorder. Opioid use disorder is a

treatable disease with good prognosis for recovery within a supportive environment. A multi-prong workplace program can improve workplace morale, productivity, and worker health.

Figure 1. Cascade of opioid use and loss of employment



- Employers spend an average of $8,817 on each employee with an untreated substance use disorder [8]
- About two-thirds of people who have an opioid use disorder are in the workforce [9]
- Workers with opioid use disorder are more likely to become unemployed and fall out of the workforce (as shown in Figure 1) [10]
- Only one in four people (28%) with opioid use disorder received treatment in 2017 [11]
- Treatment for workers with opioid use disorder decreases healthcare costs and improves workplace productivity [12]
- Opioid use disorder has an exceptionally good prognosis for recovery with more than 10% of Americans living in recovery today [13]

This guideline was developed for workplace organizations, including employers, unions, and health funds, to help improve their opioid prevention program. Unlike other guides that provide general workplace information for opioid prevention, this guide is tailored for the construction industry. It includes a simple needs assessment to review opioid specific policies and programs across eight elements of an organization, and steps to create a plan to improve the organization's opioid prevention program. The guide covers the multi-organization situation with union members working for non-union employers, which provide separate coverage of

opioid-related benefits, programs, and services. The guide provides links to a large number of off the shelf trainings and resources to aid program development. For more information, please visit the website, *www.opioidsandconstruction.com* to get other products and updates related to this guideline.

13.1 HE OPIOID MISUSE AND OPIOID USE DISORDER (OUD) CONTINUUM

This guide covers the full continuum of care for opioids from prevention, to treatment, to recovery and return to work. Optimal health is obtained and maintained through prevention, although a productive life can be achieved for those needing treatment and/or in recovery. There are three phases of the continuum of care shown in Figure 2. Each phase of prevention can be addressed within each of eight essential elements. There is strong evidence that a safety and ergonomics prevention program can reduce the risk for a workplace injury or musculoskeletal disorder, however these programs are not included in this guide as they are addressed in other resources [14-16].

Figure 2: Policy and Program Activities Across the Continuum of Care

Essential Elements	Prevention	Treatment	Recovery
Build a Culture of Care	Leadership demonstrates commitment to worker well-being via communications, policies, programs, and education.		
Employee Education	Educate on opioid risks and non-opioid pain treatment options	Know signs of impairment and benefit of seeking help for self and encourage others	Learn non-stigma language for communication and use of naloxone
Supervisor Training	Educate on opioid risks and know safety sensitive tasks	Know signs of impairment, and how to talk to employees in need	Find appropriate accommodations to aid return to work
Written Substance Use Policy	Clearly state employee expectations on substance use	Policies include treatment for those with positive tests	Written return to work policies after substance use treatment
Drug Testing Program	Testing to deter employees from misusing alcohol and drugs	Refer positive tests to get help (employee or member assistance program or counseling)	State activities and return to work contract for a second chance program
Healthcare and Pharmacy Coverage	Screen for substance use (including opioids) and mental health issues	Cover non-opioid pain treatments and opioid prescription limits	Cover recovery treatment, medication for opioid use disorder, and behavioral counseling
Employee or Member Assistance Program	Train employees and supervisors on opioids and healthy behavior	Provide counseling and referral to services	Support employees during Critical Incident Response
Legal: safety and work accommodations	Provide safe and healthy working conditions for all workers	Protect privacy of individual medical information (HIPAA)	Have reasonable accommodations for those in recover with limited ability

13.2 BRIEF DESCRIPTION OF THE ESSENTIAL ELEMENTS OF A PREVENTION PROGRAM

The following section provides an overview of the elements to comprehensively address opioid and substance abuse in a workplace program. These elements and recommendations were developed from a thorough review of peer-reviewed literature, previously published employer guidelines, and opinions from subject matter experts and industry stakeholders. A comprehensive program should include all elements, address all phases across the opioid continuum of care, and should consider meaningful strategies for program implementation and integration of the elements. Employers or unions with little or no current prevention program would benefit from using the needs assessment checklist in the Process Guide to help them get started.

Build a Culture of Care

Building a culture of care starts with a sincere belief from leadership that a healthy and empowered workforce is more productive and committed. Leadership demonstrates this belief in the mission and vision of the organization, often as a statement of commitment to the well-being of the workers. The commitment is consistently demonstrated though all policies, practices, communications, and education in the organization.

Educate Employees on Opioid Risks

The Substance Abuse and Mental Health Services Administration (SAMHSA) suggests educating all staff on the risks of opioid use, effects of opioids on health, job performance, workplace safety, workplace expectations/policies, and prevention strategies. This information should be delivered on a regular basis to reinforce the message and to communicate the value the organization places on the health of employees and their families.

Train Supervisors on Managing Workplace Substance Misuse

SAMHSA recommends that all supervisors know the organization's opioid prevention policies, their responsibilities for initiating and carrying out policies and programs related to their job, and how to recognize employees with suspicious substance misuse behaviors.

Written Controlled Substance Use Policy

A company or union's written controlled substance use policy should be designed to meet the needs of the workforce and be appropriately delivered within the workplace. The comprehensive policy includes a statement of purpose, and details the expectations, prohibitions, program elements, consequences and appeals related to substance use. The policy may meet the minimum requirements mandated by law or may be more comprehensive to cover the overall health, safety, and well-being of the workforce.

Drug Testing Program

A drug testing program is designed to deter employees from coming to work unfit for duty, thereby keeping all employees safe and all equipment and property free from harm. The program should have clearly defined steps and should be consistently communicated to all employees. It may be part of the written substance use policy. The testing should be performed by a certified lab with oversight by a medical review officer (MRO). Industries and jobs involving safety sensitive tasks may have specific drug testing mandates.

Healthcare Insurance and Pharmacy Coverage

The healthcare plan provider (employer or union) should offer healthcare and pharmacy coverage for medical pain management (non-opioid pain management therapies), and behavioral health and recovery treatment (pharmaceutical coverage for medication assisted treatment, inpatient and outpatient recovery services). Pharmacy coverage and policies should reduce risks for over-utilization of prescription opioids.

Employer or Member Assistance Program

Employee assistance program (EAP) or member assistance program (MAP) are resources offered by the employer (EAP) or union (MAP) for services to help improve each employee's work-life balance and well-being. EAP and MAP services can help reduce negative effects of opioid and substance misuse through screenings and early identification, short-term counseling, referral to specialty treatment, and other behavioral health services. Employees with positive drug screens or other suspicious substance misuse behaviors may be required or recommended to see an EAP/MAP counselor for an assessment.

Legal Concerns

Ensure all legal requirements related to drug-free workplace policies, practices, and drug testing are met. There are several federal and state laws and regulations related to medical management, labor laws and contracts, return to work and Americans with Disabilities Act, equal opportunity and substance use that should be considered within an employer or union plan. Ensure compliance with protecting employee privacy of healthcare and adequate coverage of behavioral insurance (Mental Health Parity and Addiction Equity Act of 2008) [17].

14 PROCESS GUIDE:

A step-by-step process guide will help you develop a plan for your opioid prevention program. This process guide includes a needs assessment to identify the strengths and weaknesses of your organization's opioid prevention program, an inventory of the available resources within your organization, and guidance on developing and implementing a plan. The needs assessment should be completed by a person who is knowledgeable about the organization's policies and programs, and who can give the most accurate reflection of the organization's current efforts for the prevention of opioid misuse.

14.1 STEP 1: NEEDS ASSESSMENT

The following tool will assess your organization's policies and programs that support opioid prevention, treatment, and recovery. Please respond yes or no to each question. Items with a "no" response indicate areas your organization may choose to make changes. Resources and additional information can be found in this guide at the page number listed for each question.

Element	Question	Yes/No	Resource	pg #
Culture of Care	Has your organization's leadership made a commitment to help reduce the negative effects of opioid misuse for your employees?	Y/N	*APA: Leadership Support*	*16*
	Has your organization's leadership demonstrated its commitment to help reduce the negative effects of opioid misuse for employees in written forms and actions (e.g., newsletter, in person presentations, policies and practices about employee mental well-being)?	Y/N	*CSDZ Building a Caring Culture*	*16*
	Does your organization tell employees to avoid using discriminating language and actions that make people living with opioid and substance misuse or disorders feel they don't matter?	Y/N	*NIH: Words Matter*	*16*
Employee Education	Does your organization provide employees training about opioid risks and how to get help if they are struggling while using opioids?	Y/N	*The Hartford: Shatter Proof Addiction video modules*	*19*
Supervisor Training	Does your organization provide training to supervisors on recognizing suspicious behaviors and signs of intoxication, and how to manage situations involving suspicious behavior?	Y/N	*NSC: Impairment Recognition and Response Training for Supervisors*	*20*
Written Controlled Substance Use Policy	Does your organization have a written drug free workplace policy?	Y/N	*SAMHSA's Guide on Developing a Policy for a Drug Free Workplace*	*22*
Drug Testing	Does your organization require routine drug tests to ensure a drug free work force?	Y/N	*NSC: Drug Testing and Opioids*	*25*
Medical, Health Benefits	Does your organization provide medical insurance that covers non-prescription opioid pain	Y/N	*Structuring Health Benefits*	*28*

	management treatments (i.e. chiropractic, acupuncture, physical therapy)?		*for Drug Misuse Issues*	
Behavioral, Health Benefits	Does your organization's behavioral health insurance provide coverage (with reasonable copay) for inpatient and outpatient recovery services for those with opioid use disorder?	Y/N	*Structuring Health Benefits for Drug Misuse Issues*	*28*
Pharmacy, Health Benefits	Does your organization's pharmacy benefit set limits for coverage of prescription opioids (i.e. number of day's supply, maximum dose, type of opioids allowable)?	Y/N	*CDC Guideline for Prescribing Opioids for Chronic Pain*	*28*
	Does your organization's pharmacy benefit manager include an opioid prescription monitoring program?	Y/N	*Structuring Health Benefits for Drug Misuse Issues*	*28*
	Does your organization's pharmacy benefit cover medication for opioid addiction treatment (i.e. buprenorphine) as a long-term treatment?	Y/N	*MAT for Opiate Dependence*	*28*
EAP or MAP	Does your contracted or hired EAP/MAP participate in your organization's programs (i.e. deliver customized training, help with return to work management after treatment)?	Y/N	*EASNA: EAP Purchaser Guide*	*32*
Legal Concerns	Does your organization's return to work policy cover employees with substance use disorder?	Y/N	*JAN-Drug Addiction*	*34*

14.2 STEP 2: INVENTORY RESOURCES

Reflect on and answer the following questions related to the resources and support available to start and maintain elements of a workplace opioid prevention program within your organization. Be as specific as possible in your answers.

a) Has leadership made a verbal or written commitment to having an opioid prevention program with a specific focus on opioids (and/or other substance use disorders)?
b) Does the organization have staff designated to develop an opioid prevention program?
c) Will staff have protected (designated) time to manage the responsibilities of the program?
d) Does your organization have financial resources designated for an opioid prevention program?

e) Do you have access to individuals or organizations internal and external to your organization who are knowledgeable about opioid and substance use disorder and its management in the workplace? List the persons and their affiliation.
f) Do you have any current health and safety trainings, policies, or programs that could be used to pattern efforts for an opioid prevention program (i.e. safety training that could add opioid awareness and prevention training)?
g) How knowledgeable are you about signs and behaviors of opioid misuse and opioid use disorder? Do you feel comfortable describing the issues about opioid use in the workplace with other employees and managers in the organization?

14.3 STEP 3: DEVELOP AND IMPLEMENT A PLAN

Based on the "no's" from your needs assessment in step 1, consider what your organization may be ready to change and develop a plan to make the change. Organizations with little to no opioid prevention activities may create a simple plan with short-term goals. Organizations with some programs in place may choose to develop a more comprehensive plan that includes an evaluation of the company culture related to opioid prevention. The following are steps to help you create a simple plan. Organizations in need of a more comprehensive plan may find additional assistance in *the plan from the National Safety Council*.

a. From your needs assessment, choose one element that may be added or expanded to begin to build your prevention plan. This may be a topic your organization has considered changing or that may be most easily addressed to start your plan. List the element on the line below.

   Element: _____

b. Write out your ideas for your plan below. Be as specific as possible to describe the steps you will take to build opioid prevention in the element. Refer to the Program Content Guide for additional information and strategies to address each element (pages 16-35). Program resources and trainings may be found on pages 14 and 41.

   _____

_____

_____

_____

_____

_____

_____

c. From your inventory of resources from step 2, list resources that you have or will need to help you achieve the ideas for your plan. Include information on person responsible, 3rd party vendors involved, costs, action items, and timelines. Describe how the steps will be completed and who is responsible for each action item.

_____
_____
_____
_____
_____
_____
_____
_____

Consider some strategies to help you get started.

- Motivate and create interest through story telling.
- Look for "champions" through local presentations, providers, and people with expertise that you can learn from and bring into your workplace for educational purposes or consultation.
- Convene Employee Resource Groups (voluntary employee-led groups) whose purpose is to support the special needs and interests of various subgroups within the organization (i.e. Veteran's support group, Woman's network, Hispanic group, Working parent's group).
- Get worker input through listening sessions.

14.4 MULTI-ORGANIZATION SITUATIONS INVOLVING EMPLOYER AND UNION/HEALTH FUND

Employer versus Union Health Plans

Most employers offer health benefits and wellness programs to their regular employees. Members of a union generally perform work for many different employers, so they receive their health plans through a "Taft-Hartley" agreement. The health benefits and wellness programs of Taft-Hartley agreements are from the collective bargaining process between union and employer representatives, and are overseen by a joint labor-management board of trustees. The benefits and services offered through single employers and union health plans are similar, and may include health care benefits, pension, unemployment benefits, training and education, vacation/holiday/severance benefits, and disability insurance. Taft-Hartley union health plans generally cover a large number of individuals so these organizations may be able to negotiate lower costs per member for health and disability insurance and pharmacy benefit plans. Some unions ensure broad access for members while others limit resources to only regional networks so unions should check with their national office to see what resources and best practices have been created. One challenge for unions whose members work at many different locations is ensuring members have access to services close to their work location.

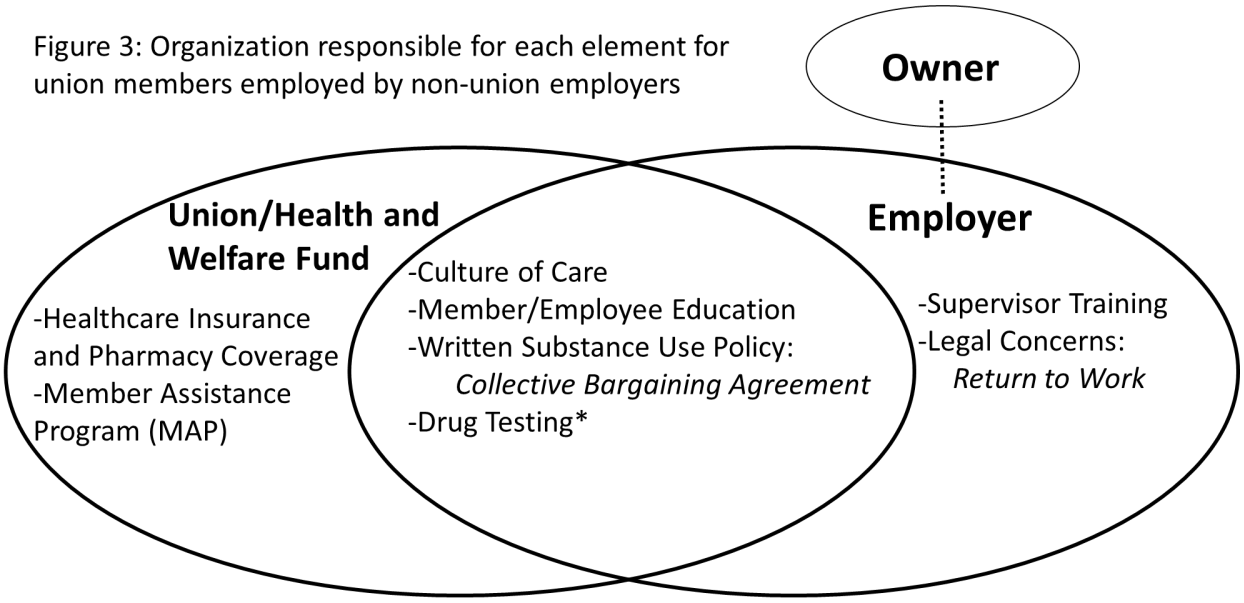
A challenge for workers on multi-employer projects is the benefits may differ for those on employer-sponsored versus union-sponsored plans. Employers who oversee multi-employer projects may find contracted employees have limited coverage for some services (i.e. behavioral health or EAP/MAP). Some general contractors or project owners have offered EAP services for all employees on the jobsite. This is important to consider if there is a critical incident on the worksite and employees need behavioral health services to manage mental stress after the event. Employers should contact the union and/or health fund to bring in mental health services for their union members; or may opt to provide these services if the union does not offer them for their members.

14.5 FRAMEWORK FOR MULTI-ORGANIZATION SITUATIONS INVOLVING EMPLOYER AND UNION/HEALTH FUND

A common challenge in the construction industry is the interconnectedness of employers, unions, and health funds. Some of the benefits, policies, and programs are under the direction of the employer while others fall under the union and/or health fund based on the collective bargaining agreement and interest of the leaders of each organization. Although these

agreements are created at the local level, national unions often offer substantial support and programs for regional and local unions. Figure 3 is a graphic that depicts which organization may control or be responsible or have shared responsibility for each of the essential elements of a workplace opioid prevention program. Coordination between organizations is necessary to optimize outcomes for employees.

Figure 3: Organization responsible for each element for union members employed by non-union employers



*Drug testing requirements and responsibilities depend on collective bargaining agreement and State and Federal laws; certain industries and jobs involving safety sensitive tasks have specific drug testing mandates.

In the table below, list which organization is currently responsible for each program element. Some elements may require involvement from more than one organization.

Program Element (Refer to brief descriptions listed in the background)	**Organization Responsible** **List the organization responsible for each element: Employer, Union, or Health & Welfare Fund**
Culture of Care	
Member/Employee Education	
Supervisor Training	

Written Controlled Substance Use Policy	
Drug Testing	
Healthcare Insurance and Pharmacy Coverage	
Member or Employee Assistance Program	
Legal Concerns for ADA	

14.6 PROGRAM RESOURCES AND TRAININGS

Employee Education

- ***A Dose of Reality for Employees 25-30 minutes:*** Educates Employees on *a 3 point prevention strategy to prevention opioid misuse* *https://www.odjfs.state.oh.us/tutorials/OWD/WorkforeProf/Dose-of-Reality/story_html5.html*
- ***The Hartford: Shatter Proof Addiction video modules:*** A series of videos on Stigma, Addiction, Risks, Support, Recovery *https://www.thehartfordisshatterproof.org/open-access/*
- ***Nevada DHHS: 45 minute Lunch and Learn Outline to educate employees* (pg.16):** Lunch and Learn Outline on risk of opioids, addiction, treatment, and recovery friendly workplace *https://www.nevadaworksitewellness.org/wp-content/uploads/2019/04/Nevada-Recovery-Friendly-Workplace-Toolkit.pdf*
- ***NSC: Opioids at Work Employer Toolkit "Employee Education" section***: Education tools on videos such as 5 minute safety talks and videos *https://www.nsc.org/pages/prescription-drug-employer-kit*
- ***CPWR: Opioid Awareness Training Program***

  https://www.cpwr.com/research/research-to-practice-r2p/r2p-library/other-resources-for-stakeholders/mental-health-addiction/opioid-resources/opioid-awareness-training-program/
- **CDC: Opioids in the Construction Industry**

3 part educational videos series released by CDC to raise awareness on the issue of opioids in the construction industry
Part 1: *https://www.youtube.com/watch?v=XqOlAyEuqpQ*
Part 2: *https://www.youtube.com/watch?v=inQu1WqAPII*
Part 3: *https://www.youtube.com/watch?v=gsgbUQ2nKsE&t=1s*

Supervisor Training

- ***NSC: Impairment Recognition and Response Training for Supervisor***
  https://www.nsc.org/impairmenttraining
- ***Kentucky Comeback: Reasonable Observation Checklist***
  https://kentuckycomeback.com/wp-content/uploads/2020/08/Kentucky-Comeback-Reasonable-Observation-Checklist-1.pdf
- ***NAHB Supervisor Training: Addressing Opioid Misuse at the Worksite (pg.14):*** trains supervisors on signs workers may be misusing opioids, Talking to Employees about performance issues due to drugs, and using a performance checklist
  https://www.nahb.org/-/media/NAHB/advocacy/docs/industry-issues/safety/opioid-resource-page/supervisor-training-opioid-misuse-intervention.pdf

Human Resources/Employers

- **Kentucky Comeback: Employer Inventory Form:** *This inventory exercise will help an employer recognize programs that need to be developed to support prevention, treatment, and recovery for their employees.*
  https://kentuckycomeback.com/wp-content/uploads/2020/08/Kentucky-Comeback-Employer-Inventory-Form-1.pdf
- ***Kentucky Comeback: Policy and Procedures Samples:*** Samples documents for different policies and procedures when employers are developing written policy for their workplace substance use and opioid programs
  https://kentuckycomeback.com/policies-procedures/
- ***Minnesota Department of Health- Opioid Epidemic Response: Employer Toolkit*** offers pre made social media posts and communication tools
  https://www.health.state.mn.us/communities/opioids/communities/employertoolkit.html#Example1

Employee Engagement Surveys

- ***The Boston Medical Center: Employer Survey on Employee Support for Substance Use and Mental Health Disorders***
  https://www.bmc.org/sites/default/files/addiction/1-employer-survey_v2.pdf
- ***The Boston Medical Center: Focus Group Discussion Questions:*** Questions for Focus Group on mental health and substance use
  https://www.bmc.org/sites/default/files/addiction/1-focus-group-discussion-questions.pdf
- **NSC: Sample Employee Engagement Survey:** *A survey to understand employees knowledge and attitudes on Opioids in the workplace.*
  https://www.nsc.org/getmedia/c2d74fc8-1027-4c29-afab-5cedfc07c3a1/sample-employee-engagement-survey.pdf.aspx

Naloxone Training

- ***NSC Opioids at Work: Naloxone in the Workplace:*** Guides employers on how to develop a Naloxone workplace program *https://www.nsc.org/getmedia/2b1616a1-c8a6-4c8c-b56b-1aa32f395bd5/naloxone-in-the-workplace.pdf.aspx*
- ***Reverse Overdose Oregon: Naloxone Training:*** Documents and training videos that train individuals on how to use Narcan "Naloxone" and what to do in the situation of an overdose *https://www.reverseoverdose.org/training-video*

NOTE: State Specific Employer Resources may be found on page 41.

15 PROGRAM CONTENT GUIDE:

Essential Elements for a Workplace Opioid Prevention Program

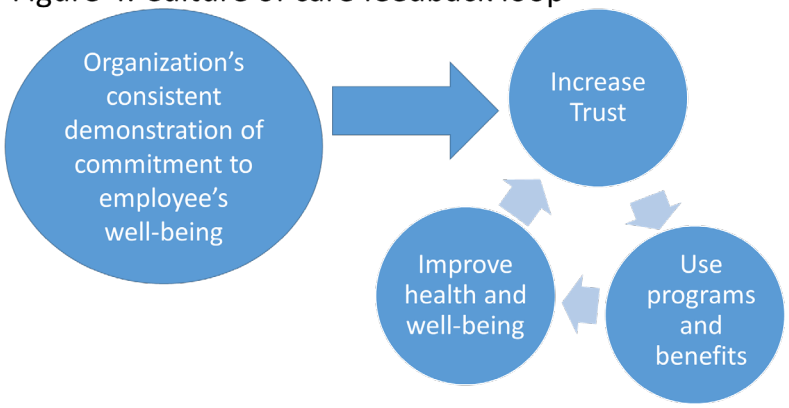
1. BUILD A CULTURE OF CARE

Building a culture of care starts with a company or union organization clearly stating in their core values a commitment to the well-being of their employees. This commitment is woven into the mission, and must be consistently demonstrated though policies, practices, communications, and education. Companies and organizations that display and implement empathetic policies and practices are able to build trust with their employees. Trust leads to

better employee engagement and utilization of employer- or union-sponsored benefits, which enhances well-being and prevents the development of poor health. Figure 4 shows a positive feedback loop created by consistent communication from organizational leaders to employees. The feedback loop shows higher levels of employee engagement, improvements in productivity, reduction in absences, reduced burnout, and higher innovation [18].

An organization with a culture of care is capable of supporting employees with varying degrees of mental health conditions. Most workers will struggle with mental health issues at some time during their work, but they will cope better and remain more productive if they work in an environment that is empathetic to their health condition. Employees who are in recovery from addiction or opioid use disorder may have challenges maintaining sobriety yet they will have greater success if they work in a caring environment [19].

Figure 4. Culture of care feedback loop



Here is a short list of tangible action items an organization can do to move towards a culture of care [20].

- Coach leaders to model caring values with consistent follow-up and reinforcement
- Share stories that highlight acts of caring within the organization
- Provide job descriptions, especially for those involved in risk management or safety, that explicitly include protecting the well-being of employees

Culture of Care and Stigma

Social stigma is the negative attitude and behaviors of employees toward people with a specific characteristic that sets them apart from others. Even though opioid use disorder is recognized as a treatable brain disease, employees with opioid use disorder are often intentionally or unintentionally mistreated by coworkers and managers. Mistreatment from social stigma can increase an employee's risk of having a relapse or of isolating themselves from their coworkers.

Educating all employees and supervisors to use destigmatized language and behaviors, and educating them about opioid dependence can help change attitudes, reduce stigma, and foster a caring culture [21].

Cause and effects of stigma

Workplace stigma is prevalent in many companies and organizations, primarily caused by "unsupported assumptions, preconceptions, and generalizations" of employees [22]. Stigma implies social disapproval and can lead unfairly to discrimination against and exclusion of the individual [23].

Stigma presents itself in three ways: self, social, and structural. Self-stigma is an individual's negative feeling towards them self, based on a negative social reaction from a characteristic or health condition. Social stigma is other people's negative attitudes and behaviors exhibited towards a stigmatized group or person that reinforces the stereotype. Structural stigma is caused by institutional policies and practices that restrict the rights and opportunities for individuals of a stigmatized group [24]. Stigmatized conditions are usually associated with high-perceived levels of control and fault of the individual (e.g. "It is their fault they chose to take drugs and if they really wanted to, they would stop"). People living with stigma lose hope, don't believe in themselves, and subsequently become less productive and less engaged [25, 26].

Allowing stigmatized attitudes and behaviors in the workplace causes employees to suffer from feelings of shame and social alienation, reinforces isolation, and discourages the stigmatized employee from getting help when needed [27, 28]. Stigma can be reduced by changing the way people talk about addiction, using positive and supportive terms rather than negative labels, and educating employees about opioid dependency, effective treatment for chronic pain, and mental health conditions and resiliency [29-32].

STRATEGIES: CULTURE OF CARE [33]

1. Ensure organizational policies and programs are in place to prevent and treat opioid misuse, and support those in recovery from opioid use disorder (OUD).
2. Communicate with care. The words you choose are important as well as how the messages are conveyed. Provide consistent destigmatized messaging about mental health and substance use disorders and resources available into company and union organization communications [34].
3. Provide education to all employees in the workplace on the cause of opioid use disorder and how it can be effectively treated.

   a. Successful strategies to reduce OUD stigma include: [27]
      i. Sharing success stories
      ii. Educational programs including participation from individuals in recovery
   b. Off-the-shelf Resource: *Shatter Proof Just Five Training Modules*
4. Offer information and help to find professional resources. Participate in mental health and substance use prevention campaigns with materials developed by trusted organizations like SAMHSA and American Psychological Association (APA).

Connecting peer-based recovery supports to employees in need

Employees in recovery and those who desire help for opioid or substance misuse often struggle with trusting others to seek help. For employees in recovery, this struggle may lead to relapse following return to work. Relapse does not mean that the person or treatment has failed – rather, it means that the treatment regimen in place is not the correct treatment for the person [35]. Peer-based recovery supports can help to improve trust among employees, increase feelings of inclusion, and increase help seeking for individuals at risk.

Union or Employer Peer program (internal to organization): A formal peer program may be created by a union or employer and include individuals in recovery from substance use or others interested in providing support to employees with substance use issues. These peers should be formally trained. Their primary role is to guide or help navigate co-workers in need toward accessing services from trained professionals. These peers do not provide counseling or other treatment themselves. Often organizations integrate their peer program with their EAP/MAP who also provide oversight for the trained peers to insure encounters with employees in need are handled appropriately. Trained peers may assist with onsite trainings on related topics and be identified through posters or by wearing a special hard hat sticker to indicate they are trained and willing to help others [36].

Peer Based Recovery Supports in the community: There are several ways that community-based peer recovery services can provide assistance and support to a local company or union. These local programs can help connect employees with established peer support groups (e.g. Alcoholics Anonymous (AA), Narcotics Anonymous (NA)). Some community programs employ peer-support coaches who can provide one-on-one peer coaching to others, and these services may be recommended to employees in need (Listen to *NAHB's Podcast, A Constructive Response to The Opioid Epidemic, Opioid Intervention in the Workplace* to learn how GE Johnson integrated third party *peer-support coaches* within their organization).

Example Programs

- The Road Home Video, International Union of Operating Engineers Peer Program *https://www.youtube.com/watch?v=P-PxdTlXpDs*

- Laborer's Health and Safety Fund of North America, LEAN Program
  https://www.lhsfna.org/tackling-opioid-addiction-one-liuna-member-at-a-time/

  National Peer Support Trainings
  https://www.mhanational.org/how-become-peer-support-specialist
  https://www.naadac.org/ncprss
  https://www.laborassistanceprofessionals.com/

2. EMPLOYEE EDUCATION

Increasing employee's knowledge of the risks of opioids, their role in having an impact on prevention of opioid misuse in the workplace, and awareness of policies and employer benefits related to prevention requires a communication and educational plan. Comprehensive employee education involves presentation to all employees either in person or virtually. The goal of employee education is to decrease inappropriate use of prescription opioids and other substances by workers and to reduce stigma by increasing knowledge and empathy toward workers with addiction and opioid use disorders. Communication strategies depend on the type of work, the size of the organization, culture, and employer resources (See FAQ "How do I communicate with my workforce effectively").

A comprehensive general employee opioid education may include the following topics:

- What are opioids?
- Risks of taking opioids
- Treatment myths and facts
- Signs and behaviors of opioid use disorder
- Opioid overdose and naloxone for prevention
- How to get help
- Stigma reduction
- Effects of opioids on job performance and workplace safety
- Non-opioid pain management options
- Talking to providers about non-opioid pain management options
- Home safety practices (safe storage, safe disposal or take back opportunities, don't mix with other drugs, don't share)
- Workplace expectations/policies and prevention strategies

- Workplace supports and benefits for accessing help and treatment related to opioid use

For more info on employee education on these topics, visit the *National Safety Council's Opioids at Work Employer Toolkit*. Other employee education resources are located in the *Program Resources and Training* section in these guidelines.

15.1.1 STRATEGIES: EMPLOYEE EDUCATION

1. Training may be delivered by human resources, occupational health, or a representative from the EAP/MAP. Trainings may be offered using online or virtual options.
2. The large number of topics that should be included in a comprehensive opioid education program may not be adequately covered or well-understood if delivered in a single session. Provide single topic or short training sessions and repeat trainings on various topics regularly throughout the year.
3. General opioid education can be part of the new hire onboarding process and should be regularly included in team/staff meetings, and other trainings or briefings such as toolbox talks.
4. Educational materials and promotional information may be posted throughout the workplace and through other communication channels (i.e. newsletters, email, texts).

Resources:

CPWR Opioid Awareness Training Program for Employees

Nevada Recovery Friendly Workplace Toolkit- "Lunch and Learn"

Shatter Proof Educational Video Modules on Addiction

A Dose of Reality for Employees Video Training Module

Other special considerations for employee education:

- Provide employees a means to dispose of excess opioids safely to reduce potential for opioid misuse (Resource: *FDA Drug Disposal Locations Website*, contact your local hospital or pharmacy, *Stericycle drug disposal envelopes*).
- Order "*Warn Me Labels*" from National Safety Council to place on insurance cards

- Implement a Workplace Naloxone Program (Resource: *NIOSH Using Naloxone to Reverse Opioid Overdose Factsheet, Reverse Overdose Oregon Naloxone Training Program)*
- Use destigmatized language to grow a caring culture toward substance use disorders (Resource: *NIDA Words Matter- Terms to Use and Avoid When Talking About Addiction*)
- Special topics such as Naloxone training may be offered by a qualified person from a local hospital, first responder, police department, or community organization for recovery or drug use (Resource: *NIOSH Using Naloxone to Reverse Opioid Overdose*)

3. TRAIN SUPERVISORS ON MANAGING WORKPLACE SUBSTANCE MISUSE

Identifying and addressing substance use problems in the workforce can prevent greater problems for employers and unions, and can help support the health of the workers. Supervisors know each employee's job tasks and typical performance at work so they are often the first to recognize unusual or a change in employee behavior suggestive of substance misuse. Supervisors can play a critical role in early intervention of substance misuse if they are properly trained on recognizing behaviors and how to manage the situation of an employee under the influence. Their training should include general information about risks of opioid use described in the employee education section (p.18). But it is important for supervisors to develop the knowledge and skills about how to help manage an employee in need. Companies or union organizations that already provide supervisor training on other topics may add information on opioid-related issues as part of ongoing training.

THE FOLLOWING IS A LIST OF BEHAVIORS THAT OFTEN INDICATES AN EMPLOYEE IS STRUGGLING WITH A PERSONAL ISSUE (THAT MAY OR MAY NOT BE RELATED TO SUBSTANCE USE):

- Regular tardiness
- Unplanned absenteeism and excessive use of sick days
- Ongoing performance issues (frequent disappearances at work, failure to complete assignments or meet deadlines)
- Less engagement (signs of confusion, memory loss, greater mistakes)

- Behavioral concerns (greater conflicts with co-workers, deterioration in personal appearance, increasing isolation)

Supervisors should not make assumptions about the reason for the behavior but should follow their employer policies and training or seek advice from human resources or management.

The following is a list of the critical components of supervisor training [37, 38]:

- how to recognize behaviors and observable signs of impairment
- how to talk to an employee
- how to recognize a medical crisis is due to a substance overdose and how to respond
- know the employer policies for managing an employee with an opioid or substance use condition
- which jobs performed by their employees involve safety sensitive activities
- how to make a return to work accommodation for an employee after treatment
- how and when to use Naloxone
- the company's critical incident response plan and procedures

The supervisor has the most direct contact with employees after a critical incident, so should be able to gauge how well the employees are mentally coping with the situation.

15.1.2 STRATEGIES: SUPERVISOR TRAINING

1. Train supervisors to encourage a culture of care, discourage the use of stigmatized language and behaviors, and provide fair and equitable treatment of all employees.
2. Train supervisors in how to manage employees with substance use or in recovery, before being assigned this responsibility [22].
3. Train supervisors in how to talk to employees under reasonable suspicion, employees in need of help, and employees in recovery using respectful and appropriate language.
4. Supervisors should receive training on reasonable suspicion behaviors and organizational and procedures to manage these situations.
5. Supervisors should be trained on how to engage with workers after a critical incident and how to provide resources and referrals to treatment as appropriate.

6. Supervisors managing return to work for employees in recovery should know how to communicate clearly defined expectations, timelines to complete tasks, and consequences for non-adherence to the return to work agreement.

Resources:

Supervisor Training From SAMHSA

Supervisor training from NSC

Intervention training for Supervisors from NAHB

4. WRITTEN CONTROLLED SUBSTANCE USE POLICY

Employers and unions each carry responsibility for the health and safety of employees, and therefore should each have a written controlled substance policy. The policy should include the organization's goal for the workforce, be clearly stated and include the purpose, workforce expectations and prohibitions, substance use program elements, and policy consequences and appeals. The policies may be designed to meet the minimum drug use requirements mandated by law or may cover policies more broadly. Legal counsel, human resources, and employee relations should be involved with developing the policy to ensure it includes protections for risk management, injury prevention, and liability.

The policy statement may include the following:

- Specify who is covered
- Drug testing and consequences for violations
- Training to identify substance use behaviors for employees and supervisors
- Employee education on substance use risks and how to get help for those in need
- Assistance for employees who voluntarily seek help for impairment issues
- Meeting the requirements of the law

The substance use policy may include specific information related to the use of prescription opioids at work, and restrictions from safety sensitive work tasks while taking prescriptions opioids.

The union's policy is often part of the collective bargaining agreement. The goal of the employer or union policy is designed to maintain a drug free workplace. There are several

guidance documents with examples of employer policies available for creating written workplace policies (links below). These documents may be a useful reference to create a union's policy.

Resources:

SAMHSA's Guide on Developing a Policy for a Drug Free Workplace

NSC's Sample Policy for a Drug Free Workplace Program

Kentucky Comeback's Sample Policies for a Drug Free Workplace

Return to Work, Job Accommodations, and Recovery Treatment

Return to work policies define the functional level an employee must meet to be eligible for returning to work after an injury, illness, or progressive health condition that limits function. A "fit for duty" determination means the employee is able to perform all of the essential duties of their assigned job, as outlined in the job description. For employees with medical or cognitive concerns, a fit for duty determination should be made by a medical provider knowledgeable about occupational tasks and workplace risks, such as an occupational medicine physician or person with similar training. Physical or mental impairments may be caused by work-related or personal injury or illness or substance use problems. Return to work policies for employees with substance use problems usually require a negative drug screen and documentation by a qualified physician approving fit for duty.

Drug addiction may interfere with a person's mental health processing shown as problems with attention, memory, ability to organize, and ability to control behaviors. Employees with substance use disorders (SUD) who complete recovery treatment may return to work if they can perform their regular job duties without placing themselves or others at risk of harm. An employee with as SUD may qualify for a job accommodation if their SUD has caused a disability as outlined in the American's with Disability Act (See Legal Concerns, p. 34). Accommodations must be provided for all employees with the same or similar disability. Information for accommodating employees is provided by the U.S. Department of Labor's Office of Disability Employment Policy and the Job Accommodation Network (JAN) [39, 40].

The goal of return to work policies for employees with SUDs is to create a system of support within the workplace and accountability of the returning employee to resume their usual work activities. There are several strategies employers can use to support employees in recovery

including the following: flexible leave of absence policies to allow time to receive outpatient treatments; having modified duty options if needed; having EAP/MAP services available and encourage its use; and having a healthy workplace culture that does not tolerate stigma and discrimination for people with substance use conditions [31]. (See the section on Build a Culture of Care, p. 16)

Critical Incident Response Plan

Every company should have an established plan for how to respond to a critical incident in the workplace. A critical incident is defined as an event that caused an actual or perceived threat to an employee's well-being or someone close to that employee. Common examples of a workplace critical incident includes a major accident, workplace violence, employee suicide, or employee overdose. The response plan should include the immediate action taken for the health and safety of the victim and all other persons at risk. The employer should have a plan for each type of critical incident.

In the event there is an opioid overdose in the workplace, the employer plan may include having the lifesaving drug Naloxone available in the workplace, and trained persons to administer the treatment. In high doses, opioids will significantly slow breathing which can quickly lead to death if not reversed. Emergency responders carry Naloxone to reverse an opioid overdose. However, an employer may consider implementing a workplace naloxone availability and use program, as having the life-saving drug available in the workplace improves the chance for reversing the overdose successfully. If considering a workplace Naloxone program review the *NIOSH Using Naloxone to Reverse Opioid Overdose Factsheet.* A Naloxone program should include a written plan for how to respond to an overdose, training on how to administer Naloxone, clear expectations on who should be trained and how often, and insure Naloxone is available at the workplace. Naloxone training may be considered as part of employee education and/or supervisor training.

Addressing co-worker's psychological response to a critical incident
A critical incident response plan must consider the residual impact the incident might have on bystanders' and co-workers' psychological response and mental health. This is important for anyone who witnessed the event, or who was a friend or long-term co-worker to the victim(s) of the event. Supervisors and frontline managers should monitor how well the employees are coping after a critical incident occurs in the workplace, and should know when to act if one or more employees shows signs of mental stress (see Supervisor Training). If the employees are members of a union, the union representative or business agent should be notified about the incident so union support resources may be provided for the union employees. EAPs/MAPs, mental health agencies, and other medically trained support services may be brought into a workplace to provide mental assistance for the employees after the critical incident.

Postvention strategies might include a formal critical incident debriefing session or an informal safety huddle debriefing with affected employees. These debriefings often include behavioral specialists or EAP/MAP representatives. Acknowledging the overdose and providing support in the immediate aftermath is a way to humanize your workforce and help individuals cope together and heal [41].

Resources for Employers:

NSC Naloxone in the Workplace

Optum training on responding to traumatic events in the workplace

International Critical Incident Stress Foundation's Primer on Critical Incidents

HRIA: Promising Policies for Overdose Prevention, Response, and Postvention

5. DRUG TESTING POLICY

A policy addressing workplace testing for illegal drugs outlines circumstances in which job applicants and employees will be tested, testing procedures, and consequences of violating the policy. The goal of a drug testing policy is to deter employees from misusing drugs, identify employee's under the influence of substances who may be a safety risk to themselves or others, and to identify employees who may have drug and/or alcohol problems and need treatment.

A drug testing policy may be subject to the limits or requirements of state laws where the employer or union operates. Therefore, employers and unions should check with legal counsel to insure all policies comply with the state laws.

The following sections provides general steps to create a drug testing policy:

- Research applicable state (and federal) legal requirements
- Establish drug testing procedures
- Inform affected applicants and employees of the testing policy
- Select an appropriate lab to conduct testing
- Investigate rehabilitation and treatment options

Special considerations:

- Investigate federally defined regulations for safety sensitive jobs (see Safety Sensitive Activities, p. 27)

- Employers required to or who choose to follow the Federal Drug-Free Workplace Act (DFWA) must follow a standard protocol (*Drug Testing Laboratory Protocols*) [42]
- All drug testing results should be treated as confidential medical information following Health Insurance Portability and Accountability Act (HIPAA) [43]
- Employees with a first time offense should be offered a "second chance" to retain employment after completing treatment (see Second Chance Policy in a Drug-Free Workplace Program, p. 25) [44]
- Create a Recovery Friendly Workplace that aligns with Culture of Care and demonstrates support across the full continuum of care from prevention, to treatment, and to recovery (see Recovery Friendly Workplace, p. 27)

Resources:

National Safety Council: Drug Testing and Opioids

ACLU State-by-State Workplace Drug testing Laws

Second Chance Policy in a Drug-Free Workplace Program

A second chance is intended for employees who show a sincere desire to attain and maintain a drug-free state upon returning to work. Employees unwilling to follow the steps for treatment and return to work plan or who fail to abide by the return to work contract may need to be terminated. Many employees who misuse substances want to stop, but are unable to do it alone. A second chance policy provides employees a chance to receive the treatment and support they need to get into recovery. Second chance policies are a cost effective way for employers and unions to retain employees, save replacement costs to hire and train new employees, gain employee trust for early reporting and reduce fear of termination, save on healthcare costs, decrease absenteeism, and increase loyalty of employees following treatment [45].

The expectations in the policy typically includes:

- An assessment and treatment plan by a certified substance use professional
- Completion of a substance use treatment program (inpatient or outpatient)
- Employees agree to a return to work plan determined by the employer/human resource representative and supervisor
- Completion of follow-up outpatient treatment to monitor progress after return to work

An employer may use an external provider or their EAP (or MAP) to guide the employee through the steps of the policy, to monitor compliance with treatment, and to serve as a liaison between the employer and healthcare providers. Often, there is a return to work contract that states the expectations of the employee and is signed by the employee and employer [40, 46]. Employees assigned to jobs involving safety sensitive activities may be given modified duty (other duties or another job) until they are deemed "fit for duty" to return to their usual work duties [31]. (See the sections on Safety Sensitive Activities (p. 27), and Return to Work, Job Accommodation, and Recovery Treatment (p. 23))

The return to work agreement may include the following items:

- Monitor sobriety by submitting to random and/or regular drug tests.
- Positive drug test may result in termination
- Refusal to take a drug test may result in termination
- Compliance with outpatient or other aftercare program
- Statement about recourse for excessive use of sick or vacation time if illness is not verified by a physician's note
- Expectation to maintain standards of performance and failure may result in corrective action

Since relapse is more common in the early stages of recovery or when an individual is in a stressful and demanding situation [47], it is important these employees be given support and flexibility with their work schedule to allow for adherence to prescribed medication and attendance to outpatient behavioral treatments [33]. Supervisors should be trained to recognize if employees are struggling and encourage the employees seek help from their counselor and human resource personnel before they fail a drug test from a relapse. The return to work contract and continued behavioral treatment are ways to support the employee during the early stages of recovery [48].

Safety Sensitive Activities

Employees who perform safety-sensitive activities may need to be restricted from performing their usual duties while taking opioid prescriptions or related medications. According to the American College of Occupational and Environmental Medicine (ACOEM), safety sensitive tasks are activities that require high levels of cognitive function and judgment that can cause harmful or fatal events if the worker is impaired from substance use [49, 50]. Examples of safety sensitive activities include operating motor vehicles, forklift driving, overhead crane and other heavy equipment operations, or operators of other modes of transportation (i.e. airplane pilot, train conductor).

Employers should identify all jobs involving safety sensitive tasks, and document them consistently in written job descriptions. Employers may provide the treating physician and medical review officer (MRO) with a copy of the job description and a return to work letter template. The return to work letter may ask the physician if there are any safety concerns that must be accommodated in returning the employee to usual duties. The job description provides the physician the information necessary to make a "fit for duty" determination for workers. There is specific guidance on the topic of safety sensitive activities and return to work offered by the Department of Transportation (DOT) and Department of Defense (DOD) that can guide an employer's return to work program [51-56].

Recovery Friendly Workplace

Opioid use disorder is a brain disease that causes individuals to experience intense cravings for opioids, but with treatment, employees in recovery can be fully employed and productive workers in the workplace. Recovery is a process that helps the individual resist drug use, and improve resiliency and mental stability over time. Current evidence-based treatment includes a combination of medication to reduce the cravings and behavioral counseling to help the individuals learn positive behavioral approaches and how to avoid situations that expose them to reusing drugs [57, 58]. The workplace environment can improve the success of recovery by having a strong support team, a structured work schedule, and providing the employee meaningful activities [22, 59]. The workplace organization must be prepared to support an employee in recovery with a positive environment, as relapse is more common when the individual is immersed in stressful situations. With ongoing treatment and greater personal success, the employee in recovery will progress to a more stable mental state.

What should a recovery friendly workplace include?
Recovery Friendly Workplaces can increase the chance of successful return to work by offering jobs with manageable workloads and responsibilities, having a caring culture that promotes empathy for individuals in recovery and address stigmatizing attitudes, and promoting wellness as part of a "sober" lifestyle. Policies should allow the employee in recovery a flexible work schedule and/or time off to continue to receive treatment, a return to work plan with jobs based on the skill and mental stress tolerance of the employee, a structured work environment with clearly established expectations, and ongoing social and organizational support. Employees in recovery may benefit from having access to peer support specialist and support groups either at the worksite or accessible in a community setting [60]. Some employers create "sober crews" of workers so they can support each other and avoid social discussions involving drug and alcohol use.

Steps employers (and unions) should take to become a recovery friendly workplace [22, 60]

- Leadership openly communicates support for a culture of care
- Educate employees to understand and prevent opioid use disorder
- Supportive workplace policies for employees in recovery
- Health insurance and pharmacy benefits to cover substance use treatments
- Training supervisors to appropriately communicate with employees in recovery
- An EAP/MAP program tailored to help employees with substance use needs
- Workplace policies to confront stigmatized behaviors

Resources

Recovery Friendly Workplace Toolkit
https://www.peerrecoverynow.org/ResourceMaterials/RFW_Toolkit_v6.pdf

Recovery Community Organization Directory
https://www.peerrecoverynow.org/field/rco.aspx

6. HEALTHCARE INSURANCE AND PHARMACY COVERAGE

Providing insurance coverage for comprehensive medical and behavioral healthcare, and appropriate forms of pharmaceutical treatments can insure employees have access to the best treatments to curb employee risk for developing opioid misuse and opioid use disorder [61].

Comprehensive healthcare benefits should include coverage of both medical and behavioral health treatments across the substance use continuum from prevention to recovery. Although employees with opioid use disorder (OUD) may be successfully treated, current evidence suggests they generally require intense medical (detox), pharmaceutical management using medication for opioid addiction treatment (MAT) to reduce the strong cravings often experienced by individuals with opioid dependence, and extensive behavioral health counseling [62, 63].

Collaborative Care Model (CCM) is an integrative approach to provide effective mental health care healthcare team, and is often led by the primary care provider with involvement from a behavioral health provider, a psychiatrist, and the patient [62]. Information is shared through the electronic health record (with patient permissions), and allows for greater knowledge about the patient's health situation to be considered in all treatment decisions. There are specific

Current Procedural Terminology (CPT) codes available to cover charges of services and time related to CCM.

Pharmaceutical Coverage and Pharmacy Benefits Manager (PBM)

The health plan's covered pharmacy generally include opioid formularies to treat painful medical conditions, but the condition, medication dosage, and duration of the prescription should limit the risk for developing opioid dependency. The Center for Disease Control and Prevention (CDC) provides guidelines on prescribing opioids for chronic noncancer pain management [64], and for combining opioids with other medications including benzodiazepines [65]. CDC guidelines recommend using immediate-release opioids, starting with low dose, limiting supply to address acute pain, avoiding extended-release long-acting opioids for acute pain, and re-evaluating pain by the physician before giving additional prescriptions [41]. Encourage physicians and pharmacies to consult the Prescription Drug Monitoring Program (PDMP) before filling new prescriptions [66]. The PDMP are state-run electronic databases used to track the prescribing and dispensing of controlled prescription drugs to patients, and are intended to avoid suspected abuse or diversion of controlled substances.

Worker's Compensation

Workers' Compensation insurers provide medical benefits, compensation for lost wages, retraining, and return to work assistance of occupational injury and illness. Many workers' compensation plans follow the CDC guidelines to carefully monitor the use of prescription opioids to decrease the risk of the employee using chronic opioids that may lead to the development of opioid use disorder.

Using Data to Drive Decisions

Data on employee health metrics such as the number of employees prescribed opioids and types of claims for these prescriptions are useful for showing the overall substance use patterns and problems of misuse in the workforce. However, this data is protected by privacy rules (such as the Health Insurance Portability and Accountability Act of 1996) that restricts the sharing of data. Using health claims and pharmacy data is a valuable way to show if a substance use program is effective and if there are gaps in coverage of benefits that may contribute to opioid misuse. Recommendations and guidance on data analytics may be found at the *Kentuckiana Health Collaborative*. Other types of data, often called leading indicators, are useful to document the roll-out of a prevention program (similar to delivery of a safety program). These metrics may include the number of positive drug screens (annual or for return to work), the

number of employees or supervisors attended opioid training or reasonable suspicion training, or the number of employees used EAP/MAP services.

Resources:

NSC's Guide on Navigating Benefits and Health Care Data

Optum's 5 opioid Risk Management Strategies

15.1.3 STRATEGIES: HEALTHCARE INSURANCE AND PHARMACY COVERAGE

1. Verify medical providers follow evidence-based practices for prescribing opioids (per the CDC guidelines for chronic noncancer pain and alternative non-opioid treatments when appropriate for acute or chronic pain).
2. Minimize early exposure to opioids by offering non-opioid and non-pharmaceutical pain management options such as physical therapy, chiropractic, acupuncture, cognitive behavioral therapy, and/or mindfulness.
3. Offer behavioral health services to employees (and their dependents) for treatment of mental illness and substance use disorders and follow mental health parity requirements.
4. Insure behavioral counselors and providers are accessible to employees' physical location for in-person sessions, offer a telehealth option, insure treatment hours accommodate the employee's work hours, and offer crisis management hotlines for emergencies.
5. Insure the behavioral health provider has an adequate number of counselors available to minimize wait times for appointments for treatment and work with your provider if they need to expand their network.
6. Consider expanding insurance coverage for screenings, brief intervention, and referral to treatment (SBIRT) for substance use and prescription drug problems through a third party behavioral health or primary care provider in your health system. Visit SAMHSA's *website* for more detail on SBIRT.
7. Provide coverage (with reasonable copay) for inpatient and outpatient recovery services and behavioral counseling for those with opioid use disorder.

8. When possible, integrate medical, behavioral, and pharmacy services and health records to improve communication and a collaborative care model.
9. Use *NSC Warn Me Labels* on insurance cards

Pharmacy coverage:

10. Insure employee education on risks of opioid prescriptions, and provide safe disposal for unused medications (either a disposal bag or location).
11. Monitor the supply of prescription opioids as recommended by the CDC minimal number of days (3 to 7), monitor dosage (maximum of 50 morphine milligram equivalent (MME)), and require reauthorization by provider regardless of the reason for the medication [67].
12. Check with your PBM to see if they offer an opioid management program (Example: *Express Scripts*).
13. Coordinate with the physician to consult the Prescription Drug monitoring program (PDMP) before prescribing an opioid to avoid multiple opioid prescriptions [66].
14. Offer coverage for medication for opioid addiction treatment (i.e. buprenorphine) as this may be a treatment for employees with opioid use disorder.

Prescription Opioids and Pain Management

Opioids are highly effective to control acute pain but high doses and long-term use of prescription opioids quickly leads to addiction and the diagnosable condition called opioid use disorder [68, 69]. Prescription opioids should be judiciously prescribed for short-term acute pain, and carefully monitored by a physician [64]. Health plans, whether sponsored by the employer or union, should seek information from their insurance company and health system to learn about their in-network providers' treatment approach of using prescription opioids for pain management to insure opioids are prescribed appropriately.

Even though opioids are effective for treating acute pain, often non-opioid treatments are equally or more effective for managing pain [70-72]. Alternative treatments may include nonsteriodal anti-inflammatory or non-pharmaceutical treatments like physical therapy, and cognitive behavioral therapy [64, 67]. Employers and unions should consider providing alternative pain treatments as covered services in their benefits plan.

Opioids are not effective for treating long-term chronic pain [73, 74]. Patients with long-term pain often receive escalating doses of prescription opioids in an attempt to achieve effective pain reduction overtime. Yet there is low therapeutic benefit and increased risk of other health problems with long term opioid use [75, 76]. Patients with a dependency on opioids suffer from strong cravings and fear experiencing symptoms of withdrawal if opioids are abruptly stopped or opioid tapering is poorly controlled [77]. Before a health plan sponsor initiates an opioid prevention program with more strict opioid prescription policies (to follow the CDC guidelines), the health plan must first decide how they will manage employees who already receive opioids to manage pain [64]. An abrupt stoppage of opioids may cause patients to resort to misusing other's prescriptions or to using illicit drugs [77, 78]. The health plan sponsor (employer or union) should work with their healthcare system and providers to tailor a plan to each employee who uses chronic opioids [73, 77, 78]. Patients with severe chronic pain may benefit from treatment through a pain management center as there are a growing number of non-opioid alternative treatments that can help patients manage high pain levels [70].

Treatment and Recovery from Opioid Use Disorder

Employees dependent on opioids suffer from a brain disorder that creates strong cravings to seek more opioids [79, 80]. Current evidence suggests using medication can effectively treat cravings from opioid addiction so the employee can begin to recover and focus on normal activities including work [62, 70, 81]. These employees generally need to go through a detox program to eliminate opioids from their body before initiating medication for addiction treatment (MAT). There are three FDA-approved medications effective for preventing relapse and facilitating recovery (Buprenorphine, Naltrexone, Methadone). The provider should work with the employee to find the appropriate medication and dose, and the health plan sponsor (employer or union) should cover the cost of MAT as part of the pharmacy benefit.

Employees with opioid use disorder may have experienced a dependency to opioids for many years, so treatment and recovery may require receiving inpatient and/or outpatient treatments. In addition to detox and medication for addiction, employees should receive behavioral health counseling to learn how to manage their substance use within the context of their life [82]. This process will take time. Risk of relapse is lessened with ongoing treatments and support [57] and if the cost of treatment is covered by their health plan [83]. The employee would also benefit from having a flexible work schedule and if necessary, paid time off to allow them to attend outpatient treatment.

7. EMPLOYEE OR MEMBER ASSISTANCE PROGRAMS

An employee assistance program (EAP) is an employer-provided benefit intended to help employees improve work life balance due to mental health, substance use, and personal and workplace issues primarily through short-term solution-focused counseling. Unions offer a similar program through a member assistance program (MAP). EAPs or MAPs should offer easily accessible and confidential services.

EAP/MAP services related to opioid misuse prevention should span the continuum of care from prevention to intervention to recovery services. EAP/MAPs may help with prevention support by providing employee education trainings; intervention support through counseling and referral to services; and recovery support through intensive treatment and return to work [33]. More information for each of these topics can be found in other sections: Drug Testing Policy p. 24; Healthcare Insurance and Pharmacy Coverage p. 28; Return to Work, Job Accommodations, and Recovery Treatment p. 23; Critical Incident Response Plan p. 23.

EAP/MAP services may be provided by clinicians employed in-house or contracted by local or national vendors [84]. Services should be provided by trained or certified clinicians (licensed psychologists, master's level social worker, licensed professional counselor, licensed substance abuse professionals, or a certified employee assistance professional). The type of service, whether in-person by a local vendor or via telehealth from local or national providers, often affects the hours of operation. Many national call centers and telehealth sessions are available 24 hours per day, 7 days per week. In-person sessions may be limited to weekday, daytime hours. There may be a trade-off in costs and type of services offered by a local versus national provider. Less cost does not always provide your employees the services they need (see FAQs).

Many EAPs and MAPs are poorly utilized by employees. A behavioral health survey with employees from 2020 showed 39% of employees reported struggling with mental health issues [85] suggesting that many of these employees would benefit from EAP/MAP services. Yet utilization of these services has remained consistently below 10%, even during the pandemic [86]. Most health plans provide employees only the contact information for their EAP/MAP and leave it up to the employee to initiate contact. Some EAP/MAPs fail to have a person answer the call by limiting in-person coverage to standard 9:00-5:00 business hours or using an answering service; many have an inadequate number of clinicians, so first available appointments are weeks or months after the call. Under-utilization may also be due to a lack of

awareness of available services, how to navigate the service, lack of trust in confidentiality, and the stigma that coworkers and supervisor will think less of the employee for using the service.

There are many ways to optimize utilization of EAP/MAP [33, 84, 87]:

- Cover the cost of employee sessions (for a specific number of sessions or all sessions)
- Upper management demonstrates support for EAP/MAP and mental health
- Increase awareness of services by regular promotion and simple description of services
- Build employee trust with providers through in-person provider-delivered presentations on relevant topics
- Emphasize respect for confidentiality in all communications
- Encourage referral for services from human resource and supervisors (supervisor training on how to talk to employees about EAP services)
- Insure the EAP/MAP has an adequate number of clinicians available for timely appointments that meets employee demand
- Insure the location and available services are convenient (location of office, telehealth option, hours of operation, flexibility)

Health plans should monitor the utilization of EAP or MAP services regularly, and make decisions to increase utilization by changing promotion, services, or providers. Refer to the section on Things to Consider When Selecting an EAP (p. 33) to find more guidance on selecting and strengthening an EAP.

15.1.4 STRATEGIES: EAP/MAP

1. EAP/MAP providers may give education on opioid risks
2. Know who is eligible to use your EAP/MAP
3. Know the utilization rate of your EAP/MAP
4. The EAP/MAP providers may organize and/or lead peer support groups

Things to Consider when Selecting an EAP or MAP

When seeking an EAP or MAP for eligible employees, you may send out a Request for Proposal to learn what each company has to offer. The following items can be used to guide questions for potential vendors [84]

1. Verify the provider offers 24-hour coverage, accessible by telephone, and has an intake process.

2. Have them explain their clinical assessment process, short-term counseling offerings, and referral procedures.
3. Ask about available services to support the company's workplace substance abuse program such as ability to consult with supervisors on employee management issues, provision of training programs for supervisors and/or employees related to substance use, assist with development of human resource procedures and policy, and critical incident response services (Resources: *Optum training on responding to traumatic events in the workplace*, *International Critical Incident Stress Foundation's Primer on Critical Incident Stress Management*)
4. Describe their current network of EAP/MAP affiliates and contracted behavioral health providers, credentials or qualifications of the clinicians, and geographical locations of offices.
5. Explain their data management plan, list of metrics monitored, and provide examples of utilization and other reports.
6. Explain their account management, communication between and within contracted organizations, and promotional plan and methods of services.
7. Ask for information about how data is utilized for quality improvement and evaluation.
8. Describe roles and responsibilities of their staff, verify professional liability insurance, and describe any other enhancement services provided.
9. Ask for a fee proposal with services itemized and explain fee structure.
10. Ask them to describe their past experience working with employees in the same industry. EAPs should be familiar with the unique characteristics and challenges faced by employees in unique industries such as construction, mining, agriculture, and transportation among others.

It is also a good idea to test out the customer service for yourself. Send a communication through the website, and make a test call to the 24-hour hotline. Make the call at a time similar to when an employee might call. Assess the time to get a response, number of transfers, and professional response of the counselor.

8. LEGAL CONCERNS

An employer or union opioid prevention program should consider the federal and state labor laws and regulations and the expectation that employees will be kept safe and free from harm while performing their work duties. These laws and regulations are related to medical management, labor laws and contracts, and employee rights for employment. An opioid prevention program should be developed with full knowledge of the laws and reviewed by a

legal counselor. Medical protections include protecting individual health privacy so communications of employee medical information maintains the privacy of the employee's medical condition [43]. This includes information involving drug test results, and return to work plans following treatment. In addition, health plan sponsors should be aware of and follow the expectations in the Mental Health Parity and Addiction Equity Act of 2008 [17].

There are several labor laws and regulations designed to protect the safety and health of the workforce. The Occupational Safety and Health Act of 1970 requires employers provide safe and healthy working condition for all workers [88]. Employers are expected to keep all employees safe from harm and from causing harm to others such as from the harmful influence of drugs while working. Federally-funded organizations and contractors must provide a drug-free workplace (DFWP) which is free of illicit drug use and provides a safe workplace for all employees [89, 90]. The DFWP guidelines require the organization insures the workplace is free of drugs including employees under the influence of drugs. Private businesses may choose to follow some or all of the DFWP policies and procedures.

Employment laws also prohibit discrimination of individuals with disabilities including those suffering from substance abuse (Americans with Disabilities Act of 1990, ADA). The ADA (and updated Americans with Disabilities Act Amendments Act ADAAA of 2008) requires employers to provide reasonable accommodations for employees who have a disability that may impact job performance [91]. An employee in recovery from substance use, including those taking prescription medication for substance use disorders or currently taking prescription opioids may qualify for an accommodation [92].

15.1.5 STRATEGIES: ACCOMMODATIONS FOR EMPLOYEE WITH OUD

- Determine the limitations the employee is experiencing
- Identify how these limitations affect the employee and their job performance
- List specific job tasks that are problematic as a result of the limitations
- Identify accommodations available to reduce or eliminate these problems
- Once accommodations are in place, evaluation effectiveness and determine if modifications or additional accommodations are needed
- Provide supervisors with appropriate training if needed

Employers with 50 or more employees may be required to provide Family Medical Leave Act (FMLA) benefits, short-term time-off for family and medical reasons and retain their health

insurance coverage [93]. Employees may be able to use their benefit to receive intermittent or short-term substance use and recovery treatments. Union requirements may differ from private employers.

16 FREQUENTLY ASKED QUESTIONS (FAQS)

1. Q: How do I communicate with my workforce effectively about opioids, risk of addiction and opioid use disorder?

A: *Using methods of communication that will reach everyone in your diverse workforce is important to increase knowledge of opioids among employees and benefits of using employer and union-sponsored resources. Communicate information and resources to employees through established employer or union organization communication channels such as e-mail, social media posts, and newsletters [94]. Using multiple communication channels is important to increase the reach and accessibility of the information. Here are some effective ways of communicating about opioids and risks of opioid misuse:*

- *Having organization-wide training sessions in-person or on zoom can be effective ways to communicate information to employees and answer any questions they may have surrounding opioids and addiction.*
- *Using appropriate testimonials within the organization when communicating about addiction and opioids can help employees better relate to the issues.*
- *Enlist trusted employees to communicate messages that may be more readily acceptable to general employees.*
- Use infographics and signs to communicate key points, statistics, and tips about opioids that you want to emphasize.
- *The NSC has provided a helpful guide for communicating about opioids in the workplace. Visit the resources section for information and other resources to use when communicating with employees*

2. Q: How can I help employees with opioid related challenges feel comfortable seeking help?

A: *It can be hard for employees to be open about opioid use issues due to the stigmatization around addiction, drug misuse, and fear of consequences. Employees delaying help and treatment for opioids misuse can allow drug use issues to worsen. Building trust with employees is key to increasing help seeking behaviors. Employers and unions can increase trust by:*

- *Having top-down organizational buy in to create a culture of care starting with leadership (see section on Creating a Culture of Care).*
- *Have open conversations about society's opioid crisis and opioid use disorders in the workplace [51].*
- *Use non-stigmatizing language in all communications [44].*
- *If an employee is willing to share their recovery story they can be a source of support for others.*
- *Provide EAP services to employees, and ensure and emphasize confidentiality (See section on EAP).*
- *Have members of leadership (if willing) give testimonials or share stories about their own or other's experience with opioid misuse and addiction.*

3. Q: How can I ensure employees who are seeking help for substance use problems have access to effective treatment quickly?

A: The health plan sponsor (e*mployer or union) should:*

- *Communicate to employees a list of in-network providers for substance use treatment.*
- *Ensure that in-network providers use effective evidence based treatments.*
- *Provide EAP/MAP and telehealth resources to employees with 24/7 or flexible availability.*
- *Provide employees with anonymous substance use emergency hotlines and ensure responsiveness.*
- *Provide health care navigation services (EAP/MAP or Nurse Advocate).*

4. Q: How do I support my employees struggling with OUD if I'm a small employer?

A: *Smaller size employers may struggle with inadequate time and resources to be able to create an opioid prevention program. Smaller employers may get group insurance rates offered through small business organizations or insurance plans (i.e. small business health option programs (SHOP)). Insurance benefits pooled across many companies can provide lower rates. Joining local or state opioid safety coalitions (i.e. NoMODeaths) to combat opioid abuse and*

misuse in your community can show employees that you care and have a positive impact on the community [32]. Here are some resource for offering benefits and Insurance as a Small employer:

- *Small Business Health Options Program (SHOP)- SHOP is an insurance marketplace for small employers (1-50 employees) who want to affordably provide health insurance to their employees.*
- *Look to see what information and options on benefit plans your state's chamber of commerce offers to small businesses. Chambers of Commerce in states like Missouri and California offer group benefit plans to small employers (1-50 employees).*

5. Q: If my business or employees are located in a rural area how can I offer a range of treatment & support options?

A: *While rural employers or union locals may have limited access to treatment facilities, rural employers or unions can still:*

- *Provide telehealth for employees to access both behavioral and medical healthcare. Telehealth options allow employees in rural areas to receive certain treatments misuse by phone with flexible hours.*
- *Use a local pharmacy that is a part of Community Pharmacy Enhanced Services Network (CPESN). Pharmacies a part of this network offer continuous patient care after visiting a health professional or being discharged from a hospital or other healthcare facility. Pharmacists work collaboratively with the patient's other health care team members to provide coordinated care.*
- *Locate and promote local peer support groups in the area to your employees. If there are not peer support groups near your area, try and connect employees to online peer support groups.*
- *For more information and strategies on combating the opioid crisis in a rural community look at the Rural Community Action Guide: Building Stronger, Healthy, Drug-Free Communities*

6. Q: How do we improve EAP/MAP utilization?

A: *Promotion and implementation of an EAP/MAP should include a review of utilization rate report regularly. These reviews should set specific utilization goals and metrics to identify*

specific targets for management focus. Management's focus should be directed at areas that your company or union believes they can improve on with specific measurable processes and outcomes. These metrics should be reviewed regularly and used to create action plans and assess progress.

> *For example, a company's utilization report identified EAP counseling services as underutilized by field workers of the company. The company sets a goal to increase utilization rates of field workers. It measures the process or efforts made to promote and increase utilization by field workers (e.g., track number of toolbox talks given to promote EAP to field workers, the signs posted, emails sent). Review results at next quarter's utilization report to determine improvements and create new plans.*

EASNA has suggested the following strategies for promotion and implementation of EAP services [57]:

- *No cost to employees for a specific number of sessions or all sessions*
- *Emphasize respect for confidentiality in all communications to employees*
- *Insure there is an adequate number of providers for timely appointments to meet employee demand*
- *Frequent written promotion and positive verbal promotion from managers in employee meetings*
- *Manager training to encourage making both formal and informal referrals to employees*
- *Have EAP representatives in the workplace build trust and foster relationships with employees*

7. Q: My EAP/MAP is not as responsive as I would like, what can I do?

A: *EAP/MAP services may not be available for a variety of reasons. If employees are experiencing challenges getting help, define the problem by taking the following step:*

- *Review the EAP/MAP contract terms and agreement of services for your organization to determine if the expected services are covered.*
- *Make a call to the EAP/MAP to test their response and access to help. Conduct the test at various times of the day and night.*
- *If there is a poor response to a call, notify your EAP/MAP and see if they can resolve the issue. If not, consider getting a different EAP/MAP provider.*
- *Ask employees to share their experience about the responsiveness of calling the EAP/MAP. Give the employee the option to report anonymously.*

8. Q: How can an employer integrate our EAP with business operations?

A: *EAPS should work collaboratively with internal organizational departments and other benefit providers (e.g. health insurance) who work in absence management, disability management, return to work programs, injury rehabilitation, and disease management programs. EAP can work with these programs to improve treatment access and case management for chronic disease management programs. To get the highest value from an EAP purchasers will need to:*

- *Request services that can be integrated into their business operations (see sections on Drug Testing, Supervisor Training)*
- *Develop an action plan for EAP integration using EASNA's EAP Purchaser's Guide*
- *Integration and maintenance of EAP integration will require HR staff time and resources. Staff responsibilities related to EAP integration could be explicitly included in the positions' job descriptions.*

9. Q: What are the best options for ensuring treatment coverage if we have employees at multiple geographical locations?

A: *Health plan sponsors (employer or union) whose employees work at a variety of locations should make sure the treatment providers and facilities for "in-network" providers matches the geographical locations of the employees. There is an increasing use of tele-health and virtual options by providers for a variety of health issues, which can be accessed in locations with reliable phone or internet. Employers may consider using health insurance with a national presence that cover providers in many locations.*

10. Q: How do I accommodate an employee at work who is taking prescription medication for opioid addiction treatment (MAT)?

A: *MAT is an evidence-based treatment for employees in recovery to manage strong cravings from opioid addiction. Consult with the employee's prescribing physician to learn how long the employee may need to take MAT, although this treatment may be long-term. Employers should:*

- *Educate employees, supervisors, and leadership about MAT*
- *Develop written policy on how MAT and return to work will be handled*

- *Provide a wide range of evidence based treatment and recovery options for employees. MAT with safe and well managed dosages works best when paired with counseling and social support strategies [33]*
- *Use an EAP/MAP to help track an employee's engagement with treatment services while an employee is in a return to work program*

11. Q: Are there concerns for employees using MAT in the workplace?

A: *Medication for Opioid Addiction Treatment (MAT) is an effective treatment for employees in recovery with opioid use disorder [95]. MAT is more effective when combined with behavioral therapy and counseling to help employees control strong cravings, and manage mental health issues after they have returned to work [63]. Educating employees, supervisors, and leadership on the facts around MAT can help dispel myths, misconceptions, and stigma around MAT in the company or union organization. While using the correct dosage of MAT does not have adverse negative effects on physical and mental functioning, employability, or intelligence, it may impair a person ability to perform safety sensitive tasks [96]. Being educated on how to accommodate employees prescribed MAT can be helpful in a return to work situation. For more info, look at "COB: Safety Sensitive Activities, p. 27."*

17 STATE LEVEL EMPLOYER RESOURCES

State Resources: Focus of the Resource (Prevention= P, Treatment= T, Recovery= R)

Alaska

- Addiction and the Workplace- *https://dhss.alaska.gov/osmap/Documents/WorkplaceAddiction.pdf* (T,R)
- Alaska 211- *https://alaska211.org/search-our-database/* (T,R)

Arizona

- Treatment Options for Opioid Abuse, Misuse, and Dependence- *https://www.pinalcountyaz.gov/sheriff/documents/gettinghelpforopioidmisuseabusedependence.pdf* (T,R)

Arkansas

- Arkansas 211- *https://arkansas211.org/* (T,R)
- Together Arkansas Resources- *https://togetherarkansas.com/resources/* (P,T,R)

Colorado

- Colorado Opioid Treatment Programs- *https://drive.google.com/file/d/0B_Qu7DIYJwx7d0NzTE1yelBrVTQ/view?resourcekey=0-zCDLXFeCptTz93qq0NxdfA* (T)

Connecticut

- Connecticut Community for Addiction Recovery (CCAR)- *https://ccar.us/* (R)
- The Opioid Crisis and Connecticut's Workforce: *https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/environmental_health/occupationalhealth/Opioid-conference-writeup_FINAL-FINAL_11_28_18-(2).pdf* (P)

Florida

- Dose of Reality: Get Support (Business)- *https://doseofrealityfl.com/businesses.html* (P)

Georgia

- Dose of Reality: Get Support (Business)- *https://doseofrealityga.org/get-support/business/* (P)

Hawaii

- Hawaii Opioid Initiative: (Business)- *https://www.hawaiiopioid.org/business/* (P)
- List of Hawaii Treatment Centers- *https://www.hawaiiopioid.org/wp-content/uploads/2019/07/2017-2019-Treatment-Providers-.pdf* (T)

Illinois

- Illinois Helpline for Opioids and Other Substances: 1-833-2FINDHELP (T)

Indiana

- INConnect- *https://secure.in.gov/apps/fssa/providersearch/home* (T,R)

Kentucky

- Find Help Now KY- *https://findhelpnowky.org/?utm_source=Vimarc&utm_medium=display&utm_term=&utm_content=ky-chamber-of-commerce&utm_campaign=ky-chamber-of-commerce* (T)
- Opioid in Kentucky Abuse- The Business Community's Perspective- *https://www.kychamber.com/sites/default/files/pdfs/Opioid%20Abuse%20in%20Kentucky%202019%20-%20website.pdf* (P,T,R)

Maryland

- Opioids in the Maryland Workplace: Challenges and Solutions- *https://health.maryland.gov/phpa/OEHFP/EH/Shared%20Documents/Opioids%20and%20Work/MarylandOpioidWorkplaceReport_091619.pdf* (P)
- MDHope: Opioid-Related Text Message Support: *https://211md.org/about/text-messages/md-hope/* (T,R)

Michigan

- MDHHS: Get Help Now (Behavioral Health)- *https://www.michigan.gov/mdhhs/keep-mi-healthy/mentalhealth/drugcontrol/welcome/get-help-now-behavioral-health_1* (T)

Minnesota

- Minnesota Opioid Epidemic Response: Employer Toolkit- *https://www.health.state.mn.us/communities/opioids/communities/employertoolkit.html* (P,T,R)
- Minnesota Recovery Connection- *https://minnesotarecovery.org/* (R)

Mississippi

Missouri

- Recovery Friendly Missouri- *https://recoveryfriendlymo.com/* (P,T,R)
- NOMODEATHS- *https://www.nomodeaths.org/* (P,T,R)

Montana

- Opioids in the Montana Workforce: *https://erd.dli.mt.gov/_docs/work-comp-research/Montana-Opioids-by-Industry-Occupation.pdf* (P)

New Hampshire

- New Hampshire Works for Recovery- *https://www.recoveryfriendlyworkplace.com/contact* (P,T,R)
- The DoorWay New Hampshire- *https://www.thedoorway.nh.gov/* (T)

New Mexico

- Recovery Friendly Workplace New Mexico- *https://www.recoveryfriendlyworkplacesnm.org/*
- New Mexico Crisis and Access Line- *https://nmcrisisline.com/* (T,R)

North Carolina

- North Carolina Opioid Resources- *https://opioidresources.ncdoj.gov/resources/* (P,T,R)

North Dakota

- Recovery Reinvented Workplace- *https://recoveryreinvented.com/* (P,T,R)

Ohio

- Ohio Chamber of Commerce: Opioid Toolkit- *https://ohiochamber.com/opioid-toolkit/* (P,T,R)
- Strategies for Helping Individuals Impacted by Opioid Use Disorder- *https://jfs.ohio.gov/owd/WorkforceProf/Docs/OWDOpioidToolkit.stm* (P,T,R)

Oregon

- Reverse Overdose Oregon- *https://www.reverseoverdose.org/* (P,R)

Pennsylvania

- Pennsylvania Recovery Friendly Workplaces- *https://recoveryfriendlypa.org/* (P,T,R)
- PA Department of Drug and Alcohol Programs: Find Treatment- *https://apps.ddap.pa.gov/gethelpnow/CareProvider.aspx* (T)

Rhode Island

- Rhode Island Recovery Friendly Workplace Initiative- *https://recoveryfriendlyri.com/* (P,T,R)
- Prevent Overdose RI- Get Help- *https://preventoverdoseri.org/get-help/* (P,T,R)

South Carolina

- Just Plain Killers: Find Help- *https://justplainkillers.com/find-help/* (Treatment)

South Dakota

- Avoid Opioid: Resource Hotline- *https://www.avoidopioidsd.com/find-help/resource-hotline/* (Prevention, Treatment, Recovery)

Tennessee

- The Tennessee Redline- *https://tntogether.com/resources/tennessee-redline/* (T)

Texas

- Texas HHS Outreach, Screening, Assessment & Referral- *https://www.hhs.texas.gov/services/mental-health-substance-use/mental-health-substance-use-resources/outreach-screening-assessment-referral* (P,T,R)

Utah

- Opidemic: Get Help- *https://www.opidemic.org/get-help/* (Treatment/Recovery)

Vermont

- VT Helplink- *https://vthelplink.org/* (T,R)

Virginia

- Resource Guide: Opioid Public Health Emergency- *https://www.vdh.virginia.gov/content/uploads/sites/127/2017/12/Opioid-Resources-VSP-Div-II.pdf* (T,R)

Washington

- Stop Overdose: Crisis and treatment resources- *https://stopoverdose.org/getting-help/crisis-and-treatment-resources/* (T,R)

West Virginia

- West Virginia State Substance Abuse Response Plan- *https://dhhr.wv.gov/office-of-drug-control-policy/news/Documents/FINAL%20-%20West%20Virginia%202020_2022%20Council%20Substance%20Use%20Plan_January%2020%2C%202020%20%28as%20filed%29.pdf* (T,R)

Wisconsin

- Dose of Reality Wisconsin- *https://doseofrealitywi.gov/get-support/business/* (P)

18 SPECIAL TOPICS/CALLOUT BOXES

Employer Versus Union Health Plans (pg.12)

Cause and effects of stigma (pg. 17)

19 TERMS LIST

Addiction
A primary, chronic, neurobiologic disease with genetic, psychosocial, and environmental factors influencing its development and manifestation. Characterized by behaviors that include impaired control over drug use, compulsive use, cravings, and continued use despite harm.

Behavioral Health Care (Mental Health Care)
Health care service and delivery involved in psychological assessment and intervention by certified providers from several specialties (counselors, psychiatry, neurology, social work). This type of care includes but is not limited to psychological screening and testing, psychotherapy and family therapy, and neuropsychological rehabilitation.

Behavioral Health Insurance
Offers coverage of mental and behavioral health services. Plans ideally cover treatment for psychotherapy and counseling, mental and behavioral health inpatient services, and substance use disorder treatment.

Chronic Pain

MAT (Medication for Addiction Treatment)
Medication used to treat substance use disorders as well as sustain recovery and prevent overdose.

Mental Health Parity and Addiction Equity Act
Enacted in 2008 and requires insurance coverage for mental health conditions, including substance use disorders, to be no more restrictive than insurance coverage for other medical conditions.

MRO Medical Review Officer
A physician who determines how drug test results will be reported to an employer or union in the context of all information including the test result and the donor interview.

Substance Abuse
A pattern of compulsive substance use marked by recurrent significant social, occupational, legal, or interpersonal adverse consequences

Substance Misuse
The use of a substance for unintended purpose or intended purpose (i.e. prescription) but in improper amounts or doses.

Pain that is experienced most days or every day, and has lasted three or more months.

Collaborative Care Model
An integrative approach for effective mental health care provided by a care team often led by the primary care provider and includes a behavioral health provider, a psychiatrist, and the patient.

DFWA Drug Free Workplace Act
States a drug-free workplace policy is required for any organization receiving a federal grant of any size or any organization that receives a federal contract of $100,000 or more.

DFWP Drug Free Workplace Program
Drug-Free workplace programs are comprehensive programs that address illicit drug use by federal employees and in federally regulated industries.

Substance Use
The use of tobacco, alcohol, prescription drugs, or illicit drug.

Substance Use Disorder (opioid use disorder)
The clinical term describing a syndrome consisting of a coherent set of signs and symptoms that cause significant distress and or impairment during the same 12-month period. When caused by use of opioids, defined as opioid use disorder.

Tapering
A practice in pharmacotherapy of lowering the dose of medication incrementally over time to help prevent or reduce adverse experiences as the patients' body makes adjustments and adapts to lower and lower doses.

Workplace Culture
A set of beliefs, norms, and values that are apparent in the workplace.

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Disclaimers These guidelines provide general information on the topic of addiction in the workplace but should not be taken as legal advice. Please consult an employment attorney to discuss the content of your substance use program. The content of the guidelines are solely the responsibility of the authors and do not necessarily represent the official views of the National Institute of Health.

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20 REFERENCES

1. National Safety Council and National Opinion Research Center. *Substance Use Disorders by Occupation*. 2020 [cited 2022 June 6]; Available from: https://www.nsc.org/getmedia/9dc908e1-041a-41c5-a607-c4cef2390973/substance-use-disorders-by-occupation.pdf.
2. National Center for Health Statistics. *Drug Overdose Deaths in the U.S. Top 100,000 Annually*. 2021 [cited 2022 February 24,]; Available from: https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2021/20211117.htm.
3. U.S. Bureau of Labor Statisitics and U.S. Department of Labor. *Unintentional overdoses accounted for 388 workplace deaths in 2020*. 2021 [cited 2022 June 6]; Available from: https://www.bls.gov/opub/ted/2022/unintentional-overdoses-accounted-for-388-workplace-deaths-in-2020.htm.
4. Shaw, W.S., C. Roelofs, and L. Punnett, *Work Environment Factors and Prevention of Opioid-Related Deaths.* American Journal of Public Health, 2020. 110(8): p. 1235-1241.

5. Hawkins, D., et al., *Opioid-related overdose deaths by industry and occupation-Massachusetts, 2011-2015.* American Journal of Industrial Medicine, 2019. 62(10): p. 815-825.
6. Dong, X.S., R.D. Brooks, and S. Brown, *Musculoskeletal Disorders and Prescription Opioid Use Among U.S. Construction Workers.* Journal of Occupational and Environmental Medicine, 2020. 62(11): p. 973-979.
7. Kowalski-McGraw, M., et al., *Characterizing the Interrelationships of Prescription Opioid and Benzodiazepine Drugs With Worker Health and Workplace Hazards.* Journal of Occupational and Environmental Medicine, 2017. 59(11): p. 1114-1126.
8. Goplerud, E., S. Hodge, and T. Benham, *A Substance Use Cost Calculator for US Employers With an Emphasis on Prescription Pain Medication Misuse.* Journal of occupational and environmental medicine, 2017. 59(11): p. 1063-1071.
9. Centers for Disease Control and Prevention. *2018 Annual Surveilance Report of Drug-Related Risks and Outcomes: United States*. 2018 [cited 2021 January 18]; Available from: https://www.cdc.gov/drugoverdose/pdf/pubs/2018-cdc-drug-surveillance-report.pdf.
10. Krueger, A.B., *Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate.* Brookings Papers on Economic Activity, 2017. 2017(2): p. 1-87.
11. Weisner, C., et al., *Substance use, symptom, and employment outcomes of persons with a workplace mandate for chemical dependency treatment.* Psychiatr Serv, 2009. 60(5): p. 646-54.
12. Rice, J.B., et al., *Estimating the costs of opioid abuse and dependence from an employer perspective: a retrospective analysis using administrative claims data.* Applied Health Economics and Health Policy, 2014. 12(4): p. 435-446.
13. Kelly, J.F., et al., *Prevalence and pathways of recovery from drug and alcohol problems in the United States population: Implications for practice, research, and policy.* Drug and Alcohol Dependence, 2017. 181: p. 162-169.
14. The National Institute for Occupational Safety and Health (NIOSH). *Ergonomics and Musculoskeletal Disorders*. 2018 [cited 2018 October 25]; Available from: https://www.cdc.gov/niosh/topics/ergonomics/.
15. U. S. Department of Labor and Occupational Safety & Health Administration. *Ergonomics*. [cited 2022 June 6]; Available from: https://www.osha.gov/ergonomics.
16. The Center for Construction Research and Training. *Ergonomics Training Programs and Resources*. [cited 2022 June 6,]; Available from: https://www.cpwr.com/research/research-to-practice-r2p/r2p-library/other-resources-for-stakeholders/construction-ergonomic-research-solutions/.
17. U.S. Department of Labor. *FAQS About Mental Health and Substance Use Disorder Parity Implementation and the Consolidated Appropriations Act, 2021 Part 45*. 2021 [cited 2021 September 23]; Available from: https://www.dol.gov/sites/dolgov/files/EBSA/about-ebsa/our-activities/resource-center/faqs/aca-part-45.pdf.
18. Gallup. *State of the Global Workplace: 2021 Report*. 2021 [cited 2021 October 11]; Available from: https://www.gallup.com/file/workplace/349484/state-of-the-global-workplace-2021-download.pdf.

19. American Psychiatric Association. *Working Well: Leading a Mentally Healthy Business-Build a Culture of Well Being*. 2016 [cited 2021 October 11]; Available from: https://workplacementalhealth.org/getmedia/5e4af79b-2834-430d-b2ce-e801a26c084a/working-well-toolkit.
20. Worline, M. and J.E. Dutton, *Awakening compassion at work: The quiet power that elevates people and organizations*. 2017, Oakland, CA: Berrett-Koehler Publishers.
21. Spencer-Thomas, S. *We Can't Fix Mental Helath With Duct Tape: A New Frontier in Safety*. 2019 [cited 2021 October 11]; Available from: https://static1.squarespace.com/static/5e865c3366922b230fc54525/t/5eb8d5b580e692462fba4509/1589171640096/cover_story.pdf.
22. Substance Abuse and Mental Health Services Administration. *Substance Use Disorders Recovery with a Focus on Employment and Education*. 2021 [cited 2021 September 14th]; Available from: https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/pep21-pl-guide-6.pdf.
23. American Psychological Association. *APA Dictionary of Psychology: Stigma*. [cited 2021 October 15]; Available from: https://dictionary.apa.org/stigma.
24. Roche, A., V. Kostandinov, and P. Ken, *The Stigma of Addiction in the Workplace*, in *The Stigma of Addiction*, J. Avery and J. Avery, Editors. 2019, Springer. p. 167-199.
25. U.S. Department of Health and Human Services and Office of the Surgeon General. *Facing Addiction in America: The Surgeon General's Spotlight on Opioids*. 2018; Available from: https://addiction.surgeongeneral.gov/sites/default/files/Spotlight-on-Opioids_09192018.pdf.
26. U.S. Department of Health and Human Services and Office of the Surgeon General. *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health*. 2016 [cited 2021 October 19]; Available from: https://addiction.surgeongeneral.gov/sites/default/files/surgeon-generals-report.pdf.
27. Livingston, J.D., et al., *The effectiveness of interventions for reducing stigma related to substance use disorders: a systematic review.* Addiction, 2012. 107(1): p. 39-50.
28. Substance Abuse and Mental Health Services Administration. *Results from the 2017 National Survey on Drug Use and Health: Table 5.53B*. 2018 [cited 2021 October 10]; Available from: https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHDetailedTabs2017/NSDUHDetailedTabs2017.htm#tab5-54B.
29. Pivovarova, E. and M.D. Stein, *In their own words: language preferences of individuals who use heroin.* Addiction, 2019. 114(10): p. 1785-1790.
30. National Association of Home Builders. *Supervisor Training: Addressing Opioid Misuse at the Worksite- Prevention Toolkit*. 2019 [cited 2021 January 20]; Available from: https://www.nahb.org/-/media/NAHB/advocacy/docs/industry-issues/opioid-resource-page/supervisor-training-opioid-misuse-prevention.pdf.
31. National Association of Home Builders. *Supervisor Training: Adressing Opioid Missuse at the Worksite- Intervention Toolkit*. 2019 [cited 2021 September 14th]; Available from: https://www.nahb.org/-/media/NAHB/advocacy/docs/industry-issues/safety/opioid-resource-page/supervisor-training-opioid-misuse-intervention.pdf.
32. National Association of Home Builders. *Supervisor Training: Addressing Opioid Misuse at the Worksite- Recovery and Return to Work Toolkit*. 2019 [cited 2021 January 20];

Available from: https://www.nahb.org/-/media/NAHB/advocacy/docs/industry-issues/safety/opioid-resource-page/supervisors-training-return-to-work.pdf.
33. National Safety Council. *Opioids at Work Employer Toolkit*. 2019 [cited 2021 October 8]; Available from: https://www.nsc.org/pages/prescription-drug-employer-kit.
34. National Institute on Drug Abuse. *Words Matter- Terms to Use and Avoid When Talking About Addiction*. 2021 [cited 2021 October 7]; Available from: https://www.drugabuse.gov/nidamed-medical-health-professionals/health-professions-education/words-matter-terms-to-use-avoid-when-talking-about-addiction.
35. McLellan, A.T., et al., *Drug Dependence, a Chronic Medical Illness: Implications for Treatment, Insurance, and Outcomes Evaluation.* Survey of Anesthesiology, 2001. 45(4): p. 253-254.
36. Rodman, C.P., et al., *Peer Advocacy for Construction Workers Struggling with Substance Use and Mental Health.* The Center for Construction Research and Training, 2020.
37. National Institute of Drug Abuse. *Model Plan for a Comprehensive Drug-Free Workplace Program*. 1989 [cited 2020 29 Dec]; Available from: https://www.samhsa.gov/sites/default/files/workplace/ModelPlan508.pdf.
38. Substance Abuse Program Administrators Association. *Supervisor Reasonable Suspicion Testing Training*. [cited 2021 September 14th]; Available from: https://www.sapaa.com/page/STS_Supervisor.
39. Job Accommodation Network. *Effective Accommodation Practices (EAP) Series: Employees with Executive Functioning*. 2018; Available from: https://askjan.org/articles/EAPS/upload/ExecFunctionEAP.doc
40. Job Accommodation Network. *Last Chance Agreements for Employees with Drug and Alcohol Addictions*. [cited 2021 September 7]; Available from: https://askjan.org/publications/consultants-corner/Last-Chance-Agreements-for-Employees-with-Drug-and-Alcohol-Addictions.cfm?csSearch=3747824_1.
41. Beyer, C. and B. VandePol. *Leading a Company in the Aftermath of a Suicide Loss*. 2019 [cited 2021 October 4]; Available from: https://cfma.org/articles/leading-a-company-in-the-aftermath-of-a-suicide-loss.
42. U.S. Department of Transportation. *DOT Rule 49 CFR Part 40 Section 40.87: What are the Cutoff Concentrations for Drug Tests*. [cited 2021 September 28]; Available from: https://www.transportation.gov/odapc/part40/40-87.
43. Centers for Disease Control and Prevention. *Health Insurance Portability and Accountability Act of 1996*. 2018 [cited 2021 September 23]; Available from: https://www.cdc.gov/phlp/publications/topic/hipaa.html.
44. National Safety Council. *Opioids at Work Employer Toolkit: Building a Recovery-Friendly Workplace*. 2019 [cited 2021 September 7]; Available from: https://www.nsc.org/getmedia/3ded8f5b-32a2-4470-827e-e99eed6fe2d7/building-recovery-friendly-workplace.pdf.aspx.
45. Substance Abuse and Mental Health Services Administration. *Prepare Your Workplace*. August 4, 2020 [cited 2021 January 20]; Available from: https://www.samhsa.gov/workplace/toolkit/plan-implement-program/prepare-workplace.
46. National Safety Council. *Opioids at Work Employer Toolkit: Drug Testing and Opioids*. 2019 [cited 2021 September 7]; Available from:

https://www.nsc.org/getmedia/e91b2608-2584-43d9-b8ef-3d5a26cb1fdc/understanding-drug-testing-and-opioids.pdf.aspx.
47. Melemis, S.M., *Relapse Prevention and the Five Rules of Recovery.* Yale Journal of Biology and Medicine, 2015. 88(3): p. 325-32.
48. Middaugh, N., et al. *Opioids and the Workplace: An Employer Toolkit for Supporting Prevention, Treatment, and Recovery*. 2020 [cited 2021 January 15]; Available from: https://khcollaborative.org/wp-content/uploads/2020/08/2.0-Opioids-and-the-Workplace-FINAL-4.21.2020-1.pdf.
49. Hegmann, K., et al., *Impacts of differences in epidemiological case definitions on prevalence for upper-extremity musculoskeletal disorders.* Human Factors, 2014. 56(1): p. 191-202.
50. Hegmann, K.T., et al., *ACOEM practice guidelines: opioids and safety-sensitive work.* Journal of Occupational and Environmental Medicine, 2014. 56(7): p. e46-53.
51. Pipline and Hazardous Materials Safety Administration. *Drug and Alcohol Testing*. [cited 2021 September 7]; Available from: https://www.ecfr.gov/cgi-bin/text-idx?SID=b3c409a28dc399274d954f15c934190a&mc=true&node=pt49.3.199&rgn=div5.
52. Federal Motor Carrier Safety Administration. *Controlled Substances and Alcohol Use and Testing*. [cited 2021 September 8]; Available from: https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=1&ty=HTML&h=L&mc=true&=PART&n=pt49.5.382.
53. Federal Railroad Administration. *Control of Alcohol and Drug Use*. [cited 2021 September 8]; Available from: https://www.ecfr.gov/cgi-bin/text-idx?SID=44eba9e08fd7b7e21c4430c8efa4acdd&node=pt49.4.219&rgn=div5.
54. Federal Aviation Administration. *Drug and Alcohol Testing Program*. [cited 2021 September 8]; Available from: https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title14/14cfr120_main_02.tpl.
55. Federal Transit Administration. *Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations*. [cited 2021 September 8]; Available from: https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title49/49cfr655_main_02.tpl.
56. United States Coast Guard. *Chemical Testing*. [cited 2021 September 8]; Available from: https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr;sid=de2439b0a1fb0c273b34d232e95630f8;rgn=div5;view=text;node=46:1.0.1.2.16;idno=46;cc=ecfr.
57. National Institute on Drug Abuse. *Principles of Effective Treatment*. 2020 [cited 2021 September 23]; Available from: https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/principles-effective-treatment.
58. Madras, B.K., et al., *Improving Access to Evidence-Based Medical Treatment for Opioid Use Disorder: Strategies to Address Key Barriers within the Treatment System.* National Academy of Medicine, 2020.
59. National Institute for Occupational Safety and Health. *Workplace Supported Recovery Program*. July 27, 2020 [cited 2021 September 10]; Available from: https://www.cdc.gov/niosh/topics/opioids/wsrp/default.html.
60. Recovery Friendly Workplace, et al. *The Recovery Friendly Workplace Toolkit*. 2021 [cited 2021 September 28]; Available from: https://www.drugfreect.org/Customer-Content/www/CMS/files/DHMAS001_RFW-Toolkit-Full.pdf.

61. Preventing Prescription Abuse in the Workplace. *Structuring a Health Benefits Package That Is Sensitive to Prescription Drug Misuse Issues*. [cited 2021 January 20]; Available from: https://www.opioidpreventionatwork.org/assets/structuring_health_benefits.pdf.
62. Wakeman, S.E., et al., *Comparative Effectiveness of Different Treatment Pathways for Opioid Use Disorder.* JAMA Network Open, 2020. 3(2): p. e1920622.
63. Substance Abuse and Mental Health Services Administration. *MAT Medications, Counseling, and Related Conditions*. 2021 [cited 2021 October 13th]; Available from: https://www.samhsa.gov/medication-assisted-treatment/medications-counseling-related-conditions.
64. Centers for Disease Control and Prevention. *Guideline for Prescribing Opioids for Chronic Pain - Improving Practice through Recommendations*. 2017 [cited 2021 October 19]; Available from: https://www.cdc.gov/drugoverdose/pdf/guidelines_factsheet-a.pdf.
65. Pandalai, S.P., P.A. Schulte, and A. S.E. *Prescription Opioid and Benzodiazepine Medications and Occupational Safety and Health: Information for Employers and Healthcare Providers*. 2021 [cited 2021 October 19]; Available from: https://www.cdc.gov/niosh/docs/2021-116/pdfs/2021-116.pdf?id=10.26616/NIOSHPUB2021116.
66. Centers for Disease Control and Prevention. *Prescription Drug Monitoring Programs (PDMPs)*. 2021 [cited 2021 October 19]; Available from: https://www.cdc.gov/drugoverdose/pdmp/index.html.
67. Centers for Disease Control and Prevention. *Nonopioid Treatments for Chronic Pain*. 2016 [cited 2021 October 19]; Available from: https://www.cdc.gov/drugoverdose/pdf/nonopioid_treatments-a.pdf.
68. Volkow, N., H. Benveniste, and A.T. McLellan, *Use and Misuse of Opioids in Chronic Pain.* Annual Revue of Medicine, 2018. 69: p. 451-465.
69. Sharma, B., et al., *Opioid Use Disorders.* Child and Adolescent Psychiatric Clinics of North America, 2016. 25(3): p. 473-87.
70. National Academies of Sciences Engineering and Medicine, et al., *The National Academies Collection: Reports funded by National Institutes of Health*, in *Medications for Opioid Use Disorder Save Lives*, M. Mancher and A.I. Leshner, Editors. 2019, National Academies Press (US): Washington (DC).
71. Krebs, E.E., et al., *Effect of Opioid vs Nonopioid Medications on Pain-Related Function in Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain: The SPACE Randomized Clinical Trial.* JAMA, 2018. 319(9): p. 872-882.
72. Price, T.J., et al., *Transition to chronic pain: opportunities for novel therapeutics.* Nature Reviews Neuroscience, 2018. 19(7): p. 383-384.
73. Dowell, D., T.M. Haegerich, and R. Chou, *CDC Guideline for Prescribing Opioids for Chronic Pain - United States, 2016.* Recommendations and Reports: Morbidity and Mortality Weekly, 2016. 65(1): p. 1-49.
74. Agency Medical Director's Group. *Interagency Guideline on Prescribing Opioids for Pain Washington State*. 2015 [cited 2020 December 30]; Third Edition:[Available from: http://www.agencymeddirectors.wa.gov/Files/2015AMDGOpioidGuideline.pdf.
75. De Sola, H., et al., *Prevalence of Therapeutic use of Opioids in Chronic non-Cancer Pain Patients and Associated Factors: A Systematic Review and Meta-Analysis.* Frontiers in Pharmacology, 2020. 11: p. 564412.

76. Häuser, W., et al., *All-cause mortality in patients with long-term opioid therapy compared with non-opioid analgesics for chronic non-cancer pain: a database study.* BMC Med, 2020. 18(1): p. 162.
77. Covington, E.C., et al., *Ensuring Patient Protections When Tapering Opioids: Consensus Panel Recommendations.* Mayo Clin Proc, 2020. 95(10): p. 2155-2171.
78. U.S. Department of Health and Human Services. *HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics*. 2019 [cited 2021 October 19]; Available from: https://www.hhs.gov/opioids/sites/default/files/2019-10/Dosage_Reduction_Discontinuation.pdf.
79. American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5)*. 2013, Arlington, VA: American Psychiatric Publishing.
80. National Institute on Drug Abuse. *What is drug addiction*. Drugs, Brains, and Behavior: The Science of Addiction 2020 [cited 2021 October 19]; Available from: https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drug-misuse-addiction.
81. National Institute on Drug Abuse. *Medications to Treat Opioid Use Disorder Research Report: Overview*. 2021 [cited 2021 October 19]; Available from: https://www.drugabuse.gov/publications/research-reports/medications-to-treat-opioid-addiction/overview.
82. National Institute on Drug Abuse. *Effective Treaments for Opioid Addiction*. 2016 [cited 2021 October 15]; Available from: https://www.google.com/search?q=NIDA&rlz=1C1GCEA_enUS955US955&ei=SbRpYceGItCGtQaWk4zoAg&ved=0ahUKEwiHz93Z8szzAhVQQ80KHZYJAy0Q4dUDCA4&uact=5&oq=NIDA&gs_lcp=Cgdnd3Mtd2l6EAMyEQguELEDEMcBENEDEJECEJMCMgQILhBDMgoILhDHARCvARBDMgQILhBDMgQILhBDMgsILhCABBDHARCvATIICAAQgAQQsQMyCAgAEIAEELEDMgQIABBDMggIABCABBCxAzoHCAAQRxCwA0oECEEYAFC9DFjSEGCFFGgBcAJ4AYABpwOIAegIkgEHMi0zLjAuMZgBAKABAcgBCMABAQ&sclient=gws-wiz.
83. National Institute of Drug Abuse, *Principles of Drug Addiction Treatment: a Research-Based Guide*. Third ed. 2018: CreateSpace Independent Publishing Platform. 74.
84. EASNA. *Selecting and Strengthening Employee Assistance Programs: A Purchaser's Guide*. 2009 [cited 2020 December 30]; Available from: https://archive.hshsl.umaryland.edu/bitstream/handle/10713/4006/EASNA-PURCHASERS-GUIDE-TO-EAPs-FINAL-2009%20%20Attridge%20etal.pdf?sequence=1&isAllowed=y.
85. The Standard. *COVID-19 Pandemic: Impact on Behavioral Health in the Workplace*. 2020 [cited 2021 October 4,]; Available from: https://www.standard.com/eforms/21962.pdf.
86. Brooks, D.C. and J. Ling, *"Are We Doing Enough": An Examination of the Utilization of Employee Assistance Programs to Support the Mental Health Needs of Employees During the COVID-19 Pandemic.* Journal of Insurance Regulation, 2020. 39(8): p. 1-34.
87. Spencer-Thomas, S. *Kicking the Tires of Your Employee Assistance Program (EAP): 15 Questions Workplaces Should Ask to Strengthen the Mental Health Safety Net*. 2019 [cited 2021 October 4]; Available from: https://www.sallyspencerthomas.com/dr-sally-

speaks-blog/2019/3/19/kicking-the-tires-of-your-employee-assistance-program-eap-15-questions-workplaces-should-ask-to-strengthen-the-mental-health-safety-net.
88. Occupational Safety & Health Administration. *Occupational Safety and Health Act of 1970: Section 5*. [Law] 1970 [cited 2021 January 19]; Available from: https://www.osha.gov/laws-regs/oshact/section5-duties.
89. *Drug-Free Workplace Act of 1988*. 1988 [cited 2021 September 7]; Available from: https://uscode.house.gov/view.xhtml?req=(title:41%20chapter:81%20edition:prelim)%20.
90. Substance Abuse and Mental Health Services Administration. *Federal Laws and Regulations*. 2020 [cited 2021 September 23]; Available from: https://www.samhsa.gov/workplace/legal/federal-laws.
91. U.S. Commission on Civil Rights. *Chapter 4: Substance Abuse Under the ADA*. 2008 [cited 2021 September 23]; Available from: https://www.usccr.gov/files/pubs/ada/ch4.htm.
92. Attonerys at the Legal Action Center. *Know Your Rights: Rights for Individuals on Medication-Assisted Treatment. HHS Publication No. (SMA) 09-449*. 2009 [cited 2021 January 28]; Available from: https://atforum.com/documents/Know_Your_Rights_Brochure_0110.pdf.
93. *The Family and Medical Leave Act of 1993: Leave for Treatment of Substance Abuse*. 1993 [cited 2021 September 23]; Available from: https://www.law.cornell.edu/cfr/text/29/825.119.
94. Substance Abuse and Mental Health Services Administration. *Plan and Implement a Program*. 2020 [cited 2021 October 14]; Available from: https://www.samhsa.gov/workplace/toolkit/plan-implement-program.
95. Substance Abuse and Mental Health Services Administration. *Tip 63: Medications for Opioid Use Disorder*. 2018 2021 [cited 2021 October 13]; Available from: https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP21-02-01-002.pdf.
96. Howard, J., et al., *Medication-Assisted Treatment for Opioid Use Disorder.* Workplace Solutions, 2019.

E. Monthly Health Fund meeting script_followup

Monthly Health Fund follow-up meeting:

Date: _____

Organization: _____

Participant: _____

Notes from past Interview:	
1. Are you in the process of making any changes to your opioid prevention program? If yes please describe (date of adoption,	

implementations strategies, how are you measuring effectiveness of the change, participation rates in programs for workers, adherence to and enforcement of policies, and methods for disseminating programs) a. Have you made any changes to existing opioid prevention programming? If so please explain	
2. Did you review the guidelines? If yes, what did you find useful and what do you think is missing from the guidelines? a. Did you complete the needs assessment? b. Did you follow the process guide, steps 1, 2, and 3? c. What did you list on your inventory of resources? d. Did you make a plan?	
3. What are challenges or barriers are you encountering in trying to implement your program?	

G. Data management of Administrative Health Claims and Worker Surveys

Data management of Administrative Health Claims and Worker Surveys

a) Administrative Health Claims
    a. Inclusion
        i. Health plan member (as opposed to dependent or retired) at some point during study period (6/1/2019-5/31/2022), per census records
            1. Could transition to retired status during study period, but needed to start as member
    b. Exclusion
        i. Missing eligibility or termination dates in census records
        ii. Cancer diagnosis
            1. Ever received ICD-10 code in medical claims data: C00.x–C26.x, C30.x–C34.x, C37.x– C41.x, C43.x, C45.x–C58.x, C60.x–C76.x, C77.x–C85.x, C88.x, C90.x–C97.x)
    c. Initial work
        i. Medical claims (“claims”), pharmacy claims (“fills”), census data was received “piecemeal”
            1. By timeframe (i.e, quarterly) and type (plan member, dependent, retired)

ii. Consolidate files into single datasets for claims, fills, census data and work histories
iii. Create eligible/valids file—this is the list of members eligible for the study, based on above criteria
iv. Limit all analysis data (claims, fills) to members in the eligible/valids list

d. Opioid/claim linkage: The process of linking opioid prescriptions (from pharmacy fills) to diagnoses (from medical claims) involves two main steps: 1) assign opioid fills to claims based on timing and acuity, and 2) assign opioid refills to claims
    i. Opioid/claim join using timing and acuity
        1. Create file of opioid fills from pharmacy fills data, using CDC file ["CDC_opioid NDC_oral MME conversion_update_2020.xlsx"] to identify opioids
        2. Split opioid claims into two groups based on refill status: initial fills and refills (note this is using refill status indicated by the health fund. Many members have serial initial fills and not refills in these data; those would be in the initial fills file)
        3. Assign diagnosis category for each claim, using ICD-10 and procedure codes. Categories include "MSD surgery", "Acute MSD injury", "Chronic MSD", and "Other diagnosis"
            a. If more than one diagnosis category is present on a single claim, assign claim to the highest acuity (MSD Surgery, then Acute MSD Injury, then Chronic MSD, then Other diagnosis)
        4. Join claims with initial fills by member ID (UID)—this generates a many-to-many match
        5. Calculate time difference between claim date and fill date
            a. If fill<before claim, use this information to generate opioid naivety status for each claim
        6. If fill is 0-3 days after claim and the claim diagnosis category is not "Chronic MSD", assign the opioid to the claim. If more than one claim fits the criteria, assign based on order other diagnoses, then MSD surgeries, lastly acute MSD injuries. If more than one claim is still eligible, use the smallest time difference between claim and fill to assign the fill
        7. Among the unlinked opioid fills, if fill is 0-30 days after a chronic MSD claim, assign opioid to that claim. If more than one claim meets the criteria, assign based on time difference (i.e., smallest time difference between claim and fill date)
    ii. Assign opioid refills to claims
        1. Serial prescriptions (most common scenario)
            a. Start with all opioid first fills (including unlinked and linked with medical claims, using the process above)

b. Arrange all fills by UID and fill date
c. Assign fills to claims that 1) occur after a claim with a linked opioid fill, and 2) opioid fill date is no more than 30 days after previous fill runout date (fill date + days supply)

2. Refills specified in the pharmacy data
    a. Join opioid refills (from 1b above) with the first fills using prescription identifier ("RXNUM").
    b. Assign claim information from first fills to linked refills

Variable definitions

e. Opioid-related variables. These variables were generated using information from the medical claims and pharmacy fill data from the health fund and the CDC opioid file "CDC_opioid NDC_oral MME conversion_update_2020.xlsx". The CDC file was merged with health fund pharmacy fill data on NDC
    i. Medication assisted treatment (MAT): Drug name contained "methadone" or "buprenorphine" in either file or drug description was "ANTIDOTES AND SPECIFIC ANTAGONISTS" in the pharmacy fill file
        1. This strategy picks up buprenorphine, suboxone, zubsolv, naltrexone, methadone, narcan, and vivitrol
    ii. Opioid: pharmacy class was "opioid" in the CDC file, and the drug was not already identified as MAT (see above)
    iii. OUD: ever ICD-10 code "T40x" or "F11x" on a medical claim or identified as MAT (see above)
    iv. Days supply > 7 days: based on "days supply" as provided in fill data
    v. MME/day: Instructions for calculation are in CDC file. Formula is "strength per unit" * "average quantity per day" * "MME conversion factor"
    vi. Overlapping Rx: Date opioid fill is within previous days supply (current fill date < previous fill date + days supply)
        1. When the previous prescription is a "short course" (the prescription window is encompassed by prescription before it), the prescription before the short course is used in evaluation
    vii. Chronic use (>60 days supply in a 90 day window)
        1. For each worker time is divided into 90 day "cycles", starting with the date of the first opioid fill
        2. Days supply is totaled within the 90 day cycle
        3. If the individual had opioid fills later than 90 days after the first fill, a new cycle is started and the process starts over
        4. When workers have multiple opioids filled on the same day, use the longest days supply in calculations
        5. Indicator variable for total days supply in a cycle > 60 for any given cycle
    viii. Multiple Rx in a single visit: multiple Rx filled on the same day and NPI is the same between fills

ix. Multiple Rx on same day, different provider: multiple Rx filled on the same day and NPI between Rx different. Could indicate doctor shopping
x. Misuse: "Overlapping Rx" OR "Multiple Rx on same day, different provider"

f. Diagnoses. These variables were generated from information in the medical (i.e diagnosis and procedure) claims. Diagnoses are assessed at the claim level, and "rolled up" to the worker (i.e, has worker ever had a diagnosis for X)
   i. MSD surgery: CPT codes 20005-21010; 21500-22900; 62263-63746; 64400-64999
   ii. Acute MSD injury: ICD-10 codes ranging S00-T14
   iii. Chronic MSD: ICD-10 codes M.x, G54-G57
   iv. Recurring acute injury. Acute MSD injuries that occur across multiple claims are recoded as "recurring injuries". These are combined with chronic MSD for our purposes
      1. ICD-10 codes for acute MSD injuries are identified on a given claim (see above)
      2. If the same ICD-10 code occurred on a previous claim more than 30 days before the claim in question, the acute MSD injury is recoded as "recurring injury" on the claim in question and will no longer be counted as an acute MSD injury
      3. Using this method, the first occurrence of a given acute MSD injury ICD10 code will be left as "acute MSD injury"
   v. Other diagnosis: Claims that do not fit into i-iv above are coded as "other Dx"
   vi. Acuity: claims can have multiple diagnoses associated with them. Acuity is assigned as follows, regardless of other diagnoses associated with the claim: MSD surgery, Acute MSD Injury, recurring injury or chronic MSD, other diagnoses.
      1. So if a claim had codes for both MSD surgery and chronic MSD, the acuity is assigned to MSD surgery

g. Description of the study sample [all data are in "claims eligibility_20230213.docx", unless otherwise noted]
   i. Demographics and worker characteristics
      1. Gender
      2. Age in 2022
      3. Plan status (Active, COBRA, etc)
      4. Time worker eligible for benefits during study period
      5. Gaps in eligibility
   ii. Plan utilization
      1. Proportion of workers with a health claim, pharmacy claim, overlap of these
   iii. Distribution of diagnoses based on original order of acuity
   iv. Diagnoses. Number of workers with:
      1. MSD surgery
      2. Acute MSD injury

3. Chronic MSD or recurring acute injuries
4. Other diagnoses

v. Opioid utilization. Number of workers with:
1. At least one opioid fill
2. Ever days supply > 7
3. Ever MME/day > 50
4. Ever MME/day > 90
5. Overlapping Rx
6. Chronic use (>60 day supply in 90-day period)
7. Multiple Rx on the same day, same provider
8. Multiple Rx on the same day, different providers
9. Misuse

vi. OUD
1. N by source (diagnosis, MAT fill, both)

h. Medical claim/opioid linked data
i. Distribution of opioid fills by diagnosis, as captured on linked claim

b) Worker Surveys
a. Worker surveys will be distributed to all members of each health fund at start of project, to collect a sample of 300 surveys. We will collect another sample of 300 surveys after 6 months.
b. We will examine the serial cross sectional data (baseline & 6mos) by comparing sample characteristics.
- Age, x
- gender, x
- race, x
- hisp, x
- unionbenefits, x
- employstatus, x
- time_construction, x
- months_construction, x
- constype;x

c. We will examine the items related to each of the three outcomes of interest

i. Opioid misuse- A “yes” response to either of the following two items:
1. Did you use the pain medication more than prescribed, or for a longer period than prescribed? [pnmed_longer]x
2. Have you used prescription pain medications that were prescribed to someone else? [pnmed_othersrx]x

ii. Proportion of workers with lost time- A “yes” response to either of the following two items:

1. Please refer to the last 12 months for the following questions: Did you miss any days of work because of your pain or discomfort? [missday_pn]x
2. In the past 12 months, have you gone to work intoxicated, high, or recovering from the night before? [missday_intox] [*possible reduced productivity]x

iii. Proportion of workers who are willing to seek help

1) their workplace

1. If I was struggling with a substance use problem... I would be willing to seek help from my supervisor or someone in human resources [help_sup_hr]x
2. If I was struggling with a substance use problem... I would be willing to seek help from a professional (MAP or behavioral health) [help_prof]x
3. If I was struggling with a substance use problem... I would be willing to ask a trusted coworker for help [help_coworker]x
4. Have you attended Alcoholics or narcotics anonymous (AA/NA) group [aa_na_use]x
5. Have you met with the specialist? [peer_supp_use]x

2) professional help (employee assistance program or behavioral health)

6. If benefit is available…. Union sponsored Member assistance program (MAP) [eap]x; Have you used these benefits? Member assistance program (MAP) [eap_use]x
7. If benefit is available…. Behavioral health (counseling) [behav_health]x; Have you used these benefits? Behavioral health (counseling) [behav_health_use]x

20.1 ABBREVIATIONS AND SPECIAL TERMS

AE	Adverse Event
CFR	Code of Federal Regulations
CDC	Centers for Disease Control and Prevention
COC	Certificate of Confidentiality
COBRA	Consolidated Omnibus Budget Reconciliation Act
CPT	Current Procedural Terminology
DHHS	Department of Health and Human Services
DSMB	Data Safety Monitoring Board
Dx	Diagnosis
FDA	Food and Drug Administration

HIPAA	Health Insurance Portability and Accountability Act
ICD-10	International Classification of Diseases, Tenth Edition
IRB	Institutional Review Board
MAT	Medication Assisted Treatment
MME	Morphine Milligram Equivalents
MSD	Musculoskeletal Disorder
NDC	National Drug Code
NIDA	National Institute on Drug Abuse
NIH	National Institutes of Health
OHRP	Office for Human Research Protections
OUD	Opioid Use Disorder
PI	Principal Investigator
QA	Quality Assurance
QC	Quality Control
Rx	Prescription
SAE	Serious Adverse Event
SAP	Statistical Analysis Plan
UID	Union member ID
UP	Unanticipated Problem
US	United States

20.2 PROTOCOL AMENDMENT HISTORY

There were no changes made to the IRB-approved versions of the protocol.

21 REFERENCES

REFERENCES:

1. Hedegaard H, Minino AM, Warner M. Drug Overdose Deaths in the United States, 1999-2017. NCHS data brief. 2018(329):1-8. PubMed PMID: 30500323.

2. Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health: Detailed Tables. Rockville, Maryland: Substance Abuse and Mental Health Services Administration (SAMHSA); 2018]. Available from: *https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHDetailedTabs2017/NSDUHDetailedTabs2017.pdf*.

3. Volkow ND, Baler R. A prescription for better opioid prescribing? Nat Med. 2018;24(10):1496-8. doi: 10.1038/s41591-018-0214-4. PubMed PMID: 30297898.

4. Bohnert AS, Valenstein M, Bair MJ, Ganoczy D, McCarthy JF, Ilgen MA, Blow FC. Association between opioid prescribing patterns and opioid overdose-related deaths. JAMA. 2011;305(13):1315-21. doi: 10.1001/jama.2011.370. PubMed PMID: 21467284.

5. Volkow ND, Jones EB, Einstein EB, Wargo EM. Prevention and Treatment of Opioid Misuse and Addiction: A Review. JAMA Psychiatry. 2018. doi: 10.1001/jamapsychiatry.2018.3126. PubMed PMID: 30516809.

6. Birnbaum HG, White AG, Schiller M, Waldman T, Cleveland JM, Roland CL. Societal costs of prescription opioid abuse, dependence, and misuse in the United States. Pain Med. 2011;12(4):657-67. Epub 2011 Mar 10. doi: 10.1111/j.1526-4637.2011.01075.x.

7. Reinhart M, Scarpati LM, Kirson NY, Patton C, Shak N, Erensen JG. The Economic Burden of Abuse of Prescription Opioids: A Systematic Literature Review from 2012 to 2017. Appl Health Econ Health Policy. 2018;16(5):609-32. doi: 10.1007/s40258-018-0402-x. PubMed PMID: 30027533; PMCID: PMC6132448.

8. Reidhead M, Porth L, Braman K. Overdose deaths, hospital visits and unfilled jobs: The opioid crisis in Missouri and Kansas. 2017. Available from: *https://www.mhanet.com/mhaimages/advocacy/PolicyBrief_MO%20KS%20Opioid.pdf*.

9. Stelzer IM. The opioid crisis is creating a labor crisis. Hudson Institute [Internet]. 2017. Available from: *https://www.hudson.org/research/13802-the-opioid-crisis-is-creating-a-labor-crisis#*.

10. Krueger AB. Where Have All the Workers Gone? An Inquiry into the Decline of the US Labor Force Participation Rate. Brookings papers on economic activity. 2017.

11. National Safety Council, Shatterproof, NORC. Real costs of substance use in your workforce: A substance use cost calculator for employers. [cited November 26, 2018]A Substance Use Cost Calculator for Employers]. Available from: *https://www.nsc.org/forms/substance-use-employer-calculator*.

12. Hegmann KT, Weiss MS, Bowden K, Branco F, DuBrueler K, Els C, Mandel S, McKinney DW, Miguel R, Mueller KL, Nadig RJ, Schaffer MI, Studt L, Talmage JB, Travis RL, Winters T, Thiese MS, Harris JS. ACOEM Practice Guidelines: Opioids and Safety-Sensitive Work. J Occup Environ Med. 2014;56(7):e46-e53. doi: 10.1097/jom.0000000000000237. PubMed PMID: 24988108.

13. Hegmann KT, Weiss MS, Bowden K, Branco F, DuBrueler K, Els C, Mandel S, McKinney DW, Miguel R, Mueller KL, Nadig RJ, Schaffer MI, Studt L, Talmage JB, Travis RL, Winters T, Thiese MS, Harris JS, American College of Occupational & Environmental Medicine. ACOEM Practice Guidelines: Opioids for Treatment of Acute, Subacute, Chronic, and Postoperative Pain. J Occup Environ Med. 2014;56(12):e143-59. doi: 10.1097/JOM.0000000000000352. PubMed PMID: 25415660.

14. Working Partners Drug-Free Workforce Community Initiative. Business Survey: Preliminary Highlights. Ohio: 2017. Available from: *https://www.workingpartners.com/wp-content/uploads/2018/03/Preliminary-Highlights-Survey-Report.pdf*.

15. Branham FL. Six truths about employee turnover2000. Available from: *http://www.nichebenefits.com/Library/sixtruths.pdf*.

16. Belden. Pathways to Employment. [cited February 18, 2019]. Available from: *https://www.belden.com/hubfs/Pathways%20to%20Employment%20Case%20Study_Final%20Digital.pdf*.

17. Reisfield GM, Shults T, Demery J, Dupont R. A protocol to evaluate drug-related workplace impairment. J Pain Palliat Care Pharmacother. 2013;27(1):43-8. doi: 10.3109/15360288.2012.753975. PubMed PMID: 23527668.

18. National Institute for Occupational Safety and Health (NIOSH). NIOSH Confronts the Opioid Crisis. [cited February 18, 2019]. Available from: *https://www.cdc.gov/niosh/topics/opioids/framework.html*.

19. Centers for Disease Control and Prevention. Guideline for Prescribing Opioids for Chronic Pain - Improving Practice through Recommendations. U.S. Department of Health and Human Services; 2017. Available from: *https://www.cdc.gov/drugoverdose/pdf/guidelines_factsheet-a.pdf*.

20. Garg RK, Fulton-Kehoe D, Franklin GM. Patterns of Opioid Use and Risk of Opioid Overdose Death Among Medicaid Patients. Med Care. 2017;55(7):661-8. doi: 10.1097/MLR.0000000000000738. PubMed PMID: 28614178.

21. Bohnert ASB, Guy GP, Jr., Losby JL. Opioid Prescribing in the United States Before and After the Centers for Disease Control and Prevention's 2016 Opioid Guideline. Ann Intern Med. 2018;169(6):367-75. doi: 10.7326/M18-1243. PubMed PMID: 30167651; PMCID: PMC6176709.

22. White JA, Tao X, Talreja M, Tower J, Bernacki E. The Effect of Opioid Use on Workers' Compensation Claim Cost in the State of Michigan. J Occup Environ Med. 2012;54(8):948-53. doi: 10.1097/JOM.0b013e318252249b. PubMed PMID: 00043764-201208000-00008.

23. Franklin GM, Mercier M, Mai J, Tuman D, Fulton-Kehoe D, Wickizer T, Sears JM. Brief report: Population-based reversal of the adverse impact of opioids on disability in Washington State workers' compensation. Am J Ind Med. 2019;62(2):168-74. Epub 2018/12/29. doi: 10.1002/ajim.22937. PubMed PMID: 30592542.

24. Ceniceros R. Texas cuts prescribing of drugs with closed formulary mandate. Bus Insur [Internet]. 2013 February 18, 2019. Available from: *https://www.businessinsurance.com/article/20131006/NEWS08/310069949?tags=%7C79%7C304%7C92&tags=%7C79%7C304%7C92*.

25. Opioid Policy Inventory. Middleton, WI: International Association of Industrial Accident Boards and Commissions; 2018. Available from: *https://www.iaiabc.org/Forms.asp?MODE=NEW&Forms_FormTypeID=-1754*.

26. Rothkin K. Workers' Compensation Prescription Drug Regulations: A National Inventory, 2018. Cambridge, MA: 2018. Report Number: WC-18-41. Available from: *https://www.wcrinet.org/reports/workers-compensation-prescription-drug-regulations-a-national-inventory-201*.

27. Optum. Working to end the opioid epidemic. 2018. Available from: *https://www.optum.com/content/dam/optum3/optum/en/resources/white-papers/opioid-whitepaper-wf914999.pdf*.

28. HealthCare 21 Business Coalition. Best Practices: Managing Opioid Use. Knoxville, TN: HealthCare 21 Business Coalition 2018. Available from: *https://higherlogicdownload.s3.amazonaws.com/MBGH/4f7f512a-e946-4060-9575-b27c65545cb8/UploadedImages/Pain_Management/FINAL_HC21_Opioid_Guide_2018.pdf*.

29. Health Plans, PBMs Take Provider-Focused Approach to Address RX Painkiller Abuse. Drug Benefit News. 2012.

30. Bush DM, Lipari RN. Substance Use and Substance Use Disorder by Industry: Short Report. 2015. Available from: *https://www.samhsa.gov/data/sites/default/files/report_1959/ShortReport-1959.html*.

31. Harduar Morano L, Steege AL, Luckhaupt SE. Occupational Patterns in Unintentional and Undetermined Drug-Involved and Opioid-Involved Overdose Deaths - United States, 2007-2012. MMWR Morb Mortal Wkly Rep. 2018;67(33):925-30. Epub 2018/08/24. doi: 10.15585/mmwr.mm6733a3. PubMed PMID: 30138306; PMCID: PMC6107320.

32. Massachusetts Department of Public Health, Bureau of Substance Addiction Services, Injury Surveillance Program, Office of Special Analytic Projects. Opioid-related Overdose Deaths in Massachusetts by Industry and Occupation, 2011-2015. 2018. Available from: *https://www.mass.gov/files/documents/2018/08/15/opioid-industry-occupation.pdf*.

33. Dale AM, Ryan D, Welch L, Olsen MA, Buchholz B, Evanoff B. Comparison of musculoskeletal disorder health claims between construction floor layers and a general working population. Occup Environ Med. 2015;72(1):15-20. Epub 2014 Sep 15. doi: 10.1136/oemed-2014-102313. PubMed PMID: 25224720; PMCID: PMC4270930.

34. Jacobsen Ashman JP, Beresovsky VP. Multiple Chronic Conditions Among US Adults Who Visited Physician Offices: Data From the National Ambulatory Medical Care Survey, 2009. CDC. 2013;10:13. doi: 10.5888/pcd10.120308.

35. Strickland JR, Wagan S, Dale AM, Evanoff BA. Prevalence and Perception of Risky Health Behaviors Among Construction Workers. J Occup Environ Med. 2017;59(7):673-8. Epub 2017/07/12. doi: 10.1097/jom.0000000000001051. PubMed PMID: 28692001; PMCID: PMC5507064.

36. CNA. 2015 Risk Outlook: Construction. Prescription Opioid Abuse: Risk Factors and Solutions. 2015. Available from: *http://nationalrxdrugabusesummit.org/wp-content/uploads/2015/09/CNA-RC-151_OutlookConstruction.pdf*.

37. Slavit W, Reagin A, Finch R. An Employer's Guide to Workplace Substance Abuse: Strategies and Treatment Recommendations. Washington, DC: Center for Prevention and Health Services, National Business Group on Health; 2009. Available from: *https://www.businessgrouphealth.org/pub/?id=f3151957-2354-d714-5191-c11a80a07294*.

38. Weisman SR, Hennrikus D, Choi K, Nunn B, Forster JL, Hunt MK, Skoog R, Luneburg W, Hesse B. Influencing Taft-Hartley Funds to provide tobacco cessation benefits. Am J Prev Med. 2012;43(5 Suppl 3):S237-41. doi: 10.1016/j.amepre.2012.07.034. PubMed PMID: 23079222.

39. Au-Yeung CM, Weisman SR, Hennrikus DJ, Forster JL, Skoog R, Luneburg W, Hesse B. An evaluation of health benefit modification in Taft-Hartley health and welfare funds: implications for encouraging tobacco-cessation coverage. Am J Prev Med. 2010;39(6 Suppl 1):S30-6. doi: 10.1016/j.amepre.2010.09.010. PubMed PMID: 21074675.

40. National Institute on Drug Abuse. 2016-2020 NIDA Strategic Plan. [cited February 14, 2018]. Available from: *https://www.drugabuse.gov/about-nida/2016-2020-nida-strategic-plan*.