

REPORT

FINAL REPORT

Behavioral Interventions to Promote Job Retention after Injury or Illness

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ABSTRACT

This is one of three policy action papers prepared in Year 3 of the Stay-at-Work/Return-to-Work Policy Collaborative, an initiative funded by the Office of Disability Employment Policy in the U.S. Department of Labor.

Each year, millions of workers in the United States lose their jobs or leave the workforce because of a medical condition. Keeping these workers in the labor force could help them stay productive, maintain their standard of living, and avoid dependency on government programs. In this paper, we identify promising behavioral interventions to promote job retention after injury or illness of adult, experienced workers.

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I. INTRODUCTION

In a given year, millions of Americans will leave the workforce, at least temporarily, due to the onset of a physical or mental health condition that challenges their ability to work (Hollenbeck 2015). Without regular income, these workers and their families often come to rely on public programs like Social Security Disability Insurance (SSDI), Supplemental Security Income (SSI), Medicare, and Medicaid. The resulting costs to state and federal governments are steep, as are the financial, social, physical, and mental health costs to the workers themselves (Ben-Shalom and Burak 2016; Waddell and Burton 2006; Strully 2009). These costs are also growing at an unsustainable rate; SSDI's share of total Social Security outlays has doubled over the past 20 years (Autor 2015). Implementing policies and programs that encourage and enable more adult workers who experience the onset of a work-limiting condition to remain in the labor force presents an opportunity to improve worker well-being, the national economy, and the fiscal stability of disability safety-net programs.

Behavioral science draws on insights from psychology and other social sciences to study how cognitive, social, and emotional factors contribute to the economic decisions and actions of individuals. Particularly in times of hardship and stress, such as the onset of a work-limiting disability, individuals' ability to make (and follow-through on) rational decisions that maximize their well-being may be limited (Mullainathan and Sharif 2013). Behavioral interventions that explicitly address psychological factors that contribute to poor decision making can be effective in helping people avoid common pitfalls. Such interventions are often a low-cost means of inducing behavior change and improving outcomes.

The behavioral science framework draws on three key observations about human decision making. First, cognitive resources are limited and can be overwhelmed. This might explain the human tendency to make important decisions on instinct rather than through careful deliberation, or to respond to irrelevant or inappropriate information in making decisions. Second, people do not act with perfect self-control, which creates a wedge between what they intend to do and what they actually do. As a result, they procrastinate about difficult or unpleasant tasks and tend to accept a short-term payoff even if being patient would bring a larger reward. Finally, non-economic factors can influence decisions and choices. People care about their identities and about how they are perceived in social contexts, and make decisions with those factors in mind (Samson 2014).

Identifying possible psychological factors at play in job retention decisions and designing behavioral interventions is a complex but promising undertaking. Multiple actors are involved in the sequence of events that occur after a worker experiences the onset of a work-limiting condition, including the worker; his or her employer; physicians; family and friends, coworkers, and other advisors (some of whom may have their own interests in mind); insurers; and others. Contact among any of these actors constitutes a potential decision point that can affect whether the injured worker moves toward work or toward long-term disability, and all of these decision points may involve cognitive or psychological limitations that can inhibit job retention. This suggests that it should be possible to identify a range of behavioral interventions that might help workers retain their labor force attachment after the onset of illness or injury, and test them to identify the most effective ones.

In this paper, we identify promising interventions that harness behavioral insights to promote job retention among workers who experience the onset of a potentially work-limiting medical condition. We focus on behavioral interventions that would not require changes in legislation or public benefit policies, and would not meaningfully change the set of options available for any stakeholders.

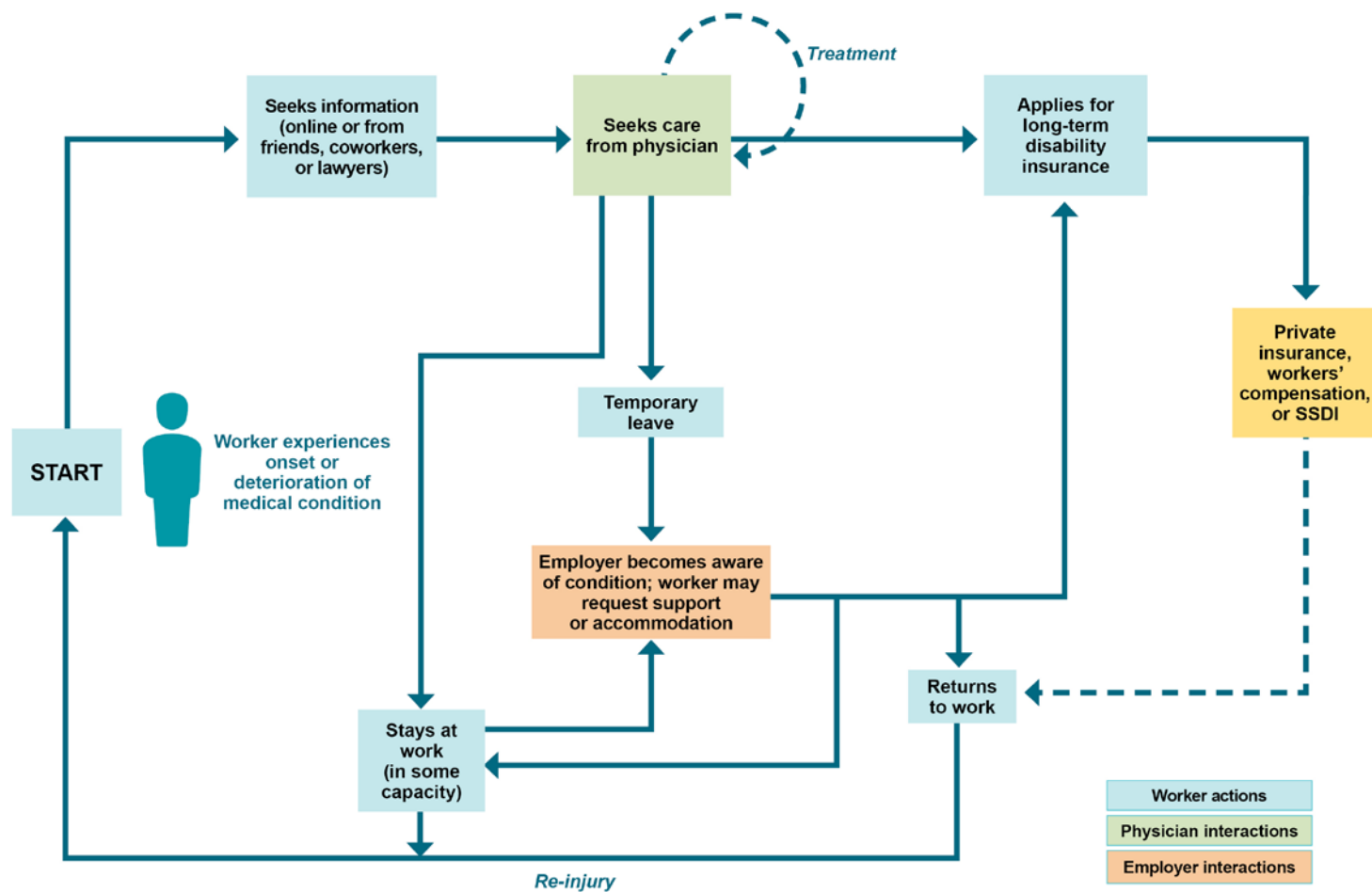
The paper proceeds as follows. In Chapter II, we describe the key events, stakeholders, and interactions that influence the decision to remain in work after adult onset of a chronic illness or disabling condition, and the behavioral bottlenecks that manifest in this context. In Chapter III, we discuss behavioral interventions that could alter the decision-making environment to promote job retention. In Chapter IV, we recommend interventions to prioritize for rigorous pilot testing to assess their effectiveness. Chapter V concludes.

II. KEY EVENTS, STAKEHOLDERS, AND BEHAVIORAL BOTTLENECKS

A. Key events

After workers experience the onset of a new condition that affects their ability to work, there are multiple actors involved and several decision points arise. Figure II.1 presents a highly simplified model of one possible set of decision points. At the onset of a new medical condition, workers may begin to seek information on the potential consequences of the condition. This could involve Internet searching; consulting friends, family, or coworkers; and tapping any workplace resources they know about. At some point, they may seek care from a physician, who provides treatment and information. Physicians can be highly influential at this point in helping to shape the worker's expectations for an eventual return to work or potentially convincing the patient that work may no longer be possible (Denne et al. 2015; ACOEM 2008). The workers may take temporary leave from their jobs to recover, introducing potential financial stress. At this point, the employer may become aware of the situation if he or she is not already aware. In some cases, workplace supports may be available to enable the workers to continue in their jobs in some capacity. If at some point the workers feel that their best option is to leave the workforce, they may seek long-term disability benefits such as SSDI or private insurance. Some will rejoin the labor force after some time on long-term disability benefits; in other cases, the exit is permanent.

Figure II.1. Key steps and interactions leading to job retention or long-term disability



B. Key stakeholders

The various stakeholders involved in a worker's trajectory after the onset of a work-limiting condition have disparate and sometimes competing incentives.

1. Workers

The stakeholder who is most directly affected by decisions about remaining in work, and has the biggest stake in the outcome, is the worker himself or herself. Although work-limiting conditions can affect any worker, SSDI entrants are disproportionately likely to be older, work in small or medium-sized companies, have low educational attainment and low wages and household income, and receive benefits from welfare programs before they enter SSDI. They are more likely to suffer from chronic conditions such as musculoskeletal conditions (especially lower back pain), chronic pain, or mental health disorders (Stapleton et al. 2015).¹

Although the conditions that affect these workers may be chronic, the path to potential long-term disability starts when a condition begins to affect a worker's capacity to do his or her job. At that point, decisions about work heavily influence long-term outcomes. If the workers leave their job for an extended period of time, their likelihood of returning to the workforce wanes rapidly. By one widely accepted estimate, 80 percent of people who are absent from work for six weeks or longer require assistance to return (Wynne et al. 2005). If the absence lasts 6 months, the probability of returning to work is only 50 percent, and if the absence lasts 12 months, the probability of returning declines to less than 20 percent (NIDMAR 1995).

For many workers, the reality of long-term disability can be very different from what they anticipate. There is growing evidence that people who leave the workforce altogether and go on long-term disability benefits have substantially worse outcomes than workers who remain at least partially in work. SSDI payments are smaller than many people expect, and smaller than many workers' potential earnings in the labor force (Ben-Shalom and Burak 2016). In addition, eligibility for long-term disability is not certain and is likely to take much longer to establish than many workers expect. The average time to final determination for an SSDI claim is about 14 months, and the process can take well over two years (Autor et al. 2015). There is also a strong association between worklessness and poor health, financial hardship, and social isolation (Waddell and Burton 2006; Strully 2009), while work is associated with better health outcomes (including mental health) and with full participation in society (Waddell and Burton 2006). In addition to the social aspects of work, people benefit from a sense of purpose and meaning and from the knowledge that they contribute productively to society.

2. Physicians

Physicians and other health care providers play an important, authoritative role in helping workers understand their health condition and its consequences. They can provide information about immediate and long-term treatment needs, as well as implications for activities of daily living and the ability to work in the short, medium, and long term. They also influence their

¹ In 2014, 778,796 individuals were awarded SSDI disabled worker benefits, and 68 percent of them were age 50 or above. Among all awardees, 14.6 percent had mental disorders (other than intellectual disability) and 36.1 percent had diseases of the musculoskeletal system and connective tissue as their primary diagnoses. These percentages were 8.4 and 41.8, respectively, among awardees age 50 and above (SSA 2015).

patients' expectations for recovery or at least improvement to a point where work is possible (Heidkamp and Christian 2013). Practice patterns can also have a large effect. Prescribing opioids to manage chronic pain, which is a common (and increasingly scrutinized) practice in modern medicine, is associated with increased risk of permanent disability (see, for example, Webster et al. 2007). When people apply for SSDI, the treating physician's opinion receives significant weight in disability determination. In this paper, we focus specifically on physicians because they can be highly influential in shaping their patients' trajectory after symptom onset and associated functional decline. However, other types of providers (such as pain specialists, occupational and physical therapists, and counselors) can play similar roles in their interactions with workers who are experiencing new or worsening medical conditions that threaten work.

The degree to which physicians are personally and financially invested in the employment outcome of a patient with a potentially work-limiting condition can be shaped by the terms of the physician's contract, as well as other efforts by payers to focus attention on work outcomes. In most cases, physicians' reimbursement does not depend on whether their patients ultimately can return to work, although some insurers use non-financial incentives. For example, the Ohio Bureau of Workers' Compensation (2016) publishes an annual report card of managed care organizations that lists the average number of days its enrollees are absent from work. It also sends reports to high-volume physicians, comparing their job retention statistics to those of their peers. Social comparison can be a highly effective motivator (Samson 2014). Large, self-insured employers who contract directly with providers to design new benefit programs can establish physician accountability in terms of lost work days or work exit or they can drop physicians from their networks for poor performance on these dimensions (Eggbeer et al. 2016). However, these approaches are relatively rare. There is thus an asymmetry between physicians' influence on, and their personal investment in, whether or not workers with an injury or illness remain in the workforce.

One factor that can significantly affect physicians' interactions with patients experiencing new medical conditions is the physicians' level of experience with work-limiting conditions. Many primary care physicians rarely encounter questions about potentially disabling conditions, although some types of specialists (such as those in occupational medicine or mental health) may encounter these issues more frequently. Therefore, many physicians may lack firm knowledge or experience of how much time off is appropriate for specific work-limiting conditions. They may also lack knowledge of the physical requirements of different jobs and the types of supports that may be available to help workers remain in their jobs in full or limited capacity. Importantly, physicians may not be aware of the long-term health and economic consequences of worklessness.

In addition to lacking clear guidelines on work-related issues, many physicians also lack time. Physicians, particularly primary care physicians, juggle many competing obligations. They are expected to discuss a growing set of topics with their patients in ever-shrinking visit times (Rozanski 2012). As a result, physicians may rely on heuristics, or rules of thumb, to guide their practice decisions. Many of these rules of thumb are valid and useful, but an ill-informed heuristic may lead physicians to make poor decisions, even though that is not their intent. Physicians who see few patients with work-limiting conditions may be more likely to rely on ill-informed or outdated heuristics regarding time off from work. Furthermore, a growing emphasis on customer satisfaction metrics may lead physicians to feel pressure to act according to their

patients' wishes (Zgierska et al. 2014). Patients who are still experiencing symptoms or who fear that returning to work too soon will aggravate their condition may insist on more time off, and without awareness or knowledge of evidence-based, objective guidelines to follow, physicians may find it difficult to deny the worker's request.²

One key challenge in engaging physicians in efforts to promote job retention is to make it easy and attractive to take actions that favor staying in work over prolonged absence or permanent departure from the labor force when work is consistent with a worker's medical condition. This involves increasing the salience of issues related to job retention at the point of care and fostering a sense among physicians that work is an important component of overall health, and therefore well within their purview. Providing heuristics backed by solid scientific evidence can improve physicians' ability to recommend appropriate treatment and time off work.

3. Insurers and other health care payers

The entities responsible for financially supporting people who cannot work for a period of time have a large stake in job retention. This is particularly true of public insurance programs such as SSDI and Medicare, which bear the costs associated with SSDI take-up after disability onset. The SSDI program would be on sounder financial footing if fewer people left the workforce permanently to draw benefits. Private short-term disability or long-term disability insurers can also benefit from workers returning to work quickly or otherwise leaving their rolls, for example by transitioning to public assistance. However, if insurers lack external incentives to promote job retention, they may simply adjust the premiums they charge in each year to recover the previous year's losses.

Interactions between workers and disability insurers can heavily influence job retention outcomes. For example, it is common for long-term disability insurers to require their beneficiaries to apply for SSDI (Hotfelder n.d.). The obvious effect of such a policy is to increase the rate at which workers transition to permanent disability benefits. It also creates unnecessary administrative burden for the U.S. Social Security Administration (SSA), as many of the applications made under these circumstances will be dismissed for not meeting SSDI eligibility criteria.

The SSDI application process is another set of interactions that affect a worker's incentives regarding work after an injury or illness. To be eligible, applicants must demonstrate that they cannot engage in substantial gainful activity (SGA), currently defined as monthly earnings in excess of \$1,130 for claimants who are not blind (SSA 2016). Claimants who try to return to work and earn more than the SGA limit are penalized with a delay in benefit eligibility. Workers who are already experiencing financial hardship from lost earnings may consider it too risky to attempt to return to work if doing so might jeopardize benefits they and their families are counting on receiving. This unwillingness to risk lost benefits even for the potential of increased future income amounts to a form of loss aversion.

² The two most commonly used disability duration guidelines in the U.S. are Reed Group's MDGuidelines (Reed Group n.d.) and the Work Loss Data Institute's Official Disability Guidelines (ODG) (Work Loss Data Institute n.d.). Both sets of guidelines are based on millions of lost-time cases and are proprietary.

Health insurers also play a role in determining workers' and physicians' incentives to seek job retention through reimbursement policies. "Return to employment" is not an outcome for which physicians can be reimbursed, which might reduce the likelihood of their focusing on job retention. Decisions on whether to reimburse for specific procedures, medical devices, or other occupational support products that might improve a worker's ability to stay in the labor force are also consequential.

4. Employers

Employers are well placed to enact policies that enable workers experiencing disability onset to remain in their jobs. They can, for example, establish prevention or disability management programs. They can allow flexible work schedules during recovery, allow part-time work arrangements, or provide workplace supports for workers with disabilities. Employers are most likely to adopt job retention policies when the benefits of such policies outweigh the costs. This is most likely the case for workers with skills or qualifications that are valuable to the employer and which would be difficult or costly to replace through hiring and training. In the case of low-skilled workers who are more easily replaced, employers are less likely to find it worthwhile to invest in job retention (Bardos et al. 2015).³

There is considerable variation in the types and amount of support provided by employers to workers who experience disability onset as adults. Employer practice depends on several factors, including size, region, industry, and general labor market conditions. Applicable regulations also heavily influence how employers deal with adult-onset medical conditions, for example:

- The *Family and Medical Leave Act* entitles employees of private companies with 50 or more employees to take up to 12 weeks of unpaid medical leave without putting their jobs at risk (DOL n.d.).
- The *Americans with Disabilities Act* requires employers with 15 or more employees to make "reasonable accommodations" to permit qualified employees with disabilities to perform essential job duties (EEOC 2008). However, employers are exempt if they can demonstrate that providing such accommodations poses an "undue hardship." Depending on the cost of the required accommodation and the size and financial resources of the employer, it may be fairly easy to avoid making accommodations by claiming undue hardship. For employers with fewer than 15 employees, no regulations govern job retention programs; supports and accommodations are at the employer's discretion.
- Recent changes to *Section 503 of the Rehabilitation Act* of 1973, which became effective on March 24, 2014, introduced a hiring goal for federal contractors and subcontractors that 7 percent of each job group in their workforce be qualified individuals with disabilities.⁴ These requirements do not apply to other employers.

³ A notable exception is employers of low-skilled workers at high risk for job-related disability. In this case, experience-rated workers' compensation premiums provide an incentive to invest in disability prevention and job retention (Bardos et al. 2015).

⁴ See: <https://www.dol.gov/ofccp/regs/compliance/section503.htm>.

Another important factor in an employer's response to a worker who develops a work-limiting condition is the quality of the employer-employee relationship. The likelihood of providing supports or accommodations may depend on whether the employer views the employee as a valuable contributor, an interchangeable unit of labor, or a frequent source of conflict. In some cases, managers' concern about the cost implications to their specific business units may reduce their incentives to provide accommodations. Centralized accommodation funds can help relieve the burden on business units (Ben-Shalom 2016), and consultants can provide free information on the true cost to employers of many accommodations (for example, via the DOL-funded Job Accommodation Network [JAN]⁵).

A number of formal programs have been developed specifically to help interested businesses navigate issues surrounding adult onset of work-limiting conditions. Employee assistance programs (EAPs) are workplace benefit programs that assist employees (including management) with personal or work-related problems that may affect their job performance, health, or general well-being. EAPs can play a role in preventing disability onset by providing assessment and counseling services to reduce stressors in and out of work that contribute to injury or illness (Attridge 2016; Willingham 2008). They can also improve chances for a quick return to work after injury or illness by connecting workers to community support resources (Attridge 2012; Brunelle and Lui 2003) and by providing support services to employers and supervisors. Such programs are increasingly available to employees across the United States, with a majority of large and medium-sized employers offering EAP services (Kaiser and HRET 2013; Mercer 2013) and a growing number of small workplaces adopting them.

There are no required standards for EAPs in the United States, and therefore programs vary substantially in the type and quality of services they offer. Employers can select EAPs that have undergone voluntary accreditation, and some resources exist to help employers select an appropriate program (EASNA 2009). Worker utilization of EAP clinical services (such as face-to-face, short-term counseling) tends to be low, however, generally ranging from 5 to 10 percent (EASNA 2009). Full-service programs, staffed by employee assistance professionals and including onsite counselors, tend to have higher utilization rates (10 to 20 percent), based partly on more promotion in the workplace and improved trust in the programs among employees and managers (Attridge 2012). One reason for low utilization may be an impression that EAPs are primarily for helping employees with substance abuse and behavioral health issues rather than those with physical conditions that threaten work.

Some employers enter into consortia called employer resource networks (ERNs) to pool human resources services, focusing specifically on job retention among low-skilled employees. Generally, ERNs are composed of fewer than 10 small to medium-sized businesses from sectors that employ low-wage workers, such as manufacturing, retail, and hospitality. They commonly involve partnerships with community organizations such as social service agencies, chambers of commerce, and vocational education institutions that can provide additional resources (Derr and Holcomb 2010). In this way, members can provide a more expansive set of employment supports and job retention services than they could as individual entities. ERNs are most likely to be

⁵ See: <https://askjan.org/>.

successful when the services provided are well matched to the needs and resources of the participating businesses, employees, and community partners.

5. Advocates

An industry has developed around transitioning workers to public assistance. Some law firms' entire practice centers on helping people apply for and receive benefits. Non-attorney claimant representatives serve a similar purpose. Many believe they are acting in their clients' best interest by ensuring they have access to essential income and health benefits. However, given that payment generally depends on a client successfully enrolling in SSDI, there is potential for a conflict of interest when clients would be better served by continuing in the workforce with appropriate supports. In some cases, the possibility of a lump-sum back-payment upon enrollment, coupled with payment plans that award a set fraction of the worker's eventual award to the representative, provides a perverse incentive to draw out the application process to maximize payment (MacDonald and Williams 1995). This can increase financial hardship on applicants and, by keeping them out of work for an extended period, reduce their ability to re-enter the workforce should their application be denied.

C. Behavioral bottlenecks

In addition to facing complex and conflicting incentives, stakeholders may be subject to cognitive or psychological limitations that impede their ability to make decisions that promote job retention when that outcome would maximize their welfare. Table II.1 summarizes the behavioral bottlenecks that apply to stakeholders involved in a worker's trajectory after the onset of an injury or illness.

Table II.1. Behavioral bottlenecks that affect job retention

Stakeholder	Behavioral bottleneck	Description
Worker	Cognitive overload; scarcity	Limited capacity to weigh trade-offs and make welfare-maximizing decisions due to stress, decision complexity, and financial or physical hardship
	Affective forecasting	Tendency to believe future happiness and well-being will be the same as the present; leads to underestimation of one's ability to adapt
	False beliefs	Incorrect beliefs about economic, health, and psychological outcomes associated with work versus disability
	Time inconsistency	Tendency to give stronger weight to payoffs close to the present when considering trade-offs between the present and the future
Physician	Cognitive overload; salience	Limited capacity to devote attention to issues not directly related to the patient's immediate medical question
	Lack of reference point	No evidence-based reference points to anchor decisions about appropriate time off work or when referral to functional specialists may be beneficial
Employers	Mistaken beliefs	Underestimating benefits of job retention or overestimating costs of accommodations and supports

1. Workers

Psychosocial factors can be very important in decision making when workers experience the onset of a disability. The onset of a chronic or disabling condition that limits a worker's ability to do his or her job can be extremely disorienting. In addition to stress associated with having developed an illness or disability, the worker may experience financial stress from lost earnings, loss of identity and self-esteem associated with work, stigma (particularly in the case of mental health and substance use conditions), and stress associated with disruption of family or home-life roles and norms (Wynne and McAnaney 2004). Under conditions of financial and psychological stress, decision making suffers, particularly in decisions that involve trading off present costs against future benefits, as in the decision to return to work (Mullainathan and Shafir 2013).

In addition, people often consider options in terms of how the possible outcomes compare to a reference point (Kahneman and Tversky 1979). That is, does a particular outcome constitute a gain or a loss for the individual? As most people only experience the onset of a work-limiting condition once, workers commonly lack reference points for thinking about how their injury or disability will affect their ability to work moving forward. Compounding this uncertainty is a tendency called affective forecasting, whereby people assume that their current state will be permanent, and cannot envision a different future. For workers who temporarily cannot work in the initial phases of an illness or injury, it can be difficult to believe that work will ever be possible in the future, and so making efforts to do so seems futile (Wilson and Gilbert 2003; Halpern and Arnold 2008).

It is also common for people to have mistaken beliefs about what entering long-term disability entails and how it may affect their future financial and psychological well-being. Conventional wisdom holds that going on disability will free an injured or ill worker from the need to earn a living, an outcome that may be particularly attractive to workers with low skills and few attractive work options and/or who underestimate the social and psychological value of work (Joffe-Walt 2013). This impression might be reinforced by family, friends, and physicians who, though well-meaning, might not have full information about the impact of leaving the workforce. Others with less benevolent motives can also promote an overly optimistic view of life on benefits, including disability insurers eager to get beneficiaries off their rolls and lawyers whose practice is predicated on getting workers into SSDI.

A similar dynamic can arise in workers' compensation (WC), where workers may face a choice between a lump sum settlement or regular payments and insurance against future health issues. Lump sum payments are attractive for insurers, conferring closure and certainty about the amount to be paid, and for attorneys, who might receive a percentage of the payment. The choice for individuals is less clear. People with imperfect information about the future health costs associated with their illness or injury might be better off insuring against needing lots of care in the future. Also, receiving regular payments rather than a lump sum can help people better manage their money over time and avoid making quick decisions about how to make their one-time payout last for a potentially significant period of time. They can also help people with imperfect self-control avoid short-term spending decisions that deplete financial resources. Nonetheless, it has long been recognized that individuals opt for lump sum payments more frequently than expected from the perspective of a rational economic framework (Modigliani 1985).

2. Physicians

As described in the previous section, physicians are subject to immense time pressures. They must see many patients in a day and are expected to discuss a number of health issues with each of them. The cognitive load associated with providing patient care under present circumstances may make it difficult to devote additional cognitive, time, and office resources to extensive discussions of issues outside the immediate medical concern. Even without time pressures, physicians may rely on automatic rather than deliberate judgements due to similarities among patients presenting with similar complaints and symptoms (Hough 2013).

When questions related to work do arise, such as requests for certification of time off, physicians without significant experience on the topic of work and disability may lack reference points or valid heuristics for what is an appropriate length of leave, and may not be familiar with existing guidelines or support that other specialists or affiliated health care professionals could provide (for example, occupational medicine physicians, disability management specialists, vocational rehabilitation counselors, occupational or physical therapists, and others). In some circumstances, without a better source of information, the physician may rely on the worker to determine whether or not he or she is ready to resume work. Physicians may also tend to conflate diagnosis with disability, and not realize how strongly their advice and recommendations can influence their patients' reference points and expectations for recovery, which then can affect decisions about remaining at or returning to work.

3. Employers

In some cases, attention to the financial costs associated with workplace programs may lead employers to underestimate other (frequently implicit) costs associated with high employee turnover, including lower morale among remaining employees when individuals leave to enter long-term disability. They may also overestimate the costs of workplace accommodations for people with medical conditions (such as special equipment or flexible scheduling) and/or the likelihood that other employees will demand similar “perks.”⁶

⁶ To better understand these and other employer concerns, ODEP sponsored interviews with more than 1,000 employers who had sought assistance with job accommodations between June 2008 and July 2015 through its Job Accommodation Network (JAN). Most employers reported no or low cost for accommodating employees with disabilities as well as multiple direct and indirect benefits after making accommodations (Job Accommodation Network 2016).

III. POTENTIAL BEHAVIORAL INTERVENTIONS

Based on the behavioral bottlenecks that can occur following the onset of a new physical or mental condition that threatens work, we have identified a range of possible intervention strategies. Informed by behavioral principles, these interventions have potential to promote job retention by addressing common issues and shortcomings that result in workers exiting the labor market to enroll in long-term disability. We start by describing large, comprehensive interventions that target multiple stakeholders or actors, then proceed to describe interventions that specifically target a particular stakeholder or decision maker.

A key aspect of behavioral intervention design is identifying people who would like to (or for whom it would be beneficial to) achieve different outcomes, but for whom cognitive or psychosocial constraints hold them back. We focus on workers and physicians as the most promising targets for behavioral intervention. Workers have the most at stake and are the primary beneficiaries of job retention. Our focus on physicians is motivated by their strong potential to influence workers' beliefs and expectations about their ability to remain at or return to work, and their general commitment to helping their patients achieve good outcomes. Employers and other stakeholders are more likely to be making decisions based on economic interest and are therefore less amenable to behavioral interventions. However, these actors still have important roles in the context of the various interventions proposed, and we discuss possible incentives for their participation or support.

For each intervention, we identify a potential “trigger,” or an event that would cause the intervention to go into effect for a specific individual or group. We also specify a potential administrator and source of funding, which need not be the same entities. The key characteristic of a funder is willingness to pay the costs of the intervention. The administrator must be an individual or institution that has an incentive to achieve better job retention outcomes, and that the intervention participants would see as legitimate or authoritative. For example, SSA is a promising funder for many interventions because it stands to gain financially from lower rates of long-term disability and increased job retention among workers. However, SSA's financial interest in keeping people off the disability rolls may interfere with its ability to be an effective intervention administrator. Workers may be more likely to trust and respond positively to other actors they perceive as authoritative and impartial (for example, physicians or job retention counselors). Finally, we discuss important practical considerations for the development or implementation of these interventions. We summarize proposed interventions in Table III.1 and provide details in the subsections below.

Table III.1. Behavioral interventions to promote job retention

Intervention	Description	Trigger	Administrator
Multiple stakeholders			
Broad information campaign	<ul style="list-style-type: none"> Population-based intervention to change knowledge of and beliefs about disability and job retention among general public and physicians 	N/A	Federal or state government, public health-focused foundation, advocacy group, physician group
Multi-party dialogues	<ul style="list-style-type: none"> Bring benefits representative, worker, medical proxy, and employer together to discuss the worker's ability to remain in his or her job or eventually return to some other type of work 	STD or WC claim	<p>STD insurer</p> <p>Could be piloted in state that has statewide STD insurance. Potential administrators also include an EAP, ERN, or a state's workforce system.</p>
Workers			
Provision of job retention coach	<ul style="list-style-type: none"> Provide sessions with coach or advocate whose goal is to procure best outcome for worker 	<p>Physician referral</p> <p>STD or WC claim</p> <p>Request for extended work absence</p>	<p>Could be paid for with federal funds, but everyone would need to perceive the coach as having worker's best interests in mind. Potential administrators include EAP, ERN, or a state's workforce system.</p>
Financial counseling	<ul style="list-style-type: none"> Advice on likely financial outcomes if worker stays in work versus goes on long term disability benefits. <ul style="list-style-type: none"> Could be a standardized tool (for example, online, spreadsheet) Could be delivered as part of coaching session 	<p>Coaching session</p> <p>Could be offered and promoted on websites that provide information about long term disability benefits</p>	<p>Self-administered</p> <p>Coach or intermediary; could be part of intake or other early discussions</p> <p>Could be hosted on websites related to disability (would need to be a trusted source)</p>
Commitment device	<ul style="list-style-type: none"> Develop a return-to-work plan and schedule (possibly with physician or coach), and receive a payment if worker meets the stipulated milestones Plan could be broken into smaller, more manageable steps 	STD or WC claim	<p>STD insurers</p> <p>Could be piloted in state with statewide STD insurance</p> <p>Potential administrator could also be a state's workforce system</p>
Bonus payments for return to work	<ul style="list-style-type: none"> Retention bonus or partial payments for individuals who <ul style="list-style-type: none"> Return to work by specific date Stay or return to work early with reduced schedule Volunteer (rather than stay at home) 	STD or WC claim	<p>STD insurers</p> <p>ERN</p> <p>Could be piloted in state with statewide STD insurance or administered through a state's workforce system</p>

TABLE III.1 (continued)

Intervention	Description	Trigger	Administrator
Physicians			
Physician education	<ul style="list-style-type: none"> • Multi-component intervention aimed at improving physician-worker interactions around the onset of potential work-limiting conditions <ul style="list-style-type: none"> - Information about how physicians drive patient beliefs - Information on long-term costs of worklessness (to patient) - Primer on framing information and how it influences patient decision making, behavior - Guidelines about time off (to help physicians formulate better recommendations) for common injuries/conditions - Protocol for discussions related to time off work due to temporary/permanent disability, including when to suggest referral for functional assessment or to occupational medicine specialist • Could be letter/brochure, educational campaign, or direct training (see above) 	N/A	<p>Potential administrators include health insurers, disability insurers (including statewide STD insurance systems), hospital systems, state government, federal government, medical professional societies</p> <p>Likely more effective if paired with compensation for certain activities or if physicians can get continuing medical education credit for completing training</p>
EHR-based interventions	<ul style="list-style-type: none"> • EHR-based guidelines for treatment and time off work displayed when physician enters specific diagnosis codes • Does not have to be real-time; could be a reminder to physicians not to extend days off work after initial visit or to refer to disability/rehabilitation specialist 	<p>Request for days off work</p> <p>Diagnosis code indicating potential for work loss due to disability (for example, low back pain)</p>	Implemented by payers and/or providers (such as large hospital systems), but could be funded by state or federal government
Employment as quality metric	<ul style="list-style-type: none"> • Include employment as quality metric in pay-for-quality provider/physician payment schemes (for example, ACOs) 	N/A	Payers

STD = short-term disability; WC = workers' compensation; EAP = employee assistance program; ERN = employer resource network; EHR = electronic health record; ACO = accountable care organization.

A. Interventions targeting multiple stakeholders

Given that a number of people and entities influence workers' trajectories after adult onset of a new medical condition, interventions that target multiple stakeholders hold promise for altering behavior at the multiple points in the process laid out in Figure 1.

1. Public information campaign

A public information campaign is a population-based intervention aimed at changing knowledge and beliefs about potentially work-limiting conditions in the general public and among physicians. The primary goal is to educate workers (and physicians) about reasons and options for managing common medical conditions that would enable people to continue in their work. An example of this intervention is an information campaign conducted in 1997 in the state of Victoria, Australia, which focused on appropriate treatment of lower back pain, including recommendations against excessive rest and for work and physical activity. The campaign aired television commercials during prime time, featuring medical experts and celebrities who had successfully managed back pain, urging viewers to stay active, stay in work, and avoid resting for long periods of time. The campaign was supplemented by radio and print advertisements, billboards, and other initiatives. In addition, all physicians in Victoria received evidence-based guidelines for managing patients with lower back pain (Buchbinder et al. 2001).

Based on surveys of beliefs conducted before and after the intervention, there was significant improvement in population beliefs about back pain, indicating greater expected ability to cope. Physician beliefs also improved, with physicians significantly more likely to be aware that patients with low back pain can engage in work and that complete bed rest is not advised. Physicians also reported having altered their typical practice patterns for patients with low back pain, ordering fewer tests. Following the intervention, there was a 15 percent decline in the number of claims for back pain and in the rate of medical payments for back pain (Buchbinder, et al. 2001). By one estimate, a similar decrease would amount to SSDI savings of approximately \$6 billion per year (Prather n.d.). The effects of the campaign persisted three years after the intervention, although with a slight decline, suggesting that periodic maintenance campaigns may be necessary (Buchbinder and Jolley 2004).

A number of features of the Australia campaign could be readily adapted to the U.S. context. Information campaigns promoting healthy behaviors have been effective in the United States (see CDC [2016] for an example regarding tobacco cessation), suggesting potential for success in other areas. There is no triggering event for this intervention—it could begin at any time and run for as long as desired. Potential funders include health- and disability-focused foundations and federal, state, and local governments. These same entities could also administer the campaign, as could advocacy groups and physician societies. A large campaign would likely be expensive, but, in the case of musculoskeletal conditions (which are among the leading causes of SSDI entry [Zayatz 2005]), there is potential for a large return on investment if significant numbers of workers are diverted from exiting the labor force.

2. Multi-party dialogues

Given that workers, physicians, and employers all play important roles in the process that determines whether an ill or injured worker ultimately remains in the labor force, an intervention that brings them together with the purpose of promoting job retention when appropriate and

possible holds strong potential. Multi-party dialogues bring together a worker who has been on temporary leave from work for a medical condition, his or her employer, and the physician who certified the medical leave to discuss whether they can make available supports that enable full or partial resumption of work. The idea, a form of nudging, is based on a program of compulsory dialogues in Norway that was successful in reducing disability-related absence from work and preventing future health-related absences (Markussen et al. 2015).

The structure of work, health care, and disability benefits is very different in Norway from in the United States, but some features of the intervention could be adapted. It is unlikely that such meetings could be made compulsory for all parties, as they are in Norway, although it may be possible to require attendance from the worker, who has the most at stake in the process. In the Norwegian program, the local social security administration calls a meeting between the worker and employer (and, if deemed appropriate, the certifying physician) when a worker has been absent from work for six months. In Norway, the state pays for wage replacement after the first 16 days of absence from work; thus, the local administration is likely perceived as having authority to call such a meeting. In the United States, the corresponding funding and administering entity could be a short-term disability insurer, although as mentioned previously, interest in promoting job retention varies among insurers. States that have statewide short-term disability insurance programs (California, Hawaii, New Jersey, New York, and Rhode Island) present opportunities to pilot programs involving multi-party dialogues.

In the Norwegian system, the trigger for a compulsory dialogue is the worker's absence from work for six months. This could be a different time period in the United States, or it could depend on the worker's condition according to evidence-based treatment and return-to-work guidelines (Work Loss Data Institute n.d.; Reed Group n.d.). Some insurers might wish to call an initial dialogue as soon as the worker files a claim, or limit the dialogues to certain conditions (such as musculoskeletal or mental health conditions). In some cases, the development of screening processes could avoid expending resources on cases likely to resolve without intervention or extreme cases in which the worker is unlikely to return to work due to the severity of his or her condition.

Although short-term disability insurers could likely encourage the worker and employer (or employer's representative) to attend, it may be more difficult in the United States to secure participation from the worker's certifying physician, given the many demands on physician time. For that reason, non-physician medical advocates could be involved, such as physical therapists or job retention coaches (described in the next section). Compensation for participation would likely increase the likelihood of physician involvement.

B. Interventions targeting workers

As the primary decision maker in the question of remaining in the workforce or leaving, the worker is an especially important target for interventions.

1. Job retention coach

Given the high levels of stress and uncertainty workers experience around the onset of a work-limiting medical condition, and also given the prevalence of incorrect information and perverse incentives among stakeholders, referring workers to specialized coaches whose task is

to procure the best outcome for the worker could improve job retention. In many cases, the best outcome will involve returning to work, potentially to the same job with accommodations or supports, or possibly to a new job with different physical requirements. For some workers, long-term disability may be the only viable option, and the coach can ensure the worker has realistic expectations and strategies to minimize the physical, social, and psychological impacts of leaving the workforce. By giving workers access to an unbiased source of information and support, this intervention could alleviate the cognitive overload that occurs during the onset of a condition. Workers may feel overwhelmed by the amount of information to process regarding medical, financial, family, and vocational decisions. The coach can help sort through the information and provide guidance, including descriptions of possible workplace accommodations and available supports, of which many workers may be unaware.⁷

The multiplicity and complexity of issues surrounding job retention in the face of disability onset suggests that coaches should not be entrenched in a single approach. One way to avoid this would be to provide coaching in teams, which could include occupational therapists, peer counselors, and other specialists. Each worker could have an assigned primary coach but have access to others on the team. However, such an approach might be costlier than one offering individual coaches.

Use of a job retention coach could be coupled with a number of other interventions to exploit potential synergies. A coach could serve as the worker's health advocate in multi-party dialogues as described earlier. Financial counseling could also be an important component of coaching, providing workers a clear picture of the trade-offs between remaining in the workforce and going on long-term disability. We describe this aspect in more detail below.

A number of junctures could serve as triggers for job retention coaching. Physicians could refer workers to coaches if they perceive that a condition might threaten patients' ability to remain in their job. A short-term disability or workers' compensation claim could also prompt a referral from an insurer, or a request for extended absence from work could prompt a referral from an employer. The federal government, for example SSA or the U.S. Department of Labor, could fund the coaching as long as all involved perceive the coach as bound to act purely in the worker's best interest. This is similar to the operation of other SSA programs—for example, the Work Incentives Planning and Assistance program—with SSA providing funds and community organizations administering the intervention. Alternatively, EAPs or ERNs could administer coaching programs. Quality is an important consideration; it is vital that coaches have correct information and specialized training to ensure the provided advice and supports are appropriate and truly helpful to workers in navigating the period following disability onset.

⁷ Washington State's Centers of Occupational Health and Education (COHE) program involves a role for health services coordinators who monitor WC claims electronically and serve as coordinators for all parties involved: worker, employer, provider, and insurer. The COHE model is a more complex behavioral intervention than the job coach we describe, targeting multiple parties, but with a slightly different goal. Whereas the job coach we envision seeks the best outcome for the worker (whether that is returning to work or receiving long term benefits), the COHE health services coordinator seeks the best way to return to maximum productivity quickly (Stapleton and Christian 2016).

2. Financial counseling

As mentioned above, it is common for workers to misconceive their financial situation should they elect to leave the workforce and enroll in long-term disability. Financial advice would likely be extremely helpful in understanding the implications of decisions regarding job retention. Most useful would be financial advice that takes into account relevant demographic and geographic characteristics, the worker's occupation and earnings, and other information to produce an estimate of future income under two scenarios: return to work and long-term disability.

Producing this information and making it available could take place in a number of ways. Most accessibly, the advice could come from a standardized online tool, hosted on a credible source's website. The administrator could be a foundation or a disability activist or interest group; it could even be a government entity such as the Consumer Financial Protection Bureau, which provides some information about SSDI on its website. Disability Benefits 101 is a variant of this type of intervention that several states have adopted, providing information on the trade-offs between employment and benefits (World Institute on Disability 2015). Financial counseling could also be provided as part of job retention coaching, as described previously. This would help workers interpret the output and ensure they are aware of any uncertainty in financial projections.

Funding for the creation and maintenance of the financial tool could come from any of the potential administrators listed above. The tool should be carefully validated and its assumptions and default inputs (if there are any) should be transparent and clearly explained (Contreary et al. 2015).

3. Financial incentives for full or partial return to work

Although financial incentives are not usually considered behavioral interventions (as utility maximization is expected under a rational economics framework), their design can incorporate behavioral principles to increase their likelihood of success. In this section, we discuss two forms of financial incentives that have potential for promoting behavior that increases the likelihood of job retention.

Commitment device. A commitment device is a means by which people can lock themselves into a particular course of action that might be difficult to choose in the moment (such as exercise) but that produces a desired result (weight loss). At the start of their absence from work, employees could specify a plan for returning to work and receive a reward if they meet the stipulated milestones. The plan could involve several steps, such as partial return or return with extensive supports before full return. Small, frequent rewards (for productive steps toward return to work) can often be more effective than large one-time awards (Kahneman and Tversky 1979). The plan could be developed collaboratively with a coach or physician, and potentially with the employer as well, who can commit to providing accommodations along the path to return.

The trigger for this intervention could be a short-term disability claim, and short-term disability insurers could both fund and administer such a program, providing incentive payments in lieu of continuing to pay benefits. States with statewide short-term disability programs are

promising venues for pilot testing. This intervention could also be delivered as a possible enhancement to job retention coaching.

Commitment devices often have a downside, requiring participants to provide collateral that is forfeited if they do not meet the stated goal. We do not recommend incorporating this feature into our proposed intervention, as financial hardship is common among people experiencing adult onset of a new medical condition. However, the incentive payments would need to be carefully designed to ensure they do not encourage unnecessary use by being too high. The option could be limited to certain conditions, or otherwise the program could involve a high level of scrutiny for beneficiaries who wish to select this option.

Bonus payments for return to work. Workers who return to work by a specified date (that depends on their condition) rather than progressing to long-term disability could earn a retention bonus. Such programs could be modeled after reemployment bonus pilots tested in the 1980s and early 2000s in the U.S. to incentivize Unemployment Insurance claimants to return to work earlier (Kirby et al., 2008; Decker and Perez-Johnson, 2004; and O’Leary, Decker, and Wandner, 2005). The bonus could be a partial payment of the short- or long-term disability benefits available to them or could be unrelated to workers’ expected benefit stream. The payment trigger could be returning to the same job or to a different job. ERNs are well placed to facilitate transfers of employees among member businesses in the event workers cannot keep their old job, but could work a different job in another company. State Workforce Investment Boards could play a similar role as part of their efforts to help employers find productive workers. Volunteer work could also qualify, incentivizing workers to engage in productive activities that prevent their staying at home, becoming socially isolated, and potentially worsening their condition through inactivity. The financial rewards could be delivered in the context of job retention coaching, and/or could be tied to milestones in a return-to-work plan developed during multi-party dialogues.

As with commitment devices, the trigger could be a short-term disability, workers’ compensation, or Unemployment Insurance claim, and short-term disability insurers or American Job Centers could administer and fund the program. ERNs could also fund and administer such a program. Also similar to commitment devices, this type of intervention is prone to perverse incentives and needs careful attention to design. In addition to potentially incentivizing unnecessary disability leave, workers who should remain on leave might attempt to return too soon in order to earn a payment, risk aggravating their condition that requires further leave, and create uncertainty for employers regarding staffing.

C. Interventions targeting physicians

We recognize that physicians can be highly influential in a worker’s job retention outcome, but that issues related to work can be less salient to them than immediate medical concerns. Therefore, most of the interventions we propose aim to increase the salience of job retention at the point of care and provide physicians with timely access to relevant tools and other resources to help them guide workers toward staying in the labor force, when appropriate and possible.

1. Physician education

We propose a multi-component intervention aimed at improving physician–worker interactions around the onset of potential work-limiting conditions. This is to remedy the fact that physicians often have little experience treating patients at this juncture and little knowledge of available supports. The intervention could include education on how physicians drive patient beliefs, including a primer on framing health information and how that influences patient decision making and behavior. It could also provide information on the long-term health, financial, and social costs of worklessness to patients. Dissemination of evidence-based guidelines about time off for common injuries and conditions might help physicians formulate better recommendations, as might a protocol for discussions related to time off work due to temporary or permanent disability. Such protocols might include checklists of important discussion topics (Gawande 2009) and suggestions for when to refer patients for functional assessment or coaching.

The factor most likely to limit the effectiveness of this intervention is physician time. Physicians are unlikely to have the time and energy to devote attention to brochures, letters, or other unsolicited materials, particularly given the small fraction of patients affected by job retention issues. Focusing on issues that can cover more patients may improve the appeal of this education. For example, the issue of framing information and how that influences patient decision making is universal. Including concrete examples related to framing expectations around work and disability might provide an opportunity to relate important guidance to physicians in a format more likely to receive attention. Alternatively, the intervention could target specialists and other physicians who have a threshold number of patients with specified disability-related diagnoses.

Physician education interventions are most likely to be successful if they include opportunities for compensation, either by paying physicians for specific services or by including quality metrics related to work outcomes (described in more detail below). Allowing physicians to receive continuing medical education credit for completing job retention education will also likely increase receptivity to the information, as well as provide the information when physicians are in a receptive frame of mind regarding information about new practices. As an alternative, education programs that are part of medical residency or medical school training could be effective in ensuring physicians start their careers with beneficial habits and heuristics.

This intervention does not require a trigger—it could start at any time. Foundations with a health care focus, federal and state governments, and physician specialty societies could all potentially serve as both funders and administrators, as long as physicians view the source of the information as authoritative.

2. Electronic health record-based interventions

As EHRs become universal, they present an opportunity to provide relevant information to physicians at the point of care. This reduces the need for all physicians to have expertise related to the work and productivity implications of medical conditions, as guidelines on, for example, disability duration, can be accessed in real time. One version of this type of intervention could involve displaying guidelines on time off work when a physician enters specific diagnosis codes. If the physician wishes to depart from guidelines, he or she could also be prompted to enter a

free text justification into the patient’s health record (“accountable justification”). This approach has been previously found to reduce inappropriate antibiotic prescribing behavior (Meeker et al. 2016). Alternatively, the EHR could provide reminders cautioning against extending time off work or nudging referral to a disability or rehabilitation specialist.

One potential concern with EHR-based interventions is that excessive alerts can reduce the likelihood that physicians pay attention to the reminders. Frequent notifications can result in alert fatigue, wherein physicians begin to ignore alerts (Avery et al. 2005). Indiscriminate use of electronic reminders may therefore contribute to a “tragedy of the commons,” whereby attempts to increase physician attention to a specific issue may actually reduce physicians’ attention to that issue as well as to other existing reminder programs. Targeting EHR-based interventions based on physician specialties or specific patient characteristics, as well as ensuring that alerts are used only for clinically-significant issues and provide actionable information, may increase the likelihood of successful intervention.

This intervention is most likely adoptable by large hospital systems, which are able to control or heavily influence EHR systems. In an early example, in 2011–2012, Kaiser Permanente rolled out its activity prescription (ARx) program, which provided evidence-based disability duration tables to physicians at the point of care, as well as web-based disability management training (Wiesner et al. 2016). Large insurers, including large self-insured employers, could encourage or incentivize other hospitals systems to adopt similar programs.

3. Employment as a quality metric

Pay-for-quality schemes are becoming quite common, including Medicare’s recent Merit-Based Incentive Payment System, under which physicians are subject to incentive and penalty payment adjustments depending on their performance on a range of quality metrics (CMS n.d.). This proposed intervention involves including patient employment retention as a quality metric for the purposes of payment adjustment. Health care payers would administer this intervention by adding employment (which would have to be clearly defined) to existing sets of metrics.

This proposed intervention involves a number of limitations. Physician buy-in is important for acceptance of quality metrics, and employment as a metric may face some resistance. Physicians prefer to be evaluated on quality measures over which they have control, and they likely will not perceive work issues to satisfy that criterion. Furthermore, employment would be one of many measures, and in terms of physician attention, would likely be outcompeted by other measures that affect a larger number of patients. Adopting employment as a quality metric will be more effective and widely accepted if it occurs after a high-quality, large-scale education program that trains physicians in issues related to job retention among their patients.

IV. RECOMMENDATIONS

Each of the interventions described in the previous section has the potential to improve job retention among workers with new onset of medical conditions. As such, they could increase tax revenue to the federal and state governments, as well as decrease expenditures on public assistance programs. Workers could benefit from increased income and better physical and mental health outcomes, and employers from retaining valued employees. However, before any new intervention is widely adopted, it is important to test it on a small scale. This requires lower resource commitment and still enables stakeholders to observe the impacts of the intervention. Promising interventions can then be tweaked based on early findings before being scaled up or adapted to different contexts. Here, we present our recommendations for proof-of-concept tests of the proposed interventions.

A. Criteria for pilot testing

To identify interventions with the strongest potential for pilot testing, we considered three main criteria:

1. The intervention should have strong potential to influence outcomes related to job retention among experienced workers who face a new onset of medical conditions that affect their ability to work.
2. It should be feasible to implement the intervention on a small scale. Funding for large, complex interventions will likely be difficult to obtain (at least initially). We recommend starting with lower-cost options with the potential for large return on investment.
3. The intervention should have potential to be adopted at scale. Although it is important to start small and pilot-test interventions before proceeding to larger tests, it is important to consider whether the intervention will ever be scalable, and therefore be considered as a real solution to the problem of large numbers of people with work potential ending up in long-term disability.

B. Priority interventions

We believe that four of the interventions proposed above present excellent options for small-scale pilot testing, and should be prioritized. In all cases, we advise testing several variants of the intervention at once to assess which, if any, design elements are most important for achieving results.

1 and 2. Interventions targeting workers: Job retention coach and financial counseling with or without financial incentives for return-to-work

Referral to a job retention coach and financial counseling with or without financial incentives for return to work are likely the most promising options, as they address the major impediments to welfare-maximizing decision-making on the part of workers at the time of disability onset, namely, cognitive overload and false beliefs about financial outcomes in long-term disability. Furthermore, both can draw on existing infrastructure (for example, EAP or ERN for coaching, existing websites for financial tools, and experience from UI bonus experiments and other pilots).

3. Interventions targeting physicians: EHR-based interventions

EHR-based interventions are likely the most promising of the interventions targeting physicians. Individual physician practices, single hospitals, or hospital systems can undertake them unilaterally, and they are low-cost, requiring only some additional programming after the content is determined. They aim to alter physician behavior without altering their compensation, so resistance from physicians should be minimal, and some physicians may value having guidelines and information readily available when treating patients at risk for work loss.

4. Interventions targeting multiple stakeholders: Multi-party dialogues

In states that have statewide short-term disability insurance, multi-party dialogues are a good candidate for pilot testing. Bringing together key stakeholders to identify feasible options for workplace supports and create a concrete plan for return has the potential to greatly increase job retention. As noted, multi-party dialogues could also be an element of a job retention coaching intervention.

C. Proof-of-concept pilot costs

The cost of conducting a proof-of-concept pilot test of any of the priority interventions we presented above would depend on many specifics that would need to be fleshed out—most notably, the intervention’s complexity and the specific context in which it is implemented. Based on our past experience with similar projects and some key assumptions specified below, we estimate that piloting these priority interventions could cost between \$200,000 and \$1 to \$2 million. Developing and piloting a relatively narrow intervention, such as the financial counseling tool, would be at the lower end of this range; a more complex intervention, such as job coaching with return-to-work bonuses, would be at the upper range. Costs would increase if the intervention incorporates multiple behavioral strategies—for example, job coaching with multi-party dialogues, financial counseling, and return-to-work bonuses. The piloting costs for an EHR-based intervention would likely fall around the middle of this range, with costs depending on the complexity of the coding necessary to trigger deployment of guidelines or referral recommendations and of the integration of these features into existing EHR systems.

The range of possible cost estimates presented above assumes the following:

- A 6-to-12 month effort to develop and implement the behavioral intervention and study design to the point of sample enrollment (length depending on the complexity of the intervention);
- A 6-to-24 month operation period for the interventions with ongoing implementation support (including random assignment and staff training) and monitoring activities by the research team (length depending on the rate of sample enrollment and the time necessary to reach the desired enrollment target);
- Some qualitative data collection to assess fidelity, address any challenges encountered, and identify possible improvements;
- Sample follow-up *via administrative records only* and costs dependent on the quality of the administrative records data available;

- One major report, summary brief, and two briefings on pilot findings; and
- Estimates exclude salary or bonus costs.

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V. CONCLUSIONS

In this paper, we identify promising interventions that harness behavioral insights to promote job retention among workers who experience the onset of a potentially work-limiting medical condition. Recognizing that cognitive and psychological factors affect decision making, we propose interventions that take into account the various reasons individual workers and physicians might make decisions that reduce the likelihood of job retention, and that can help promote decisions that may drive better outcomes. These interventions are amenable to rigorous pilot testing, and, if effective, can be scaled up to increase job retention, improving outcomes for workers and the financial stability of benefit programs.

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