**Project C: Dissemination of Integrated Worker Health Programs among Small/Medium Employers**

**1. Highlights of Accomplishments for the Past Project Period**

This project was funded in September 2009, with small-scale start-up funding from the National Institute of Occupational Safety and Health (NIOSH) and additional in-kind support from the Dana-Farber Cancer Institute (DFCI) to develop prototype guidelines for use by companies interested in implementing comprehensive approaches to worker health. By the end of the current funding cycle (August 31, 2011), we will have a set of provisional practice guidelines, targeted to large, well-resourced health care institutions in the vanguard for setting new business norms about the adoption of integrated approaches to worksite health. These guidelines will be ready to inform the adaptation of comprehensive programs by health promotion vendors to deliver in small to medium-sized worksites. The provisional practice guidelines provide the necessary first steps to assist employers in optimizing worker health by instituting a management system that drives integrated processes, content, and tools at the worksite.

As part of this project, we inventoried and reviewed a range of toolkits and materials available to guide employers in the implementation of health and wellness programs. We found there are few resources available to support interventions that integrate health protection and health promotion. The synthesis of approaches across disciplines requires an ability to integrate recommended strategies from occupational health and safety, worksite health promotion, as well as other supports for worker health. With the development of these practice guidelines, we have initiated an important step forward in making integrated programs more broadly available and accessible to employers.

We partnered with Dartmouth-Hitchcock Health Care as they implemented an integrated intervention in multiple worksites, thereby refining the articulation of these guidelines through a collaborative process. This partnership has enabled us to better understand the challenges faced by small employers (under 50 employees)1 in implementing an integrated approach; while the main campus of Dartmouth-Hitchcock Health Care is large and well-resourced, we have worked directly with small satellite clinics that have fewer resources. Rather than pilot testing already completed practice guidelines, we tested draft sections of the guidelines in real time, and in a consultative manner with Dartmouth-Hitchcock, thereby providing rapid feedback in the development process. This collaborative strategy provided case studies and stories from the field that will be incorporated throughout the text of the guidelines.

We also solidified several key collaborations during this brief funding period. We collaborated with the Massachusetts Department of Public Health (MDPH) in assessing employers’ needs for practice-based tools to guide their implementation of an integrated approach to worker health. With support from the APO Core, we developed close partnerships with members of the Center’s Worksite Advisory Board (WAB). Their guidance directed us toward initially targeting large healthcare organizations for the preliminary development of the practice guidelines, and their input contributed to shaping this renewal application. In addition, we established a new collaboration with JourneyWell, a not-for-profit health and wellness vendor committed to the dissemination of integrated intervention models to a wide range of companies (see section 3.3.3. Partnership Engagement). JourneyWell’s commitment to this renewal allows us to explore innovative avenues for the adaptation and dissemination of these provisional practice guidelines.

Lessons learned, experience gained, and partnerships developed during the current project will inform the pilot testing of the integrated approach outlined in this proposal. While provisional guidelines will be completed by August 2011, they are designed for large, relatively well-resourced health care institutions. The guidelines will be in paper format, with little graphic design. The Center’s Worksite Advisory Board and External Advisory Board (see APO Core) have recommended that we pursue development of a persuasive “business case,” which will require additional formative research. Next steps in disseminating these guidelines include adaptation for small to medium-sized businesses (SMBs) in a variety of industries, as well as developing an Integrated Implementation Package that can be used by small to medium-sized businesses and vendors.

**2. Specific Aims**

Translating evidence-based interventions into practice, following NIOSH’s Research to Practice Initiative, is critical to achieving NIOSH’s goals of improving and protecting worker health and quality of life. Although an armamentarium of research-tested worker health programs exist, the vast majority address either health promotion or health protection—*separately*. Yet science demonstrates that an *integrated* approach to keeping workers healthy, by reducing risk of chronic diseases through health promotion activities while *also* protecting workers from hazardous work conditions, results in improved worker health outcomes, as well as reduced health care and business costs.2-4

Our research group has repeatedly demonstrated that worksite interventions that integrate workplace health promotion (WHP) and occupational safety and health (OSH) are efficacious in promoting changes in risk-related behaviors, and importantly, promote a higher level of worker participation than WHP programs offered alone.2, 5-12 Based on a synthesis of existing evidence, the Institute of Medicine (IOM), NIOSH and others have recommended this integrated approach to worker health.3, 13-15 The NIOSH WorkLife Initiative has outlined “Essential Elements of Workplace Programs and Policies”16 and has called for widespread dissemination of these policies. However, dissemination is complicated by the paucity of practical tools for implementation and assessment—particularly for small and medium-sized businesses (SMB). While some new planning guides exist, they are heavily weighted toward *either* WHP or OSH, and largely targeted at large employers. As a result, there is a need for tools to facilitate greater integration of these approaches with particular attention to the needs of SMBs. In addition, successful dissemination efforts will require an in-depth understanding of how and why organizations adopt integrated worker health initiatives, and of their capacity to deliver and sustain such programs. In the absence of tools and a solid conceptual basis for dissemination, these innovations will likely not become standard-of-practice.

In pursuit of this goal, the Center for Work, Health, and Well-being has developed provisional practice guidelines that describe an approach for reaching across the traditional departmental silos of WHP, OSH and human resources (HR). These guidelines provide a recommended sequence of processes, practices, and programs that employers can implement to optimize worker health. *The purpose of Project C is to test the dissemination of an integrated WHP/OSH approach by understanding the needs and resources of small to medium-sized businesses.* While there are varied definitions of SMBs, we define them as having fewer than 750 employees.17, 18 This focus is particularly important because organizations in this size range represent more than 99% of U.S. businesses and employ more than 52% of U.S. workers.18 Yet most interventions have been developed for and evaluated in large organizations. A focus on SMBs is needed because they face different barriers and generally have fewer resources compared with larger organizations.19-21 In particular, SMBs are less likely to offer health programs to their employees;19 when they do, they are more likely to hire an external provider (“vendor”) to deliver these services.22

Project C addresses several key issues central to translating NIOSH’s Essential Elements of Effective Workplace Programs16 into practice. In the first phase, we will collaborate with a not-for-profit health/wellness vendor, JourneyWell (JW), to conduct in-depth qualitative interviews among 20 SMBs to generate a contextual understanding of factors that influence the decision to adopt an integrated approach. In the second phase, we collaborate with JW to develop a business case and implementation plan for our provisional practice guidelines specifically targeted at SMBs. This will be based on brief employer interviews exploring market factors that influence decision making in SMBs. In the third phase, we will work with JW to conduct a preliminary test of the approach among three SMBs, evaluating the feasibility, acceptability, implementation process, and preliminary impact. The final phase will focus on dissemination of findings in the practice, research and policy arenas. *Our overall objective is to develop the knowledge, products and processes needed to broadly disseminate the practice guidelines to SMBs through readily accessible channels.* Our specific aims are to:

***Aim 1-- Identify facilitators and barriers to adoption of integrated WHP/OSH approaches among SMBs.***

***Aim 2--Develop a business case and implementation package to promote adoption of the integrated WHP/OSH approach among SMBs.***

***Aim 3--Assess the feasibility, acceptability, degree of implementation, and preliminary impact of integrated WHP/OSH approach delivered by a vendor (JW) among three SMBs.***

## 3. Research strategy

**3.1. Significance**

Despite increased recognition of the interdependence of worker health behaviors and work environments, integrated WHP/OSH programs are not widely implemented. While a growing majority of U.S. employers provide *some* form of wellness programs to their employees,19, 23, 24 the focus has been largely on health promotion.25-29 In fact, the 2004 National Worksite Health Promotion Survey found that less than 7% of U.S. employers offered all five key elements of a “comprehensive” program which includes: health education, links to employee services, supportive physical and social environments for health improvement, integration of health promotion into organizational culture, and employee screenings with follow-up19—although notably these key elements do not fully incorporate OSH. There is a growing number of vanguard companies that have successfully integrated worker health initiatives across WHP and OSH.30-36 For the most part, these are large, international corporations. These “early adopters’ have begun to change the dialogue about approaches to employee health, increasing the focus on integration. Yet the extent to which this goal is achievable among SMBs is largely unknown, and is likely to rely on the extent of external support available to them.

SMBs face a myriad of barriers to providing such programs. These employers are much less likely than larger employers to have personnel dedicated to planning and implementing health/wellness programs or a budget for such activities-- two of the strongest predictors of WHP offerings.19 Adding to these challenges is the fact that most of the existing evidence-based WHP/OSH programs have been developed for and evaluated in large companies.37 Additional research is needed to determine best strategies for motivating adoption of integrated worker health programs among SMBs, to identify optimal delivery strategies to implement these initiatives, and to support employers once they embark on such efforts.20 Key unanswered questions that are critical to dissemination of integrated WHP/OSH programs among SMBs include: (1) What factors influence decision making about adoption of integrated programs? (2) What are the perceived benefits of and barriers to adoption? (3) What resources and skills are needed to implement an integrated approach? (4) How can existing programs be adapted and packaged to facilitate program implementation and maintenance?

In the landscape of worker health and safety, there are a wide range of external resources that employers draw on to assist with program offerings. “Vendors”-- which in our definition encompass for-profit and not-for-profit service providers, health plans, and occupational health professionals-- occupy an increasingly important role in this landscape. SMBs in particular often rely on external vendors to offer WHP and OSH programs. By some estimates, over 1,000 corporate health/wellness vendors operate in the U.S. today38 Similarly, a very large number of occupational health and safety vendors exist in the U.S.39 However, very few vendors provide both WHP *and* OSH programs; to our knowledge, none provide *integrated* programs. Therefore, building vendor capacity to offer integrated programs is a highly promising strategy for dissemination. Strategic partnerships between academic researchers, employers and vendors can provide a win-win situation for these efforts.22 Working with vendors, researchers can better pinpoint SMB employer needs, design and test solutions to meet these needs, as well as bring program solutions to scale for widespread distribution. A partnering approach permits the type of open dialogue and joint problem solving, combined expertise, and enhanced capacity that is essential to the dissemination process.22

***Impact statement:*** *This study is significant because it is expected to lead to the development of novel platforms and approaches for disseminating integrated WHP/OSH initiatives to improve and protect worker health within small to medium-sized businesses.* Using a theory-based conceptual model to guide our inquiry, we will assess key drivers of program adoption and implementation in SMBs, in partnership with vendors. As a result of this project, we will have: (1) marketing materials that can be used to make the “business case” for integrated approaches; (2) an integrated Implementation package that can be disseminated to vendors and employers; and (3) a training module to improve the capacity of health promotion vendors and employers to build and sustain these programs. Findings will be published in the peer-reviewed literature, and products will be made available in the public domain and communicated broadly to practitioners, professional groups, and policymakers.

**3.2 Innovation**

SMBs are a crucial, yet neglected target for worker health and safety programs. As noted, these businesses employ the majority of U.S. workers.18 Yet they are far less likely to offer health promotion programs, environmental health and safety initiatives, or health-oriented policies.19, 20 Nevertheless, there are several trends that suggest this may be an opportune time for such offerings in SMBs. First, there is increasing recognition on the part of business leaders that workplace health is “good for employees and good for business.”40, 41 A recent meta-analysis found medical cost reductions of about $3.27 for every dollar spent on WHP, and that absenteeism costs fell by about $2.73 for every dollar spent.42In addition, provisions under the Patient Protection and Affordable Care Act will create incentives for employers to provide employee health care coverage and will make technical assistance and support available to promote workplace health programs.43 This is likely to result in increased interest in worker health and safety among employers as a means for reducing health and business costs.42 Demographic shifts in the workforce, including increased age and delayed retirement,44, 45 also highlight the importance of worker health and safety initiatives. We leverage the momentum created by these trends to tackle what has been one of the biggest challenges in workplace health and safety: *addressing the needs of small to mid-sized employers.*

This project is also innovative in that it represents a shift in paradigm toward an active dissemination process, initiated from the early phases of program development, and conducted in partnership with the end-users. Currently, interventions are generally developed and tested by academics within tightly controlled research settings, then passively released into the public domain with the assumption that they will be utilized in practice. Yet, all too often, interventions are not implemented beyond the research setting. As a result, the enormous investment of resources directed toward development and evaluation of interventions has largely been unrealized.46 While there is growing recognition of the importance of ensuring that research innovations are translated into practice, little is known about how to best accomplish these goals.

Our proposal directly responds to a call to enhance “push-pull” approaches for knowledge transfer.47 On the push side, there is a need to establish organizational structures, processes, and policies to promote knowledge transfer from researchers to practitioners. In addition, resources and personnel must be available for dissemination. On the pull side, employers vary in their degree of interest and capacity to take advantage of integrated OSH and WHP innovations. They may not be aware of the benefits of this approach and often need assistance to adopt and adapt these innovations to meet the needs of their workers. In essence, a market must be created and distribution channels established to support implementation-- especially for SMBs. Without a specific, planned approach for knowledge transfer, such dissemination is unlikely to occur.48

Another key innovation is that we have developed a strategic partnership with JourneyWell (JW), a not-for-profit vendor that, to date, has focused on providing health/wellness services. JW services companies of varying sizes from small to jumbo-size businesses. JW is a division of HealthPartners, a regional health system in the upper Midwest. As such, it has access to a large number of SMBs who receive healthcare benefits from HealthPartners *but have not yet implemented integrated worker health programs*. As a result, this collaboration affords a rare opportunity to partner with an early adopter/vanguard vendor which brings extensive understanding of the marketplace, knowledge of how employers make decisions about the worker health programs they select, and marketing skills to help us hone the messages to make the business case for this approach. Moreover, JW brings expertise in “scaling” intervention delivery for broad-based application. JW is strongly committed to an integrated approach to worker health, as is evident by the large in-kind contributions they are making to this initiative. Dr. Pronk, the Vice President and Health Science Officer at JW, has an extensive track record of publications and leadership in this field.49-58 The internal JW team for this project is strengthened by Dr. Michael McGrail, MD, MPH, Medical Director of Health Solutions for HealthPartners. Dr. McGrail’s expertise in OSH alongside the established best-practice record of JW is an ideal combination.

**3.3 Approach**

***Overview:*** *Our overall objective is to develop the knowledge, products and processes needed to broadly disseminate the practice guidelines to SMBs through readily accessible channels.* In the first phase, we will conduct in-depth *employer interviews* among N=20 SMBs to gain a contextual understanding of factors that influence organizational readiness to adopt and implement an integrated WHP/OSH approach. Also during this phase, we will conduct brief, focused, quantitative surveys among 100 SMBs to gather information about employer views about our provisional practice guidelines, and to identify the types and characteristics of companies that should be prioritized for outreach. These *employer “pulse” surveys* are designed to “take the pulse” of a range of employers, to provide a snapshot of employers’ willingness to consider integration of WHP/OSH programs, and perceived benefits and barriers to doing so. In the second phase, data from both the *Employer Interviews* and *“Pulse” Surveys* will inform development of a “business case” that appeals to the most salient and prevalent factors in employers’ decision making. These data will also guide the design of an *Integrated Implementation Packet* – tools specifically designed for implementation of the provisional practice guidelines among SMBs. Also during this phase, we will design a training module to prepare vendor staff to deliver the intervention. The third phase will be devoted to testing the delivery of the Integrated Implementation Package by JW within three SMBs. Evaluation of the pilot will employ mixed methods, focusing on assessment of feasibility, acceptability, implementation processes, as well as preliminary impact on organizational and individual-level outcomes. The fourth phase will focus on dissemination of findings, products, and materials.

**3.3.1. Progress report:** This progress report covers the period from September 1, 2009 to December 31, 2010, just prior to submission of the renewal application. The original aims of this funded work were to: (1) develop practice guidelines to support employers’ use of an integrated approach to worker health; (2) pre-test the materials in a worksite; and (3) produce a prototype “toolkit” ready for production and adaptation by the end of Year 2. To more accurately describe the product we developed, we now use the term “practice guidelines” rather than “toolkit.” The practice guidelines provide resources for implementing comprehensive approaches to worker health that integrate and coordinate efforts to promote healthy behaviors and ensure a safe and healthy work environment. By the end of the current funding cycle (August 31, 2011), we will have a set of provisional practice guidelines ready to inform the implementation of integrated programs SMBs.

**3.3.1.1. Provisional practice guidelines:** Practice guidelines follow these steps: management commitment is established, a program planning process is undertaken which includes assessments and reporting, the program is implemented, and program evaluation informs continual improvement, as well as identifies program results. Sources used in the development, include (1) intervention protocols used in efficacy trials of our integrated model;2, 5, 7-9 (2) guidelines from the IOM;3 (3) the NIOSH Essential Elements;16 (4) our collaboration with Dartmouth-Hitchcock Health Care; and (5) guidance from the Center’s Worksite Advisory Board.

The guidelines begin with our vision of comprehensive worksite health, scientific evidence underlying the approach, and practical information about the goals and use of the guidelines (see Appendix A, Provisional Practice Guidelines). Implementation steps are reflected in the four chapters:

*Chapter 1: Organizational Leadership and Commitment* focuses on the importance of gaining and maintaining management commitment to the program, which is operationalized through an integrated worksite policy, signed by top management, widely communicated, and generated with employee participation. These activities encompass efforts of OSH, WHP, and HR, and address environmental, organizational, and individual levels of influence.

*Chapter 2: Program Planning* includes development of an integrated implementation plan with goals and objectives. This plan provides a structure for tracking progress in the implementation process. This plan is coordinated by management and other worksite leaders; a delegated worksite “champion” or working group plans and implements integrated activities. Employee participation is central to success. To inform planning, a series of assessments are recommended, addressing environmental, organizational, and individual levels, and cutting across OSH, WHP, and HR. These assessments provide baseline information for tracking change.

*Chapter 3: Plan Implementation* discusses strategies for implementing the integrated plan, which are adapted from the 1998 Occupational Safety and Health Administration (OSHA) proposed safety and health program rule 29 CFR 1900.1 (later withdrawn), and include six core components: (1) management commitment; (2) employee engagement; (3) risk and hazard identification and assessment; (4) risk and hazard prevention and control; (5) training, education, and information; and (6) program evaluation. Building from the Center’s conceptual model and principles for integrated interventions (see APO Core), we expanded the concepts of *hazard* assessment and *hazard* prevention and control to additionally include *risk,* including the risks that may occur from behaviors such as tobacco use and insufficient physical activity. Thus, while we borrow from the OSHA program management framework, we expanded the approach to include the Essential Elements and other key contributors to an integrated approach.

*Chapter 4—Process and Outcome Evaluation* prompts users of the guidelines to select evaluation measures based on organizational needs and priorities defined by the implementation plan. Examples of measures are provided and are drawn from NIOSH, OSHA, Pronk, and our previous work. 9 59-61

The practice guidelines provide a foundation for employers to implement an integrated management system that will support the implementation of integrated policies, programs, and practices, and include processes for employee engagement. Specific programs with integrated content will be provided as examples. The practice guidelines have not been translated into materials that are immediately usable by employers or vendors, nor are they targeted at SMBs. These steps are planned, prior to pilot testing (see section 3.3.5.3).

**3.3.2. Conceptual model for dissemination and knowledge transfer:** This proposal addresses a need for strategies to bridge the gap between research and practice. Such efforts are particularly needed among SMBs. The conceptual model described here articulates the factors that may influence organizations to adopt and implement integrated approaches. In the overall conceptual model for the Center, these constructs are illustrated in the *Organizational Context* and *Worksite Environment* boxes. Since our main objective is to generate a better understanding of organizational context and environment, not worker health outcomes, we have articulated a specific framework for Project C that speaks to dissemination. We do not target program maintenance due to resource and time constraints. This model emphasizes the need for organizational skills, resources, and motivation to successfully adopt and implement new programs (or “innovations”). To date, many theoretical models have focused on characteristics of the new programs or innovations to be adopted.46, 62 The proposed study represents a departure from an exclusive focus on innovation attributes, to focus on the “end users” of innovations, as well as contextual factors that influence organizations’ ability and willingness to adopt a new practice or program.

**Figure 1: Conceptual model for dissemination**

Our guiding conceptual model (Figure 1) is based on theories of organizational change and Diffusion of Innovations.63, 64 According to these theories, the extent to which a program is adopted, implemented, and/or institutionalized is influenced by both *organizational context and program attributes*. Organizational characteristics influencing the adoption process, include: (1) worksite climate or indicators of work culture; (2) organizational concern and interest regarding prevention (e.g., current and prior programming; indicators of the “safety culture”); (3) social influence regarding program participation (e.g., work time given for program participation); (4) size, industry, structure, of the worksite, with larger organizations having more resources to implement innovations;65 and (5) the decision-making process of the worksite (e.g., key decision makers; role of external vendors). Other factors influencing this process include leadership support and presence of a program champion.64

**Organizational Characteristics**

(e.g., climate, culture, decision-making processes, presence of champion, leadership support)

**Program Attributes**

(e.g., compatibility, relative advantage, complexity)

*Program attributes* also influence adoption. These include relative advantage or unique benefits of the program over other practices; compatibility or match between the program and the sociocultural, economic, and ideological value system of the organization; complexity, or degree of difficulty in understanding and using the program; trialability, or the degree to which the innovation can be split up for small-scale experiments; and observability, or the visibility of the innovation’s results.63 We explore the salience of these characteristics in worksite’s decision making. Moreover, we will make needed adaptations to the Integrated Implementation Package to assure that high priority characteristics are prominent. **3.3.3. Partnership engagement**: In this study, we partner with a major non-profit provider of health and wellness services (JW). Vendors are critical but often overlooked gatekeepers to health programming to worksites. Unlike larger worksites that may have in-house program staff, SMBs frequently engage outside vendors to assist in the selection, design, and implementation of programs to promote and protect worker health. JW is a division of HealthPartners, Inc. (HPI). HPI is an integrated, not-for-profit, member-governed health system providing health care coverage, clinical care delivery, hospital services, and dental services to approximately 1.2 million people in the upper Midwest. In addition, the HealthPartners Research Foundation (see [www.hprf.org](http://www.hprf.org)), is an integrated research group within HPI where researchers conduct clinical, health services and basic science research. JW provides evidence-informed health improvement solutions for employers and health plans in the U.S. Typically, JW executes health improvement strategies for the employer, including health assessment and screening; health coaching; online programs and interventions; onsite program services; communications and promotions; and evaluation and reporting. JW is in a position to identify SMBs for pilot projects that test innovative approaches. Advantages of the Center’s collaboration with JW include the opportunities to: (1) move a tested intervention into a delivery channel that is positioned to offer such programs directly to employers; (2) leverage JW’s expertise in articulating the business case for adoption, based on their knowledge of the drivers of employer adoption of wellness programs; and (3) collaborate in the adaptation of the approach into a model scalable and deliverable by vendors which will ultimately extend its reach to SMBs. JW has a proven track record of advancing the worksite health field through its publication record and has provided valuable resources to this research, including the in-kind effort of co-investigators, access to administrative data, and support for the intervention. (See Section 14--letters of support.)

While our direct partners are at the vendor level, it should be noted that development of the Provisional Practice Guidelines has taken place with continuous input from employees and managers during the first round of funding. We will continue to incorporate such input through the participation of the Center’s Worksite Advisory Board (see APO Core), our collaborations with Projects A and B, and the SMB’s working with JW.

**3.3.4. Aim 1-- Identify facilitators and barriers to employer adoption of integrated WHP/OSH approaches**

***3.3.4.1. Overview:*** The objective of this aim is to generate an in-depth understanding of the organizational characteristics, perceived characteristics of an integrated program, and salient factors that influence the decision-making process. This objective will be accomplished through complementary qualitative and quantitative methods. *Qualitative methods* enable probing of specific areas of interest and may generate new lines of inquiry. We opted to include an in-depth, qualitative approach because this strategy is more likely to yield new perspectives and insights regarding employers’ priorities, needs and perceptions related to worker health. *Quantitatively,* we will conduct a brief employer-focused market assessment among 100 SMBs. This Employer *“Pulse” Survey* is designed to ‘put a finger on the pulse’ of employers, and complements the qualitative data by assessing a broader range of employers.66

***3.3.4.2. In-depth employer interviews***: We will conduct a series of in-depth interviews with representatives of 20 SMBs, including at least three representatives per worksite in the small-medium size range. Specifically, the qualitative data will be used to: (1) refine our preliminary conceptual framework; (2) gain feedback about the Provisional Practice Guidelines; and (3) assess perceptions of acceptability and feasibility of planned activities. Results will also help to inform the development of strategies to promote program adoption (‘business case’) and facilitate implementation (Integrated Implementation Package), as outlined in Aim 2.

***Study population and sample:*** We will engage 20 SMBs through our partnership with JW. Recognizing that adoption and successful implementation of integrated programs rests on the decisions of multiple stakeholders within the organization, we will identify at least three respondents per site that represent a range of perspectives from OHS, HR, and management. We will also identify the highest level manager/leader involved in decision-making related to worker health (e.g., business owner, CEO, COO, CFO). We will follow the protocol used for the recent National Survey of Worksite Health Promotion for this process.19

***Data collection methods***: The Project Director will conduct in-depth telephone interviews among representatives from participating businesses. Prior to this, we will send an introductory letter and follow up with a telephone call to schedule the interview. We will work closely with the JW and HealthPartners staff, who have established relationships with the companies to identify the optimal manner in which to contact the employers. Call attempts will be made at various times of the day to each potential respondent. We will schedule specific times to call back at the convenience of each respondent. The Project Director will indicate that she is calling on behalf of a study conducted by the Harvard School of Public Health, and request to speak with the appropriate individuals. It is anticipated that several calls will be necessary to schedule an interview or reach the correct individual. The interviews will be audio-recorded (with permission) and professionally transcribed. Coding will be done by the Data Core’s qualitative research expert.

***Measures:*** We will develop a open-ended interview guide in which we specify questions to be asked; this focused approach has been used in our current research and is necessary in order to cover all the relevant questions while wisely using our respondents’ potentially limited time.2, 5, 7-9 However, we will also allow the interviewer the flexibility to add questions that were not previously determined and to probe on relevant areas more fully, thus capitalizing on the strength of this interview method. Questions will address: (1) What current WHP/OSH programs are offered? (2) What factors are most influential in decision-making regarding program offerings? (3) What are the barriers to and facilitators of adopting an integrated approach? (4) What program characteristics influence whether or not an employer is willing to adopt this approach? (5) What resources and capacity are needed for implementation? (6) What adaptations may be needed for them to adopt an integrated program in their offerings? (7) What is the likelihood of using external vendors to provide these services?

***Analysis Plan*:** We will conduct content analysis, a method used in anthropology to analyze qualitative data collected in the form of texts.67 Analysis will entail intensive reading and group discussion of the full transcripts, followed by coding and thematic formulation processes that are based on the construction of structured, hierarchical database indexing that will be enhanced using the data management software program,68

***3.3.4.3. Employer “pulse” survey:*** We will survey 100 SMBs to get a brief snapshot of employers’ priorities, concerns and challenges related to worker health and safety.66

***Study population and sample*:** SMBs will be accessed through HealthPartners, Inc., the parent company of JW. The rationale for recruiting through HPI, rather than JW, is that by definition, JW clients offer some form of WHP which is likely to result in a biased sample. SMBs recruited through HPI may or may not offer these programs. Additionally, HPI maintains current information about the size, industry type, insurance programs of their clients and we will be able to draw from this pool of companies for the ‘Pulse’ surveys. Also, all of these companies have health insurance available to their employees, though they may/may not provide WHP or OSH. We have sought to identify size parameters that will focus our efforts on a restricted range while also maximizing the applicability of the adapted program to the size of worksites most in need of assistance with worker health. Eligibility for participation will follow those outlined for Employer Interviews above.

***Data collection:*** Within each participating business, we will identify the highest level manager/leader involved in decision-making related to worker health (i.e., owner, CEO, COO) using standardized protocols.19 Data will be collected by telephone interviews conducted by the Project Director and survey assistants that are trained and supervised by the DFCI’s Data Core. The telephone interview will be administered using a computer-assisted telephone interviewing (CATI) system. Response rates will be enhanced by making several call attempts at various times of the day; scheduling specific times to call back at the convenience of each respondent; ascertaining the correct phone numbers for employees with no answer after five attempts at different times.

***Measures:*** The purpose of the ‘Pulse’ Survey is to collect a small but highly relevant amount of information necessary for market analysis. Key questions relate to existing program offerings, employer interest in integrated WHP/OSH solutions, costs an employer might be willing to pay to integrate their current WHP/OSH programs (if applicable), and employer perceptions about the marketability of this approach in other SMBs in their size-range and industry. We seek to understand the types and characteristics of SMBs that are most interested in adopting integrated programs (‘early adopters’), as this is essential information for the development of early product prototypes. We have designed the telephone survey so as not to exceed 10 minutes in length, as we recognize that a high response rate is critical to the generalizability of our findings.

***Data analysis***: Initial data analysis will involve descriptive statistics of the worksite characteristics, WHP/OSH programming, perceptions about the value of integration, and use of vendors. Where needed, we will create summary variables, following available methods used in prior studies. We will calculate point estimates with 95% confidence intervals for all measures and assess differences by size and industry type using cross-tabular analyses. These analyses will include the existence of current health promotion and wellness programs, value placed on integration, preferences for using outside vendors to provide wellness programs, and perceived health issues of greatest importance to the organization. A two-tailed t-test will be used to identify statistically significant differences among subgroups. Logistical analysis and other multivariate regression modeling will identify factors that are associated with readiness to adopt integrated WHP/OSH programs. We expect to conduct most analyses stratified by industry and size; in some cases, we expect to pool data within industry across size. In these cases, we will use weighting procedures used in prior research.19 When data are pooled, sampling stratum will be controlled, such that all analyses will take into account the industry and size stratum.

**3.3.5. Aim 2-- Develop a business case and implementation package**

***3.3.5.1.******Overview*:** The success of the dissemination process will rely on our ability to: (1) market the program in response to the needs of SMBs; (2) target the appropriate program scope for delivery through vendors based on an understanding of available resources; and (3) package the materials so that they are user-friendly and can be used by individuals with a range of experience in SMBs. The data collected in Aim 1 will inform this process. Our goal is to articulate a compelling rationale for SMBs to adopt an integrated approach and to identify best strategies for communicating this to organizational decision-makers. In addition, we will develop the requisite tools and explicate the necessary processes to implement an integrated WHP/OSH approach.

***3.3.5.2. Development of business case for an integrated approach:*** Development of the business case will be based on results of Employer in-depth interviews and Employer ‘Pulse” Surveys, described in Aim 1. Working with the JW Marketing Team, we will identify motivators of and facilitators to adoption of integrated worker health initiatives. Key messages will include the value proposition of the integrated approach. At a minimum, this will include costs and productivity outcomes, as well as other value-driven rationale which may include the recognition of the company as a preferred employer in the community, retention and attraction of high-quality employees, and improving worker morale. Materials will highlight connections between targeted health behaviors and key occupational health and safety risks. Components of the marketing plan will likely include: PowerPoint presentations, discussion guides for employer meetings, and presentation “placemats”--an educational tool that graphically highlights the processes and outcomes related to the intervention (thereby highlighting the value proposition). Drs. Pronk and McGrail will work closely with JW sales staff to connect directly with employers, with marketing and communications staff to create marketing materials, and with operations staff to ensure feasibility in product and service implementation. We recognize that a key aspect of the ‘business case’ is cost effectiveness. It is not feasible, however, in the current study to conduct a full cost-benefit analysis, although such an analysis is in our plans for future research (see section 3.8).

***3.3.5.3. Adaptation of practice guidelines for implementation through JourneyWell:*** Asdeveloped, the practice guidelines are a set of recommended processes for employers to implement with integrated content and recommended tools driven by an integrated management system with employee input. A common observation, however, is that such documents stay “on the shelf” – requiring external support in order to be implemented. A vendor such as JW can provide this support; to do so, the guidelines require some adaptation. First, it will be necessary to align the guidelines with the *standard process of implementation* JW uses with its clients. We have already begun the process of mapping the practice guidelines on to JW procedures and protocols. Second, we will collaborate in finalizing the *content and tools* to be used in the delivery process. While the practice guidelines provide various examples of assessment or audit tools companies might consider, in our collaboration with JW, we will narrow these options to create a more standardized product for delivery. During this process we may find that some additional materials may need to be developed or adapted for a specific type of worksite. Once finalized, tools will need to be placed into appropriate web-based formats or other accessible portals. Third, we will package program support materials that will transform the existing health promotion platform at JW. In addition to adapting the process, content, and tools of the current practice guidelines for use by JW, JW’s existing health promotion platform will be integrated to include OSH. This will be accomplished by adapting JW’s standard individual health risk assessments, organizational assessments and program evaluation tools to include OSH. Questions and/or checklists available from OSHA will be incorporated into the JW platform and we will explore obtaining incident reports from the companies.

**3.*3.5.4. Building vendor capacity to deliver integrated programs****:*As indicated by the support dedicated to this collaboration, JW is committed to improving worker health through integrated approaches; nonetheless, JW currently has limited capacity or expertise among field staff to implement this type of program. Drawing from our prior research,2, 7, 8 Sorensen and Barbeau’s synthesis of the NIOSH Steps symposium,69 and the IOM NASA Report3, we will develop a training module for JW staff to introduce concepts and strategies for integrating OSH and WHP. The module will serve as a foundation for future training of a broad range of vendors. Deborah McLellan and Jennifer Cavallari will oversee the development of this training. An initial training will be provided in person at the JW offices, with follow up available by phone and webinar. Training will be conducted in two parts. The first part will be appropriate for all JW staff working on the project (e.g., educators, graphic designers, data and communications experts). By the end of the session, participants will understand the rationale and scientific evidence for the integrated approach, will be able to describe an integrated and comprehensive approach, and will have a working knowledge of the practice guidelines. Learning objectives include: delineating benefits of an integrated approach, describing levels of intervention, identifying core components of an integrated program, and describing the hierarchy of controls in OSH.

The second part of the training will be designed for JW staff who will be integrally involved in program implementation (health consultant, program coordinator, evaluation and reporting staff, implementation manager, health coaching supervisor, help desk staff, and product design staff) and will be presented as an in-depth discussion, include role-playing and problem-solving. By the end of this session, participants will be able to identify core components of an integrated program; provide examples of “typical” worksite WHP and OSH activities; transform a typical WHP and OSH activity into an integrated activity; and identify challenges to implementation. We will evaluate the training by pre and post assessments among participants that will assess achievement of learning objectives. Additionally, field staff will be assessed on their self-efficacy in being able to deliver an integrated approach, and asked for recommendations on future training. These topics will be incorporated into the webinars described below.

After initial training, we will conduct at least four webinars for JW field and project management staff. Half of the 90-minute webinars will be devoted to content delivery and the other half to interacting with participants about the integrated content and problem solving in the field. After each webinar, participants will be able to describe the implementation phase and its major activities, identify challenges to implementation, and solutions for addressing the challenges, and articulate their self-efficacy in delivering the program.

**3.3.6. Aim 3-- Assess the feasibility, acceptability, degree of implementation, and preliminary impact of integrated WHP/OSH approach delivered by a vendor (JW) among three small/medium employers.**

***3.3.6.1.* *Overview:*** The process of implementing the integrated WHP/OSH approach will be pilot-tested in three SMBs to determine the feasibility, acceptability, and ease of implementation, as delivered by JW. The JW integrated OSH/WHP platform will consist of program content, audit tools and assessments, implementation processes, and evaluation to be delivered by JW health consultants. Data will be collected in each site at baseline and 12-month follow-up to assess changes in organizational and individual-level characteristics, as well as the degree to which core components of the Integrated Implementation Package were implemented. At the end of the implementation cycle (12 months), we will collect follow-up data at the organizational and individual levels, using the same baseline measures and procedures. Subsequently, we will assess feasibility, acceptability, and implementation, using standard definitions and methods described by Bowen et al.70

**3*.3.6.2. Setting and sample***:The pilot test will include three SMBs. JW will identify employers representing cross-cutting examples of potential early adopters of the integrated approach to worker health. These sites will be within the HPI regional service area in the upper Midwest to make site visits reasonable to achieve.

***3.3.6.3. Implementing the Integrated Practice Guidelines:*** As described in the APO Core, the Center has articulated a set of core principles of integrated health protection/health promotion approaches which are: (1) comprehensive, in that they address both promotion and protection of overall worker health; (2) targeted at multiple levels of influence and apply a systems approach, outlined in the practice guidelines; (3) reflective of core components based on NIOSH Essential Elements16 and the framework of the draft OSHA safety and health program rule 29 CFR 1900.1; and (4) participatory in nature, ensuring that all stakeholders have opportunities for input into the design, implementation and evaluation. Accordingly, intervention efforts focus on obtaining management commitment and employee involvement; conducting risk/hazard assessment and risk/hazard prevention/control; and education and training for employees and supervisors.

***Management commitment and employee engagement:*** JW and the company will sign a statement of work outlining roles and responsibilities to demonstrate the commitment of management to the program. The employer will work with JW to develop, adopt, and communicate to staff a written integrated worksite policy designed to address the integration of OSH, WHP, and HR using a management systems approach. If needed, JW will provide a sample written policy, sample goals and objectives, and sample memos to top management. Management will assign a program “champion,” liaison, or working group to plan, coordinate, and integrate worksite safety and health, health promotion, and work-life policies, programs and practices. JW will provide regular support to the liaison or committee, with timing and frequency of the support aligned with need and the phase of the program. The worksite will provide adequate authority and resources for integrated programs. The liaison or committee will additionally represent employee interests to management and communicate with employees about management commitment to the integrated worksite program activities. To assist in this process, JW will provide consultation on appropriate communications. The liaison or committee will additionally provide JW with information for adapting and conducting integrated activities appropriate for the different audiences within the workforce.

***Risk and hazard identification and assessments:*** *As* a first step in the planning process, JW will work with the employer to evaluate existing workplace and work-life programs, policies and practices to assess risks and hazards. At a minimum, this assessment will include: review of employee benefits and workplace policies to support employee health and well-being; assessment of occupational hazards and risk surveillance to make sure the workplace is in compliance with regulatory, legal, and accreditation requirements; and investigation of the health status of employees. Dr. McGrail at JW and Dr. Cavallari from the Harvard School of Public Health will provide consultative roles if the workplace is out of compliance, or if it is interested in more in-depth occupational health and safety assistance. For instance, Dr. McGrail may provide contact information for local industrial hygiene and occupational health consultants/resources. More specifically, resources may be leveraged that come from the HealthPartners Occupational and Environmental Medicine Department. Dr. Cavallari may provide links to available occupational safety and health and industrial hygiene resources available through NIOSH and OSHA. As an additional part of this assessment process, we will work with JW to adapt its Dimensions of Corporate Wellness Score Card that is based on the NIOSH Essential Elements, to provide a full assessment of organizational and environmental supports for worker health and safety. JW will provide the health risk appraisals (HRA) with feedback and/or biometric assessments. Throughout this process, the company will stress to employees that all individual assessments will be confidential and that only aggregate-level data will be analyzed and reported. Based on the findings of these multi-level assessments, JW will work with the company to analyze the data, identify strengths and opportunities, develop recommendations and priorities into a report, and communicate findings. Finally, JW will assist the company in developing a realistic 12-month implementation work plan based on recommendations and priorities developed in the assessment report and pursuant to the goals and objectives written in the integrated worksite policy.

***Risk and hazard prevention and control:***The objective of this phase is to eliminate and control workplace and work-life risks and hazards in an integrated and coordinated manner. JW will use a consultative approach to provide a process and tools for the worksites to implement policies, programs and practices that address risks and hazards of the social, organizational, and physical work environment, as well as of individual employees. This consultation will be based on the goals, recommendations and priorities identified by the site. JW will also provide guidance to companies on how to communicate with employees about their specific workplace health and safety, health promotion, and work-life benefits programs and policies. JW and/or Dr. Cavallari will identify OSH consultants or industrial hygienists available to assist the participating employers in implementing appropriate hazard control strategies, as needed.

***Information, education, and training for employees, supervisors, and managers:***Woven throughout the Integrated Implementation Package is a commitment to providing information, education, and training for all levels of employees so that they may safely conduct their work, and reduce their work and life risks and hazards. In collaboration with the company, JW will provide consultation on opportunities for integrated approaches to information, education, and training within the worksite’s work plan. We expect education and training to occur through various communication channels such as web portals, telephone-based and written communications, and the company intranet, if it exists. Also, JW will adapt evidence-based activities, such as small group education programs, toolbox talks, incentives and competitions, and screenings to appeal to a broad range of audiences. While most of the program messages and activities originating from JW will be integrated, additional OSH content may need to be added. JW and/or Dr. Cavallari will identify appropriate OSH resources, such as websites and/or OSH consultants for the company to utilize to conduct these trainings. Programs will be tailored for the workplace and workforce (e.g, composition by gender, language, age). JW will support program implementation by providing options on meaningful incentives and year-round communications to maximize employee participation.

***Program evaluation:***JW will work with employers to evaluate the extent to which the goals and objectives of the worksite plan were met. Continual feedback from employees, the working groups, and site liaisons on the program’s success can improve the program and its relevance to the workforce. A follow-up assessment will be conducted at environmental, organizational, and individual levels by the site and JW. Following the procedures used at baseline, at a minimum the worksite will: review employee benefits and workplace policies; conduct occupational hazard and risk surveillance; and investigate the health status of employees (e.g. health assessment). JW will work with the company to analyze the data and plan for future actions. These evaluations will additionally inform the impact evaluation described below.

***3.3.6.4. Evaluating the Integrated Implementation Package*:** Objectives of the evaluation are to assess the feasibility and acceptability of the integrated approach, as well as the extent of implementation of the Implementation Package. Process tracking and qualitative interviews provide the basis for this evaluation.64 We will use a quantitative Process Evaluation System, developed in our prior studies.71-73 Process objectives and indicators will be defined for each activity to allow tracking of the type of intervention conducted, and set targets for the number of activities to be offered within a specified time period. These targets will be developed for each worksite, along with a work plan detailing steps to accomplish objectives. Examples of key questions, data sources and indicators are presented in Table 1.

As part of implementation assessment, we will adapt a measure developed by Dr. Pronk. The Penetration, Implementation, Participation, and Effectiveness (PIPE)\* Impact Metric evaluates the degree of implementation and impact of a worksite health program.61 The PIPE measures the degree of implementation of action steps articulated in the work plan created for individual worksites. These steps reflect the goals and objectives for each core components described above (see section 3.3.5). In addition to implementation processes tracked by our quantitative evaluation system, we will conduct qualitative interviews with JW and worksite staff upon completion of the implementation cycle. Objectives are to assess perceptions of the implementation process and degree of programmatic success, obstacles or barriers that might have thwarted their efforts, and further adaptations to the Implementation Package that may enhance usability or effectiveness. For these, we will use the same methods for recruitment, data collection and analysis described in section 3.3.4.2. Interviews will be conducted by survey assistants that have not been involved with program development or implementation.

**Table 1: Evaluation of the Integrated Implementation Package**

|  |  |  |  |
| --- | --- | --- | --- |
| **Objective** | **Key Questions** | **Data Source** | **Sample Indicators** |
| Feasibility | Are employers willing to consider adopting the integrated approach? | Recruitment tracking | Number of eligible employers who agree to participate |
|  | Can JW staff be trained to deliver the Implementation Package? | Pre/post tests conducted among JW staff involved in training | Percentage of trainees that achieve workshop objectives |
|  | Are worksite staff willing to be involved with implementation? | Organizational Assessments | Number and time spent by worksite staff planning and implementing program |
|  | How much and what types of support are needed by worksite staff to enact programs? | Interviews with JW and worksite staff involved with implementation | Time spent by JW staff in consultation, providing technical assistance, etc with worksite staff |
| Acceptability | How do those involved with implementation view the program? | Interviews with JW and worksite staff involved with implementation | Percentage of respondents who report that the intervention is acceptable |
|  | To what extent is the program viewed as suitable for the setting and population? | Interviews with JW and worksite staff involved with implementation | Percentage of respondents who report that the intervention is suitable for their setting |
|  | Can the program be adapted to suit employer and employee needs, preferences? | Site work plan and process tracking | - Recommendations and priorities developed and communicated  -New topics requested and delivered |
| Implementation | To what degree are core components of the program implemented? | Site work plan and process tracking | Percentage of work plan completed using PIPE metric\*  -Integrated worksite policy written and communicated.  -Cost & resources expended |
|  | What non-core/adaptive elements are implemented? | Site work plan and process tracking | Number and types of trainings and information delivered |
|  | To what extent are guidelines implemented with fidelity? | Site work plan and process tracking | PIPE metric measures fidelity to work plan |

**3.3.6.5.** ***Preliminary programmatic impact:*** We will also describe changes between baseline and 12-month follow-up among organizations and individual employees.

***Organizational-level assessment:*** JW has developed a scorecard that quantifies the degree to which companies adhere to the Essential Elements (see Appendix B, Dimensions of Corporate Wellness). Using a 0-100 total score, the Dimensions of Corporate Wellness (DCW) Scorecard is completed as part of face-to-face conversations with key representatives of the company. Scoring is anchored against the 0-5 scale where “0” implies that the element does not exist or apply at all (0%) and “5” implies that the element is completely present and applied (100%). Scores of 0, 1 and 2 reflect a presence of the essential element of less than 50% whereas scores of 3, 4, and 5 reflect a presence of the essential element of 50% or higher. The Scorecard will be augmented by integrating a validated OSH evaluation tool developed in our prior research and based on OSHA’s Program Rule.9, 74 Measures of organizational climate, culture of health,75-77 leadership support 78, 79 and presence of a champion 62 will also be included.

***Individual-level assessment*:** As is standard JW practice, a health risk assessment entitled, Achieve Your Health Potential, will be provided to employees within participating sites. The standard JW health risk appraisal (HRA) includes questions about individual risk behavior and health. As part of our collaboration, the HRA will be expanded to include perceptions about exposure to worksite risks/hazards and their impact on health. To the extent possible, we will rely on standard measures that have been previously shown to be valid and reliable. To support synergies across the Center, we will also incorporate measures used by Project A to assess perceived exposures to OSH hazards. The HRA will also assess awareness of and participation levels in program activities. The HRA will be administered at the beginning of the year-long program at each site. The typical mode of administration is through a web portal. The HRA is heavily promoted to be completed within a specified timeframe (typically 4-6 weeks), but employees are provided access to this portal throughout the year. JW typically achieves response rates upwards of 75% on these HRAs.80, 81 JW will analyze findings and report aggregate findings to the worksite. The HRA will be repeated at the end of the implementation cycle (12 months later); these data will serve as one indicator of preliminary program impact.

***Data analysis:*** Our main analytic goal is to assess feasibility, acceptability and extent of implementation. For this, we will use both qualitative and quantitative assessments, as described above. Process data will be summarized in tabular form with frequencies and percentages. Using descriptive statistics, we will describe levels of implementation (i.e., calculation of an “implementation coefficient” reflecting the percentage of core elements implemented as intended), prevalence of specific factors attributed to success and or incomplete implementation. This information is currently not available in the literature, and as such, these findings will contribute to advancing understanding about dissemination within SMBs.

In addition to analysis of implementation, we will describe changes from baseline to 12-month follow-up in Organizational Assessments (i.e., expanded Dimensions of Corporate Wellness Score Card), and aggregated data from the individual health assessments). Descriptive analyses will focus on changes from baseline to follow-up in organizational characteristics and employee practices between the baseline and 12-month follow-up period. These analyses will be used to determine the direction and magnitude of any changes that occurred from before to after the implementation period. We will use test for paired data (paired t-test, McNemar’s, Chi-square) to compare pre and post values, as appropriate. We will also examine the agreement between organizational level data and employee-level data in a simple, descriptive fashion.

**3.3.7. Phase Four: Dissemination of findings**

By Year 5, we will have laid a firm foundation for dissemination efforts. We have carefully selected a spectrum of activities, utilizing multiple media channels that will extend our reach to a broad range of audiences. These activities include: (1) publications in peer-reviewed literature (e.g., Journal Occupational Environmental Medicine), in business-related journals (e.g., Harvard Business Review); (2) presentation of findings and continuing education institutes/preconference workshops at conferences applicable to worksite health and where vendor community is present, such as Society of Human Resource Managers (SHRM), Integrated Benefits Institute/Nat’l Business Coalition on Health (IBI/NBCH), Institute for Health and Productivity Management (IHPM), International Association for Worksite Health Promotion (IAWP), Health Enhancement Research Organization (HERO), American College of Occupational Environmental Medicine (ACOEM), and National Business Group of Health (NBGH); (3) specific outreach to a few organizations that have platforms and forums, such as websites, workshops, webinars, and conferences, available to distribute the implementation package materials and/or findings widely. We have already discussed this with representatives of two such organizations: IAWHP(Dr. Nicolaas Pronk, President) and ACOEM (Drs. Ray Fabius and Robert McLellan, Past-Presidents, and members of the WAB (see Section 14--letters of support), and will explore additional distribution channels through other Worksite Advisory Board members and MDPH; and (4) uploading materials and findings on the Center’s website as described in the Administrative, Planning, and Outreach. Also, we will work with Center investigators and staff to conduct a Center-wide symposium, planned in coordination with NIOSH and intended to draw a national audience, to convey the lessons learned across the center’s full range of activities, with particular attention paid to the findings of this project, and to stimulate discussion among key stakeholders about the future needed directions for research and practice.

**3.3.8. Potential problems and alternative strategies**

We recognize that we may encounter challenges in the process of conducting this research. First, we recognize that inquiring about potentially sensitive organizational characteristics (e.g., climate, leadership, OSHA compliance) during in-depth Employer Interviews (Aim 1) may raise concerns about confidentiality of data. We have taken numerous measures to assure confidentiality of study data, as outlined in the Human Subjects section. We will inform participants of these actions. Second, we are dependent on a good response rate to the Employer “Pulse” Surveys (Aim 1) in order to generate representative market information. We have developed strategies to address this issue throughout the course of numerous worksite studies. For example, we will obtain high-level management support for participation; attempt to reach potential participants at various times of the day/week, and keep the participant burden of data collection burden to a minimum.

A more difficult issue is that of cost-effectiveness of the integrated approach. It is highly likely that businesses will want to know program costs (or at least the price). Unfortunately, it is beyond the scope of this initiative to conduct a full cost-effectiveness analysis. However, we will track data on resources expended, including personnel and materials. We will also document the willingness of employers to pay for these services. It will not be feasible to conduct an impact analysis on medical claims experience due to both the short timeframe of the project (12 months) as well as the small number of people and companies (N=3) involved. We will compare employer costs (program price) currently expended by SMBs for any programs offered in the Implementation Package tested based on an estimate of program costs in order to consider the acceptability of the programmatic solution. As described below, our future plans include a detailed cost-effectiveness analysis. We will also collaborate with Project A, which includes an assessment of the costs of intervention implementation.

**3.3.9. Expected outcomes**

This study addresses a new set of research questions specifically designed to inform our framing of the marketing and promotion of our integrated WHP/OSH approach, selection of appropriate delivery channels, and the adaptation existing program materials for use by likely program deliverers. Our aims to assess the feasibility and preliminary impact of this intervention package will provide valuable new insights about the implementation of such interventions among SMBs-- a critical but often overlooked segment of the workplace in intervention research. At the conclusion of this study, we will have a tested platform for delivery of the integrated practice guidelines, empirically driven strategies and targets for promoting adoption among SMBs, and materials that will be distributed in the public domain so that other vendors, employers and providers of worker health programs may utilize this approach.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 2: Timeline** | Year 1 | | | | Year 2 | | | | | Year 3 | | | | Year 4 | | | | | Year 5 | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | | 2 | 3 | 4 | | 1 | 2 | 3 | 4 | | 1 | 2 | 3 | 4 | |
| **Phase 1: Formative Research**  1. In-depth Employer Interviews (N=20)  2. Employer “Pulse Surveys” (N=100)  3. Qualitative and quantitative data analysis | X | X | X  X |  |  |  |  |  |  | |  |  |  | |  |  |  |  | |  |  |  |  | |
| **Phase 2: Develop Business Case and IPP**  1. Design business case materials, marketing tools  2. Adapt materials for small/medium business  3. Adjust delivery strategies to align with vendor processes  4. Train JW staff on integrated WHP/OSH approach |  |  |  | X | X | X  X | X |  |  | |  |  |  | |  |  |  |  | |  |  |  |  | |
| **Phase 3: Implementation and Evaluation of IPP**  1. Select and recruit pilot sites  2. Baseline assessments-- Org., Individual  3. Implementation cycle (12 months)  4. Follow-up assessments-- Org., Individual  5. Analysis of baseline/follow-up data  6. Compile and analyze process tracking data  7. Generate summary reports; lessons learned |  |  |  |  |  |  | X | X | X | | X | X | X | | X | X | X | X | | X  X | X |  |  | |
| **Phase 4: Dissemination of Findings**  1. Prepare manuscripts  2. Present findings at national/regional conferences  3. Collaborate on Center-wide symposium  4. Work w/ vendors, professional organizations |  |  |  |  |  |  |  |  |  | |  |  |  | |  |  |  |  | | X | X | X | X  X | |

**3.3.10. Planning for future directions and Center-wide coordination**

This project has the potential to advance the science, policy, and practice of worker health initiatives among SMBs. Yet, important questions remain to be explored in our future research*.* For example, as noted above, it will not be feasible to conduct cost-effectiveness analysis in this initiative. Future plans include a study of both cost and effectiveness of integrated programs offered through vendors. In addition to cost, it will be important to generate an understanding of the type and level of support required by SMBs to sustain programs. Moreover, exploring the role of other potential “gate-keepers” to worker health programs, including the broader vendor community, brokers and health plans, is also warranted. We already initiated discussions with IAWHP and ACOEM about such future efforts. We also expect to work on dissemination efforts with the MDPH. In terms of policy directions, the Center has strong ties to Massachusetts and U.S. legislators who strongly support WHP and OSH initiatives, particularly in light of new opportunities through healthcare reform (see APO Core). Such support will facilitate broad-scale dissemination and application of findings, and will ultimately contribute to the national research agenda to promote and protect worker health.

To affect practice, products and evidence generated through Project C will be made available to practitioners and other stakeholders through the Center’s website. In Year 5, we will work with Center investigators and staff to conduct a Center-wide symposium, planned in coordination with NIOSH. This is intended to draw a national audience, to convey the lessons learned across the Center’s full range of activities, with particular attention paid to the findings of this project. In addition, we will conduct seminars and educational workshops to share lessons learned, in collaboration with the Harvard Environmental Resource Center, MDPH, and other partners.

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