

# Chapter 15

## Pain Prevention in Integrated Primary Care



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### 15.1 Definition and Diagnostic Criteria

The contemporary definition of pain was initially developed in 1975 by the International Association for the Study of Pain (IASP). Currently, IASP defines pain as “an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage” (Raja et al., 2020). However, it is important to go beyond this seemingly simple definition to understand several clarifications that further develop the concept of pain. First, pain is considered subjective in nature and is influenced by biological, psychological, and social factors. Pain is a distinct phenomenon from nociception (or stimulation of pain receptors), and IASP is clear that pain cannot be assumed based on the activity of sensory neurons alone. Further, this definition acknowledges that people learn the concept of pain through their life experiences. While an individual’s report of pain should be

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respected, verbal descriptions of pain are only one of many ways pain can be expressed.

Defining pain is fraught with challenges, and extensive scholarship is devoted to parsing the conceptualization of pain (e.g., Aydede, 2019; Cohen et al., 2018; Doleys, 2017). Throughout this scholarship, there is debate on what “counts” as pain and how to better operationalize this construct, as a way to better inform the patient and provider experience. Specifically, defining pain has a minimum of two interdependent challenges. First, the experience of pain can be ambiguous and vague (Cohen et al., 2018). Pain symptoms, or the “unpleasant sensory and emotional experience,” lack the clinical specificity of other conditions that can be tested and confirmed. By comparison, a long bone fracture would be clearly viewed when imaged or the presence of biomarkers in bloodwork would indicate disease pathology. Second, appropriately translating the phenomena of pain into words is notoriously difficult (Cohen et al., 2018). Often patients describe pain using similes, such as “pain that stabs like a knife,” that do not readily translate to clinically meaningful criteria. Additionally, despite the universality of pain, two individuals can describe pain in distinctly different ways.

Along with the complexities of defining pain as a phenomenon, there are inconsistencies in how acute and chronic pain are classified. Nonetheless, it is essential to distinguish between acute and chronic pain as approaches to treatment are often based on this distinction. *Acute pain* is generally linked with a specific injury or event (e.g., a surgical procedure) and lasts up to three months (King, 2007; Nugraha et al., 2019). *Sub-acute pain* has been described as pain that is present for at least 6 weeks but fewer than 3 months (King, 2007). Pain that lasts for 3 months or longer is considered *chronic pain* (IASP Task Force on Taxonomy, 1994; Treede et al., 2015). Others have defined chronic pain as pain that occurs most or all days in at least the past 6 months, while *high impact chronic pain* is chronic pain that limits routine life or work activities on most or all days in the past 6 months (Von Korff et al., 2016).

Acute pain can progress into chronic pain in a process referred to as *chronification* (Pak et al., 2018). Chronification can occur for many common medical conditions seen in primary care (e.g., musculoskeletal, neurological, cardiac, etc.) as well as postoperative pain and post-trauma pain (McGreevy et al., 2011). Most instances of acute pain do not ultimately transition to chronic pain, but a sizeable minority of patients experience chronification. In a large prognostic study of acute low back in primary care, a two-year study found that 54% of patients experienced at least one recurrence within 6 months and 47% experienced recurrence in the subsequent 18 months (Mehling et al., 2012). Similarly, in a large descriptive study of over 5000 primary care adults age 65 years and older, only 23% reported that their back pain resolved within 12 months (Rundell et al., 2015). Peripheral and central sensitization which increase sensitivity to painful stimuli (and potentially non-painful stimuli) appear to be key biological mechanisms that contribute to chronification, although the specific factors leading to chronification vary by type of pain concern (e.g., surgical, traumatic, herpetic neuralgia, etc.; McGreevy et al., 2011). The acute

to chronic transition is highly complex and influenced by several risk factors described subsequently.

## 15.2 Prevalence and Age of Onset

National estimates for prevalence of pain conditions vary, often widely, depending on data source (e.g., national sample v. sample drawn from one health system) and definition (e.g., defining diagnoses with medical record data v. self-report). According to an analysis of the 2016 National Health Interview Survey (NHIS) by Dahlhamer et al. (2018), 50 million US adults, or about 20% of the adult population, experienced chronic pain in 2016. A further 19.6 million (an additional 8%) experienced high impact chronic pain. In general, prevalence, particularly for chronic pain, increases with age, ranging from 7% prevalence of chronic pain among 18- to 24-year-olds up to 34% prevalence among those 85 years and older. A similar relationship exists for high impact chronic pain, from 1.5% in 18- to 24-year-olds to 16% in those 85 and older. In addition to higher prevalence by age, greater pain burden may also vary by demographic factors. Women have higher prevalence rates than men (20.8% v. 17.8%, age-adjusted), and non-Hispanic White individuals have the greatest prevalence of chronic pain (21.0%, age-adjusted), compared to 17.8% for non-Hispanic Black and 16.7% for Hispanic individuals. As both education level and income increase, prevalence of chronic pain decreases.

Although a wide array of medical conditions are associated with chronic pain, it is often cited that musculoskeletal conditions are the most common specific sources of pain (Institute of Medicine of the National Academy of Science, 2011). Low back pain, in particular, is the most frequent source of concern across musculoskeletal conditions and is especially relevant for the primary care setting. In a retrospective review of national medical claims data (using ICD-9 diagnosis codes; data from 2000 through 2012), back pain was the most common diagnosis (74.5% of those with pain diagnoses), while degenerative spine disease (63.6%), neuritis/radiculitis (52.8%), and limb pain (50.0%) were also prevalent (Murphy et al., 2017). Further, only about 25% of the cohort had a single pain diagnosis, while the remaining sample had two or more. In another national survey using the 2012 NHIS, which includes self-report of pain conditions, 54.5% of US adults had a musculoskeletal pain disorder, while arthritic conditions (22.1%), lower back pain (20.3%), non-arthritic joint pain/other joint conditions (17.5%), neck pain (14.3%), and sciatica (9.8%) were also present (Clarke et al., 2016).

## 15.3 Pain Risk Factors

Risk factors for chronic pain are voluminous, biopsychosocial in nature, and include both modifiable and non-modifiable factors that may vary across the lifespan. Further, pain risk factors can intersect with one another in dynamic ways and fluctuate in temporal relationship to an injury event (e.g., pre- v. post-injury) or onset of a pain-causing illness. The most obvious risk for chronic pain is an underlying pain-causing condition for which the symptoms may be acute or chronic in nature. Examples of underlying illnesses include chronic musculoskeletal conditions, neurological conditions (e.g., stroke, multiple sclerosis, persistent migraine), cardiovascular or cardiopulmonary conditions (e.g., heart disease, chronic obstructive lung disease), gastrointestinal conditions (e.g., irritable bowel syndrome), metabolic conditions (e.g., diabetes), cancers, viral infections (e.g., shingles), and traumatic or polytraumatic injury, among many others. Further, the presence of at least one pain-causing condition increases the likelihood of developing a secondary pain site, and surgical correction introduces new risk for postoperative pain (Kehlet et al., 2006).

A recent review by Mills et al. (2019) described broad risk factor classifications for pain chronification, which include patient demographics, health behaviors and lifestyle, and other clinical correlates. These classifications are briefly summarized below.

### 15.3.1 Patient Demographics

Demographics, particularly age, racial and ethnic background, sex, socioeconomic status, and military history are typically considered to be among the most notable non-modifiable demographic correlates of all-cause chronic pain. Increased risk for chronic pain appears most consistently associated with older age, female sex, and veteran status.

#### 15.3.1.1 Age

Most studies suggest a relative increase in risk for chronic pain beginning in middle to late middle age. This association may be intuitive given the increased risk for painful conditions and medical comorbidity with the aging process. However, some studies have also shown relatively high rates of chronic pain even among adolescents and young adults, specifically pain associated with life events (e.g., child birth) or treatment history (e.g., surgery; Kehlet et al., 2006).

### **15.3.1.2 Race and Ethnicity**

Findings on the contribution of race and ethnicity to chronic pain risk are mixed, in part attributable to widespread differences in sampling and study methodology. Some large-scale community-based studies in the United States (Dahlhamer et al., 2018) evidence higher chronic pain risk for individuals who identify as non-Hispanic Whites, whereas a study performed in the United Kingdom showed higher risk for pain among individuals who identified as Black, Asian, or multi-racial when compared to White respondents (Macfarlane et al., 2015). In contrast, a clinical study conducted in the United States (Ndao-Brumblay & Green, 2005) showed comparable pain severity reports among Black and White women after accounting for other psychosocial covariates.

### **15.3.1.3 Sex and Gender**

Although female sex has consistently been associated with higher pain risk (Chenot et al., 2008), it is also plausible that this finding is related to the greater likelihood that women (v. men) will evidence established pain risk factors and subsequently report and seek treatment for pain (Wijnhoven et al., 2006).

### **15.3.1.4 Socioeconomic and Occupational Status**

In US studies, greater pain risk has consistently been found among individuals at socioeconomic disadvantage, lower educational level, and those who work in physically (e.g., repetitive movements; Palmer, 2003) and emotionally taxing positions (Leroux et al., 2005). Military veterans, in particular, have been shown to be at higher risk for chronic pain in general as well as more severe chronic pain than civilians (Nahin, 2017), likely due to the physically demanding nature of military service as well as the high burden of injury and/or combat-related trauma. Some evidence suggests women veterans report greater pain interference and intensity than male veterans (Naylor et al., 2019).

## ***15.3.2 Health Behaviors and Lifestyle Factors***

Health behaviors and lifestyle factors are considered modifiable pain risk factors. Within this domain, mixed findings exist on the linkage between chronic pain and alcohol and/or tobacco use, poor diet, time spent sitting, and physical inactivity. Importantly, these health behavior and lifestyle factors are also associated with other clinical conditions, such as diabetes (Pico-Espinosa et al., 2017), which themselves also function as pain risk factors.

### **15.3.2.1 Alcohol and Tobacco Use**

Alcohol and tobacco use are common among patients with chronic pain (Mills et al., 2019) and often considered to be maladaptive pain coping strategies. Although data on the impact of alcohol use on pain are mixed, a recent meta-analysis (Thompson et al., 2017) supported the short-term effectiveness of alcohol as an analgesic, albeit at higher than recommended levels of alcohol intake, which in turn places individuals at risk for additional alcohol-related complications and further injury. Studies have shown a relatively consistent, positive relationship between increased tobacco use and greater pain intensity and interference (Weingarten et al., 2008).

### **15.3.2.2 Diet and Exercise**

Insufficient evidence exists to suggest a direct link between diet and pain chronification though some work examining the role of nutritional interventions in reducing chronic pain has shown promise (Brain et al., 2019). However, poor diet is linked to other pain risk factors such as obesity and general fitness levels. While exercise is generally accepted as protective against pain, some studies have found vigorous activity (El-Metwally et al., 2007) to be a potential pain risk factor among youth.

## **15.3.3 Clinical Correlates**

Clinical correlates, which may include mental and physical health conditions, also serve as noteworthy risk factors for the chronification of pain, and these factors may exist as pre- (non-modifiable history) or post-injury (modifiable through treatment) risks.

### **15.3.3.1 Fitness and Weight Control**

Among young people, factors such as range of motion, flexibility, and muscle endurance have been shown to predict low back pain (Jones et al., 2005). Often considered common and modifiable risk factors (Webb et al., 2003), obesity and overweight may be especially predictive of chronic pain in older adults (Qian et al., 2020).

### 15.3.3.2 Mental Health Comorbidity

Generally, underlying mental health conditions are associated with greater risk for chronic pain (Viana et al., 2018). Depression, in particular, is a “yellow flag” indicator of increased risk for worse pain-related outcomes, and depression’s role in developing or maintaining chronic pain is an active area of research (Glattacker et al., 2018). Studies suggest a bi-directional influence, wherein pain and mental health symptom severity have an exacerbating effect on one another (Shahidi et al., 2015).

### 15.3.3.3 Other Psychological Risk Factors

Other psychological risk factors, including early life stress and trauma histories (You et al., 2018), have also been associated with differential pain risks. For instance, though abuse history is associated with increased risk for chronic pain, personal resilience and adaptive coping skills (Ross et al., 2017) are protective factors. Further, an individual’s personal beliefs about chronic pain (e.g., catastrophizing, treatment outcomes) and the pain experience can also serve as noteworthy risk factors (Borkum, 2010). Often included as “yellow flag” indicators (Glattacker et al., 2018), maladaptive cognitions and behaviors such as pain and activity avoidance, low pain self-efficacy, pain catastrophizing, and the expectation of long-term disability are frequently associated with increased risk of chronification and worse functional outcomes.

## 15.4 Effective Pain Screening

In many healthcare settings, pain is universally monitored as “the fifth vital sign” (Lorenz et al., 2009) using a standard 0–10 numeric rating scale (NRS) that gauges pain severity. Advantages of the NRS are ease of administration, brevity, and accuracy when administered using standard procedures. Critiques include that the single numeric rating does not provide information beyond pain severity, does not yield clinically actionable information, and that it is often implemented with low fidelity. Multiple derivations of this scale have been published, including verbal and visual analogues (Karcioglu et al., 2018) wherein pain intensity ratings are gathered along a linear continuum with specified anchor points (e.g., no pain to worst pain imaginable). Recent derivations include visual analogues for e-health and mobile devices (Bird et al., 2016; Escalona-Marfil et al., 2020) and item permutations that include questions related to pain interference/functional impairment. Typically, a positive endorsement of significant pain concerns or independent report of pain-related functional impairment signals a need for further clinical assessment by way of an additional clinical interview and/or standardized measure (e.g., Short-Form McGill Pain Questionnaire; Melzack, 1987). Although a comprehensive discussion of

**Table 15.1** Suggested pain screening and measurement tools for the IPC setting

Measuring pain intensity and pain-related activity interference			
<i>Name</i>	Brief description	# Items	Exemplar reference
Brief Pain Inventory (BPI) – Short Form	Multidimensional screen for pain intensity and functional impairment	9	Cleeland & Ryan, (1994)
Defense and Veterans Pain Rating Scale (DVPRS)	11-point visual analogue rating scale coupled with questions on pain interference	5	Buckenmaier et al. (2013)
PEG	Assesses both pain severity and pain-related interference in (1) general activities and 2) enjoyment of life	3	Krebs et al. (2009)
Faces Pain Scale-Revised (FPS-R)	7-point visual display of 7 faces to assess pain levels in pediatric populations	1	Hicks et al., (2001)
Numeric rating scale (NRS)	11-point (0–10) rating of pain severity, wherein higher scores signal a higher level of pain intensity	1	Krebs et al. (2007)
<i>Additional tools to assist with risk stratification (i.e., identifying those at greatest risk of developing chronic pain or significant functional impairment)</i>			
Orebro Musculoskeletal Pain Questionnaire (OMPQ)	A self-report of musculoskeletal pain and functional impairment predictive of future employment interference	25	Linton and Boersma (2003)
Optimal Screening for Prediction of Referral and Outcome - Yellow Flag (OSPRO-YF)	Brief multidimensional screen of “yellow flag” pain risk indicators including negative affect and fear-avoidance	10	Butera et al. (2020)
STarT Back Screening Tool (SBST)	Brief multidimensional screen of complex back pain risks	9	Storm et al. (2018)

screening and assessment instruments is beyond the scope of this chapter, several common instruments applicable to the integrated primary care (IPC) setting can be found in Table 15.1.

## 15.5 Review of Evidence: What Is Evidence-Based Prevention?

Evidence-based prevention of chronic pain is rooted in a biopsychosocial framework to direct intervention activities that include biomedical (e.g., algorithm-based prescribing of analgesics or other agents) and psychosocial interventions (e.g., psychological therapies). Additional non-pharmacologic modalities may include physical therapy, chiropractic, or complementary and integrative health treatments. Prevention activities will vary depending on the nature of the underlying pain concern, but the terms *primary*, *secondary*, and *tertiary prevention* as defined by the



Federal Pain Research Strategy Workgroup on the Prevention of Acute and Chronic Pain provide a useful organizing principle (Gatchel et al., 2018). According to these workgroup definitions, primary prevention of pain focuses very broadly on behaviors that will prevent acute and chronic pain by avoiding injury or accidents (e.g., use of seatbelts) or illness (e.g., immunizations), promoting healthy behaviors (e.g., weight management), or limiting pain resulting from chronic medical concerns (e.g., migraines) or procedures (e.g., post-surgical pain). Thus, the focus of primary prevention of pain is foremost on the antecedents of pain which are influenced by a host of biopsychosocial factors. All potential targets above are common prevention topics addressed by primary care teams (e.g., annual screening conducted by clinic staff to ensure patients are using seatbelts and providing education regarding the importance of this practice). Although provision of routine primary care may play an indirect role in the primary prevention of pain, no empirical studies have specifically examined the effect of IPC teams on pain prevention.

In contrast, interventions outside of the primary care clinic have shown promise in the primary prevention of low back pain in the military (George et al., 2009) and occupational settings (Sowah et al., 2018). These interventions typically include physical exercise (e.g., for strengthening, stabilizing, or increasing flexibility), education (e.g., describing causes of low back pain, reviewing strategies to avoid injury, engaging in behaviors that may reduce the impact of pain), or both. Population-based studies have also shown that educational media campaigns can be effective at changing general population beliefs and attitudes about back pain as well as reduction in disability and workers' compensation claims (Buchbinder et al., 2001). Although not specific to the primary care team, these studies provide proof of concept that primary prevention of pain is achievable using the relatively simple strategies of education and exercise promotion.

Secondary prevention of pain includes approaches that aim to limit chronification during the relatively short timeframe of three to six months following the onset of acute pain (Gatchel et al., 2018). As with the primary prevention of pain, there are no studies to date that have employed an IPC approach to address chronification. Whereas primary care clinics are likely to treat acute pain as part of standard primary care, typically these actions are designed to ameliorate acute pain rapidly rather than to purposefully prevent chronification. As chronification is a time-dependent process, prospective research can be challenging to conduct. However, some studies have shown that early psychosocial intervention in the acute phase of pain can be beneficial. For example, Linton and colleagues (2000) compared the impact of a six-session cognitive behavioral therapy (CBT) group intervention to psychoeducational materials for improving pain-related outcomes among patients with acute spinal pain receiving usual primary care. Both groups benefited over time, but those who attended the CBT group were nine times less likely to have used sick leave for their condition at one-year follow-up, compared to those who attended the psychoeducation group. Additionally, the CBT group was significantly less likely to use physician and physical therapy services relative to the education group. Although this study did not define chronification as a study endpoint, it speaks to the potential benefit of early psychosocial intervention in addressing pain.

Another challenge in preventing chronification is identifying those patients from among the many with painful conditions who are most likely to transition to chronic pain. As noted above, risk factors for chronic pain are abundant, but there are a few well-developed tools that can assist in screening patients to identify who is most likely to experience chronic pain (See Table 15.1). Finally, it should be noted that an additional challenge to this line of research is the underlying premise that there is a linear and uni-directional process underlying chronification. A simple acute-to-chronic categorization of pain is likely overly simplistic, and research has shown a variety of pain trajectories are evident (Glette et al., 2020).

Tertiary pain prevention addresses pain when it has become chronic by intervening to reduce its impact on daily functioning (Gatchel et al., 2018). Tertiary prevention has a rehabilitative focus to address the functional impairment across a variety of domains (e.g., social and occupational functioning) that often impacts those with chronic pain. Like primary and secondary pain prevention activities, IPC interventions to address chronic pain remain relatively sparse. Usual primary care treatment for chronic pain relies almost exclusively on provision of analgesics (Elder et al., 2016; Shaheed et al., 2016) despite national guidelines to incorporate non-pharmacologic approaches in light of established concerns over opioid safety (Dowell et al., 2016; US Department of Health and Human Services, 2019). These guidelines recommend evidence-based psychological therapies, such as CBT and related treatments (e.g., acceptance and commitment therapy, mindfulness-based treatments) as safer first-line treatments compared to opioid therapy.

Most psychological therapies for pain are designed for specialty care settings (e.g., a multidisciplinary chronic pain clinic), but two models of IPC have started to address tertiary prevention of chronic pain: (1) collaborative care management and 2) brief therapies delivered by co-located behavioral health providers. Generally, care management employs a nurse care manager who enacts an algorithm-based approach to care that revolves around ongoing assessment and monitoring of patient needs, as well as promoting treatment adherence, patient education, and referral management. Collaborative care approaches to pain management tend to be diverse in terms of their specific intervention approaches (e.g., guideline-adherent medication prescribing, psychosocial intervention, or both), but as a group, they appear to produce improvements in clinical outcomes. For example, one large randomized controlled trial tested tailored pain assessment by a care manager followed by routine telephone-based pain symptom assessment and self-management support provided bi-monthly for one year. Compared to primary care treatment as usual, collaborative care management for pain resulted in statistically significant albeit clinically modest improvements in pain-related disability and depression symptoms (Dobscha et al., 2009). A second, large randomized controlled trial found that automated self-management (i.e., automated symptom monitoring and nine web-based self-management modules) combined with care management to optimize non-opioid analgesic prescribing was superior to automated self-management alone for improving a combined measure of pain and mood symptoms among primary care patients (Kroenke et al., 2019). Although collaborative care management models

are not often implemented in everyday IPC settings, these studies are encouraging in that they indicate the potential of this approach to address tertiary pain prevention.

Pain interventions can also be implemented under a Primary Care Behavioral Health (PCBH) model (Robinson & Reiter, 2016) of IPC that co-locates a licensed independent behavioral health provider into primary care teams to provide assessment and brief intervention. In contrast to collaborative care management, the PCBH approach tends to be more commonly implemented, but this model has limited supporting empirical evidence. For example, pain schools, or group intervention that includes pain-related psychoeducation and support, are offered in PCBH to increase patients' understanding of the nature of chronic pain and its management. However, the effectiveness of pain schools is likely modest (Straube et al., 2016) as a single approach to tertiary pain prevention. By comparison, the literature on brief psychotherapies that employ CBT and related approaches to address chronic pain is promising. For example, evidence from work conducted in Veterans Health Administration (VHA) primary care clinics suggest that both group and individual CBT-based intervention that builds pain self-management skills in six appointments or less is associated with improvements in pain-related activity interference and pain intensity (Beehler et al., 2019; Martinson et al., 2020).

## 15.6 Universal, Indicated, and Selective Prevention

The primary, secondary, and tertiary scheme described above delineates pain prevention based on disease stage and progression (i.e., primary prevention works to prevent the onset of acute pain from illness or injury; secondary prevention works to limit chronification; and tertiary prevention reduces functional limitations from chronic pain). Another approach to pain prevention incorporates principles of risk stratification to delineate universal, selective, and indicated prevention strategies. Risk stratification consists of subgrouping a population of patients based on established risk factors for developing chronic pain. As noted previously in this chapter, given the large number and diverse nature of risk factors for pain, risk stratification is a logical approach to identifying those from among all patients most in need of intervention. There is also a body of evidence suggesting that risk stratification can be beneficial for pain prevention. For example, a recent systematic review that included nine secondary prevention trials among patients with acute back pain identified that risk stratification procedures are advantageous (Meyer et al., 2018). More specifically, patients who screened as low risk did not benefit meaningfully from supplements to usual care, such as educational information or promotion of physical activity. Correspondingly, medium and high-risk patients who were provided with both a CBT and exercise component benefitted from this additional intervention with improved physical and emotional functioning as well as earlier return to work.

A universal prevention strategy addresses an entire population, and the primary goal is to prevent the health problem from occurring. Generally, this population has an average level of risk for developing the health problem of interest. In the present

context, universal pain prevention is not a realistic or feasible goal. Many of the causes of acute pain are inadvertent (e.g., a car accident) or serve a clear adaptive function (e.g., pain when touching a hot burner on a stove). Usually, universal prevention is conducted without screening an individual for risk but can target specific sub-populations when warranted, such as wearing a seatbelt to prevent injury in a car accident. Theoretically, universal pain prevention would target all members of a population but would not account for any differences within that group (e.g., biopsychosocial factors that would alter risk for pain). Such discernment is the focus of selective prevention.

Selective prevention targets a specific group that is known to be at higher risk due to one or more biological, psychological, social, or environmental factors. Individual risk is not considered in selective prevention; the entire subgroup is targeted, even though one member of the subgroup may be at reduced personal risk while another may be at high personal risk. For example, shingles is well-known as a painful condition. The shingles vaccine is recommended specifically to those over 50 years of age because of known elevated risk in an older population. The primary goal of selective prevention is to reduce the incidence of disease and/or the related consequences, and in the context of pain, selective prevention is used to prevent chronification.

Finally, indicated prevention targets those individuals at highest risk with a focus on preventing consequences or complications of the underlying health problem. This approach includes screening or assessing an individual's specific risks, such as a military veteran who worked in a physically demanding role for many years or an athlete with a history of several acute injuries. In this context, indicated prevention focuses on reducing the morbidity associated with chronic pain including reducing the risk that chronic pain becomes high impact in nature. Indicated prevention is especially relevant for IPC practice, and as shown in Table 15.1, there are several instruments available to IPC team members to engage in individual-level risk assessment (e.g., six-item STarT screener for back pain; Storm et al., 2018).

The universal, indicated, and selective prevention approach aligns roughly with notions of primary, secondary, and tertiary prevention. Universal and primary prevention both operate with the widest lens, focusing on very similar strategies (e.g., avoiding injury and promoting healthy behaviors). Selective prevention subsumes both secondary and tertiary prevention which address subgroups with elevated risk levels. Indicated prevention also includes aspects of tertiary prevention, particularly the focus on reducing the impact of chronic pain on daily life and activities. Currently, the roles of IPC team members in each of these strategies are not well described, especially for universal and primary prevention. Given the population-based approach of most IPC models that emphasize primary prevention, it is important to consider one more perspective: the Prevention Paradox (Rose et al., 2008). This theorem states that a universal prevention program will have a greater return than a program that only targets those at high risk (i.e., indicated prevention). This phenomenon would occur because making small improvements in pain-related risk among the full population will ultimately yield larger gains in health outcomes than making large improvements in the small number of patients with the highest risk for

chronic pain. While important to consider this population perspective, addressing the Prevention Paradox becomes an even greater challenge when considering the unique nature of pain. There is no way to universally prevent pain because most acute pain is adaptive. Further, Rose's theorem may be at odds with practicality – shifting the overall population's risk level prevents more cases of disease but does not necessarily consider the feasibility, costs, or intricacies of universal prevention. How (and when) do we appropriately prevent pain?

## **15.7 Stepped Care Prevention Model: Role of Primary Care Provider (PCP) and Behavioral Health Provider (BHP)**

### ***15.7.1 Watchful Waiting***

A watchful waiting approach to chronic pain prevention is not well described in the IPC literature. In concept, watchful waiting consists of symptom monitoring to determine if the condition will resolve with no or minimal intervention to avoid treatments that are either unnecessary or those that could lead to unwanted side effects. Unfortunately, this term is a misnomer when applied to pain prevention because it reflects a biomedical framework in which psychosocial interventions are not seen as active ingredients of treatment. From a biopsychosocial perspective, there are many possible points of intervention for chronic pain and failing to provide assistance beyond symptom assessment is a missed opportunity to prevent the worsening of pain. Any member of the IPC team can provide assessment using brief measures like the NRS or the PEG (Krebs et al., 2009) in combination with simple interventions described below (e.g., psychoeducation, biblio-prevention, or e-health prevention tools) in an effort to promote patient self-management. If continued assessment shows progression of pain intensity or significant functional impairment, then more intensive intervention is warranted.

### ***15.7.2 Psychoeducation***

Psychoeducation is a typical starting point for non-pharmacologic intervention for pain, although it is most frequently offered as a tertiary prevention approach to assist those who already have chronic pain. The scope and depth of psychoeducation-based interventions varies significantly, and there is no uniform set of education that has been consistently supported by research. Psychoeducation topics can include any or all of the following: differentiating acute from chronic pain, the biopsychosocial model of pain and its relevance for preventing and treating pain, pain neuroscience, the expected course and impact of specific pain concerns, pain self-management approaches, and the importance of addressing pain-related

cognitive factors, such as fear-avoidance and pain catastrophizing. In addition to variation in educational content, the modality for psychoeducation can also vary widely. Psychoeducation can be delivered informally and sporadically, as part of a routine primary care visit, or delivered in a group format to take advantage of interaction among patients with similar pain concerns. Any appropriately trained member of the IPC team can provide psychoeducation. As part of usual primary care, PCPs may provide information regarding the basic anatomy and physiology of the underlying condition, what to expect in terms of the course of acute or chronic pain, and brief essential advice regarding treatment options, including self-management. Notably, when indicated, PCPs should also strongly encourage the patient to attend more comprehensive psychoeducational sessions with BHP, nurse, or other providers who have more time allotted for counseling-based prevention strategies.

Pain psychoeducation is likely a necessary but insufficient component of addressing pain prevention effectively. The evidence suggests that, compared to no intervention, psychoeducation produces a modest effect on pain intensity and pain-related functioning, but it is difficult to draw conclusions across studies because of the above noted heterogeneity in how psychoeducation is conceptualized and delivered (Straube et al., 2016). It is also challenging to know the net effect of psychoeducation, as it is often bundled with other interventions, such as strengthening or flexibility exercises, or with psychological skill-building approaches, such as CBT.

### **15.7.3 Biblio-Prevention**

Similar to psychoeducation, pain biblio-prevention aims to improve patients' knowledge regarding factual information about their chronic pain condition, promoting adaptive attitudes and beliefs around pain, and promotion of self-management. The prototypical biblio-therapy for management of chronic low back pain is *The Back Book*, which is focused on differentiating hurt v. harm, promoting activity engagement, and developing a positive coping-focused approach to pain management (Burton et al., 1999). Designed as a brief pamphlet, *The Back Book* has been found to be effective at improving fear-avoidance beliefs and pain-related physical functioning. This approach to education, or similar permutations of it, has become so common that *The Back Book* is often used in clinical trials as the education-control condition when compared to more comprehensive interventions like CBT (Baez et al., 2018). While biblio-prevention is useful at imparting knowledge and potentially changing patients' attitudes around pain, these approaches are likely insufficient as stand-alone strategies to substantially improve pain ratings or functional outcomes for many patients. The obvious advantage of biblio-prevention approaches is that it is convenient for the provider to offer educational materials to patients with sufficient literacy levels so that they can engage with the materials outside of clinic and at their own pace. Any member of the IPC team can initially provide these materials with follow-up appointments used to answer questions identified by the patient. As with psychoeducation, biblio-prevention can be used to

build a larger, more comprehensive approach to intervention depending on the needs of the patient.

### ***15.7.4 E-Health Prevention Tools***

There has been substantial growth in the number of web-based technologies and mobile apps to assist patients with chronic pain management. These modalities have the advantage of overcoming several logistical barriers to care including removing the need for patients to travel to pre-scheduled appointments for group or individual interventions. The approach of e-health is quite broad and can include any combination of moderated discussion groups, peer support, CBT and related psychological therapies, symptom monitoring and feedback, mind-body techniques, relaxation training, or behavioral activation. Thus, e-health tools are essentially platforms in which a variety of intervention techniques and targets are embedded. Systematic reviews suggest that e-health tools can be effective approaches to chronic pain management that lead to small but significant improvement in pain intensity, physical functioning, depression symptoms, pain self-efficacy, and pain-related cognitions (Heapy et al., 2015; Moman et al., 2019). However, it is important to consider that while the e-health modality appears feasible, the impact of the intervention is based on both the quality of the delivery system (e.g., usability and design) as well as the nature of the content (e.g., degree of evidence-based information). Mobile apps for pain management have mushroomed in recent years, but despite their widespread availability, most have not been scientifically evaluated for effectiveness (Salazar et al., 2018). While most interventions are designed to be self-guided in which the patient sets the pace and goals for use of the intervention, there is growing interest in combining e-health with a level of clinician support to improve engagement. Patient adherence to e-health approaches is often modest but may be improved by offering clinician support (Mohr et al., 2011), thereby combining technology and clinician interaction. Thus, while any member of the primary care team can “prescribe” an app, BHPs or nurses may engage in orienting the patient to the technology as well as scheduling follow-up to address barriers to continued use.

### ***15.7.5 Groups***

Group interventions are flexible in format and can address a range of pain prevention targets. Primary prevention can be addressed through groups that address lifestyle and wellness topics (e.g., weight management) that are risk factors for developing chronic pain. Groups may also directly address pain psychoeducation or psychological intervention, such as CBT, as primary or secondary prevention (Linton, 2002; Linton & Andersson, 2000). The evidence supporting group psychological treatment specifically in the IPC setting exclusively addresses tertiary



prevention (Lamb et al., 2010; Martinson et al., 2020). Patients may be referred to IPC group psychological interventions based on PCP recommendation or following initial consultation with the BHP who conducts additional functional assessment and symptom measurement to better understand the impact of chronic pain or contributing risk factors, such as co-occurring mental health conditions. BHPs may also assess the receptivity of the patient to group intervention or appropriateness of the patient for a group setting. Group interventions are most commonly led by the BHP (v. other members of the primary care team) or co-led with another BHP, such as a trainee. The content of group interventions can also vary, but CBT-based groups include a combination of psychoeducation, in vivo learning (e.g., engagement in relaxation exercises), review of homework, and relapse prevention. Direct interaction among group members is encouraged.

While the PCP may not play a significant role in most group formats, they are the starting point for referral to treatment and can encourage continued participation in group. Alternatively, PCPs play a larger and more well-defined role in group medical visits. Group medical visits, or shared medical appointments, can take a variety of forms but typically include the PCP in their role as medical provider and prescriber (Moitra et al., 2011). PCPs may meet with patients one-to-one as part of individualized follow-up, while the rest of the group is engaged by the BHP. A PCP may also co-lead with the BHP on topics of relevance, such as medication management or coping with chronic pain, with an effort to facilitate group interaction and learning among patients. Group medical visits may also bring in other providers, such as clinical pharmacists to assist with analgesic optimization or physical therapists to address how to safely engage in exercise or other activity-based interventions.

### **15.7.6 Individual**

Individual intervention can address any stage of pain prevention. However, like group interventions, individual IPC interventions have been exclusively described in terms of tertiary prevention. The content of individual psychological intervention is similar to that of groups (e.g., psychoeducation, skills training with in vivo learning, review of homework, relapse prevention) but allow for more tailored assessment and treatment for the individual at the expense of group discussion and learning from peers. PCPs do not typically provide individual level psychological intervention in addition to standard components of medical care, including diagnostic assessment, brief self-management advice, prescribing analgesics and adjunctive medications, and referrals to additional services (e.g., physical therapy, chiropractic, etc.). In a collaborative care management approach, BHPs or possibly nurse care managers conduct pain symptom assessment, psychoeducation, and address barriers to self-management to improve patient engagement in care (e.g., Dobscha et al., 2009). In an approach designed for the PCBH model, the BHP uses routine measurement to guide progression through a protocolized treatment that addresses core



CBT content (i.e., psychoeducation, behavioral activation and pacing, relaxation training, cognitive skills, and relapse prevention) that have been tailored by the BHP to ensure a patient-centered approach (Beehler et al., 2019). BHPs in both collaborative care management and PCBH roles provide periodic feedback to the PCP or other members of the IPC team to indicate progress or the need for additional intervention in the form of referral or modification to the medical treatment plan.

## 15.8 Implementation

As noted above, there is relatively little emphasis on primary and secondary prevention of pain in the United States, and most risk factors for developing chronic pain are not routinely addressed until symptoms exacerbate beyond mild to moderate levels. A comprehensive pain prevention program in the primary care setting must include early identification of risk factors, minimize potential for chronification, and improve overall functioning. Figure 15.1 displays the goals and potential approaches to include in a pain prevention program in an IPC clinic organized by target population. Although high-quality primary care services address primary prevention targets (e.g., promoting health and wellness) for pain through routine delivery of care, many clinics may not view these services as fully meeting the goal of pain prevention. Implementation and evaluation of a stepped care approach to pain prevention that includes the IPC team is one potential strategy to begin to address this need.

### 15.8.1 *Stepped Care Models for Pain Management*

Stepped care approaches to the prevention and treatment of pain emphasize primary care-based screening and management with additional specialized resources available for more complicated presentations. Stepped care is recommended by the American Academy of Pain Medicine (Gallagher & Fraifeld, 2010) and has been implemented within the Veterans Health Administration (VHA; (Rosenberger et al., 2011), the Department of Defense, and some Federally Qualified Health Centers (Anderson et al., 2013). VHA, for example, employs a stepped care strategy to provide a continuum of effective pain care for veterans with both acute and chronic pain. This approach is highly individualized, and interventions are added or expanded with increasing patient complexity and need. The foundational step emphasizes the importance of overall wellness and self-care (e.g., weight management, social support, nutrition) and environmental safety which are reflective of primary prevention strategies. Step one focuses on multidisciplinary primary care management of the majority of pain concerns, including brief versions of CBT for chronic pain delivery by the IPC BHP, physical therapy, complementary and integrative health approaches, and a variety of other approaches. Step two brings in

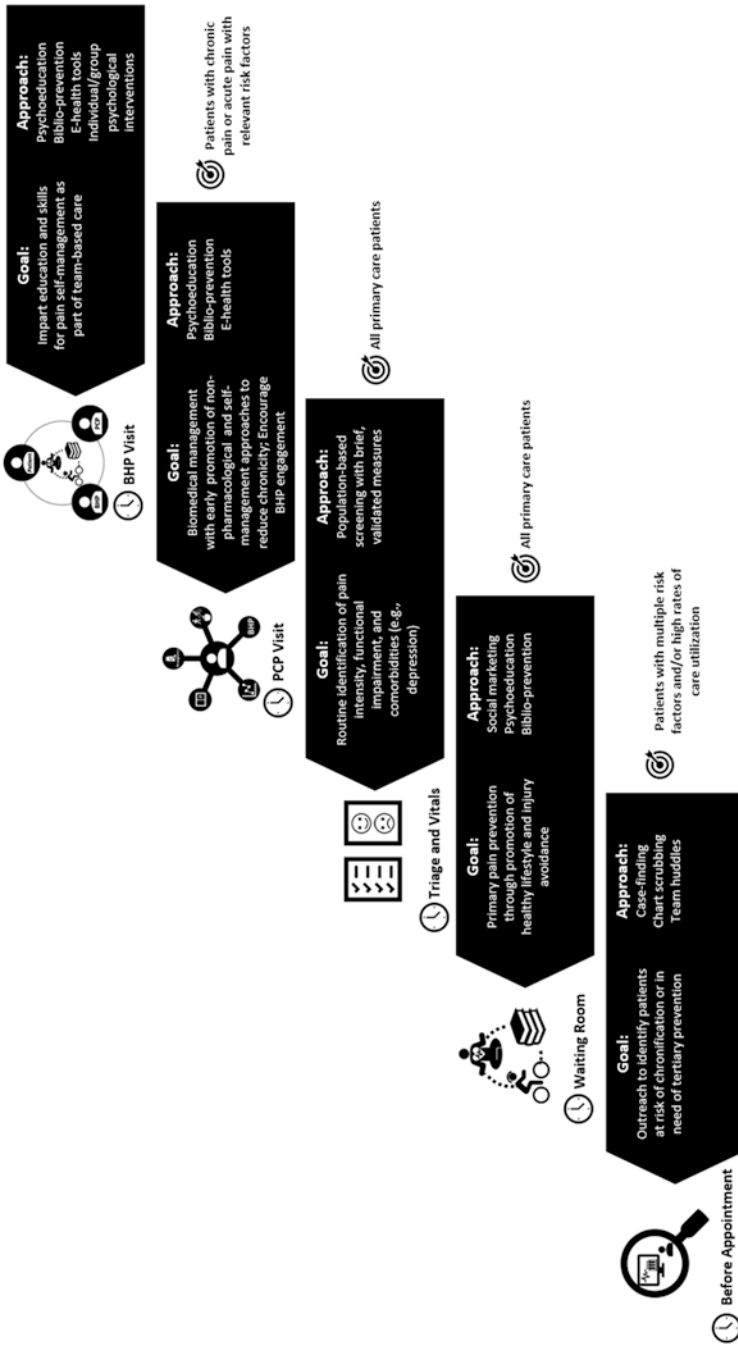


Fig. 15.1 Points of intervention for a comprehensive pain prevention program in an integrated primary care setting

specialty services such as pain medicine, physical and rehab medicine, and behavioral pain management for short-term co-management, whereas step three includes tertiary care services, such as residential pain rehabilitation programs.

The focus of the discussion that follows will address, in some detail, IPC approaches that target primary, secondary, and tertiary prevention as part of step one of a stepped care approach. Local implementation of a continuum of pain prevention services will vary based on clinic resources and contextual factors, but the approaches described below can likely be modified for many settings.

### ***15.8.2 Addressing the Continuum of Pain Prevention in IPC***

A comprehensive pain prevention program in IPC should consider four foundational intervention approaches. The first point of intervention focuses on primary pain prevention through social marketing and related approaches that publicly display persuasive educational information about pain risk factors through brochures and posters distributed through the clinic setting. Secondly, general health promotion, such as wellness groups, physical fitness groups, or stress management groups, can prevent pain by decreasing modifiable risk factors and maximizing protective factors. Thirdly, psychoeducation regarding pain management can be delivered through in-person, biblio-prevention, or e-health approaches. Fourth, the BHP, who routinely serves a broad percentage of the primary care population, is a critical component of pain prevention programming. In addition to offering biblio-prevention, e-health tools, or psychoeducation, BHPs are in the unique position to offer group or individual brief psychological interventions for pain for those needing tertiary prevention.

### ***15.8.3 Patient Identification***

Within the IPC setting, identification of patients with pain-related risk factors can begin even before the patient arrives for the medical appointment. One strategy is to engage in case finding in which an IPC team member, such as the nurse, can review the medical records of patients with upcoming appointments with the goal of identifying potential cases that have not already engaged in active wellness or biopsychosocial pain management. For example, cases might be identified based on presence of a specific pain-related condition, such as arthritis, along with other pain-related risk factors, such as depression or other mental health symptoms. The goal is to offer patients proactive outreach and engagement in interventions to reduce modifiable risk factors. As an alternative strategy, patients with pain-related conditions can be identified and prioritized for additional assessment as part of a review and discussion of upcoming appointments during routine team huddles. Routine chart scrubbing is one strategy to prepare for effective huddles and to

improve overall efficiency. Chart scrubbing is a systematic and proactive review of critical information in the electronic medical record to identify gaps in care to be addressed. Typically, a nurse or a medical assistance prints the daily patient schedule and makes note of key information about each scheduled appointment, such as labs, vaccinations, recent hospitalizations or emergency department visits, review of self-management goals, and risk factors for high-priority conditions. Scrubbing also includes the identification of patient visits that may require additional time and assistance from various team members, such as the BHP. Many clinics use a standardized form when scrubbing charts to ensure consistent information for each patient is reviewed. After the scrubbing process is completed, the information is shared and discussed with the entire IPC team during huddles.

An important feature of IPC for pain prevention is assuring that the BHP is available to take warm hand-offs when at-risk patients are identified by their PCP or through the case-finding and chart scrubbing procedures noted above. Some IPC programs may make it the expectation that any patient who presents to the PCP with significant pain symptoms or functional impairment is also seen by the BHP the same day. If the patient is experiencing acute pain, for example, this collaboration across IPC team members can be a critical point of early intervention to address risk factors and maximize protective factors with the goal of preventing chronification. For those patients referred with an established history of chronic pain, the PCP's warm hand-off to the BHP provides an efficient approach to expanding the scope of services to include biopsychosocial care such as psychological therapies. For some busy clinics, this strategy may not be completely feasible due to the high volume of patients. In this scenario, a risk stratification process through additional screening is warranted.

#### ***15.8.4 Functional Assessment and Intervention***

After a warm hand-off occurs, the BHP should conduct additional assessment. A functional assessment is a brief (~15–20 minutes), semi-structured approach used to identify how well a patient is functioning across life domains. Areas of functioning typically assessed include sleep, work/school, physical activity, personal relationships, mood, diet, substance use, and coping skills (Hunter et al., 2017). A functional assessment tailored for pain also explores factors that make pain better or worse, impact on daily functioning, and pain-related coping responses (positive and negative). The functional assessment should also include general descriptions of the pain as well as information about onset, frequency, and duration (Hunter et al., 2017). In addition to functional assessment, relevant symptom assessment should occur. Specifically, brief measures such as the PEG (Krebs et al., 2009) described earlier in this chapter can be incorporated into every appointment. The PEG is especially useful because of its brevity and multidimensional focus on both pain intensity and pain-related interference in general activities and enjoyment of life. Consistent use of the PEG establishes the foundation for measurement-based care.

The routine application of measurement has been found to improve the quality of care through improved early identification and assessment processes, creating a shared language for discussing symptoms, enhanced communication, as well as early identification of non-responders allowing to appropriately triage to more intensive pain management services (Dowrick et al., 2009). Additional brief, standardized assessments for mental health symptoms should be included as indicated, such as the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001).

Results of the symptom and functional assessment taken together with the patient's goals for treatment direct the approach to intervention. For example, a patient with minimal pain-specific concerns (e.g., manageable pain intensity, minimal activity interference) at the time of assessment could potentially benefit from low resource interventions such as biblio-prevention or e-health tools in an effort to provide education about the nature of chronic pain and ways to avoid chronification (e.g., staying active and managing comorbid medical and psychological conditions). Alternatively, assessment could reveal that comorbid mental health conditions are a relative priority for treatment in either the IPC or specialty setting that would ultimately reduce the risk of experiencing disabling pain subsequently. In contrast, if a patient reports significant pain intensity and reported disability and is amenable to IPC-based intervention, brief interventions can be employed to target pain management, comorbid conditions, or both. For example, enhancing problem-solving skills, providing brief interventions for depression or insomnia, and goal setting to increase self-management and general self-care are likely to improve overall functioning. Options for addressing pain management directly in the IPC setting include psychoeducation in individual or group format and brief psychological interventions for pain. Brief CBT-CP was designed specifically for use in IPC settings and has been tested in VHA clinics (Beehler et al., 2019). Brief CBT-CP can be used by any BHP with a solid foundation in basic CBT skills (e.g., relaxation training, behavioral activation, cognitive skills, etc.). Since most IPC intervention focuses on tertiary pain prevention, it is recommended that Brief CBT-CP and related interventions be made more widely available in IPC.

### ***15.8.5 IPC Team Communication***

One of the core features of IPC is communication among the interdisciplinary team members. Ideally, interprofessional communication should occur through established, routine processes across multiple modalities (e.g., written, verbal, and/or electronic). When implementing a pain prevention program, multiple points of communication should be established and maximized in order to provide the best patient care experience. Potential points of team communication include daily huddles, curbside consultations, warm hand-offs, weekly/monthly team meetings, co-signed progress notes, "view alerts" in shared electronic medical records, secure e-mails, and instant messaging.

### 15.8.5.1 Case Example

Consider a scenario in which a patient at risk for experiencing functional impairment from chronic pain is identified through chart scrubbing. This patient is scheduled to see the PCP regarding a flare-up in low back pain over the past several months that has resulted in several prior PCP appointments. The patient is flagged in part because of her co-occurring anxiety disorder diagnosis and tobacco use history. She is discussed among the team members during the morning huddle, and, after review, the team agrees that she might be a good candidate for meeting with the BHP. To ensure a good warm hand-off process, the PCP would discuss the concern to be addressed by the BHP with the patient using culturally appropriate language that is non-stigmatizing. The PCP would then describe the role of the BHP to the patient and ask for permission to introduce her to the BHP after the current appointment. If the patient agrees to meet with the BHP, the PCP conducts the warm hand-off through same day access scheduling slots. The PCP directly introduces the patient to the BHP and provides a brief description of the concerns based on the understanding of the patient's experience. The BHP confirms understanding the information conveyed by the PCP and engages the patient in care. After completing a pain-focused functional assessment and gathering symptom data through the PEG, the BHP provides feedback to the PCP through a quick secure instant message and briefly describes recommended team-based care interventions. The BHP offered the patient a face-to-face course of brief psychological intervention, but she declined. However, she was open to using a mobile app to track her pain to see if it changes (either worsened or improved) over the coming weeks in response to her daily activities. She also agreed to phone follow-up with the BHP to discuss barriers in using the app and to review the information she tracks.

Later that clinic day, the BHP checks-in by secure instant messaging with the PCP and suggests reinforcing the patient's use of the app as well as requests that the patient be re-referred if pain or functioning do not improve (or decline) and medication changes are being considered. This worsening of pain could indicate the need for re-assessment by the BHP at which time the CBT intervention option could be reintroduced alongside other options (e.g., referral to community resources). Next, the BHP documents key summary information for the entire IPC team through the shared electronic medical record. Finally, the next morning at the daily huddle, the BHP gives the team a brief (i.e., less than 2 minute) update on the outcomes of the functional assessment and the intervention the patient was willing to consider thereby completing the team-based care communication cycle.

### 15.8.6 *Racial and Ethnic Disparities in Pain Care*

Across a variety of medical settings, racial and ethnic disparities in pain perception, assessment, and treatment are well documented (Green et al., 2003). Physicians have been shown to be twice as likely to underestimate pain for Black patients

relative to non-Black patients (Staton et al., 2007). Further, providers may hold false beliefs that Black patients are less sensitive to pain than White patients due to presumed underlying biological differences (Hoffman et al., 2016). Unfortunately, these biased and inaccurate beliefs can influence clinical practice of any member of the IPC team. Although health disparities are ultimately a product of a number of patient, provider, healthcare system factors (Anderson et al., 2009), we encourage all providers to prioritize education and training designed to address implicit bias and improve cultural competence in the screening, assessment, and management of pain among diverse patients (Tait & Chibnall, 2014). In addition to improving individual provider competencies, IPC services have been shown to improve access to mental and behavioral health care for Latinos (Bridges et al., 2014) and older Black patients (Ayalon et al., 2007) that yields outcomes comparable to those observed in non-Hispanic White patients. Thus, IPC may hold significant potential to address early treatment of pain to limit chronification while also reducing racial and ethnic inequities in care.

### ***15.8.7 Implementation Challenges***

It is challenging to implement comprehensive pain prevention programs as evidenced by the dearth of such programs on a wide scale. PCPs typically report being ill-equipped to address and prevent pain from a biopsychosocial stance. Depending on the background, training, and prior experiences of the BHP, he or she may not be knowledgeable or confident in their ability to adequately address pain prevention or management. In addition to lack of confidence and skills, there continues to be misunderstandings, stigma, and negative provider beliefs about patients who experience chronic pain. Further, there is often a misperception that pain intervention requires highly specialized expertise and should only be addressed through more intensive services than typically offered by an IPC team. Another challenge is the pace of the primary care setting: when team members feel overwhelmed by the clinic volume, there may be little time, energy, or motivation devoted to establishing comprehensive prevention programs.

In order to successfully implement pain prevention, a robust package of implementation support should be offered. This type of implementation assistance should begin with broad provider education that includes the full IPC team. Topics should include the following: identifying and reducing stigma associated with treatment of patients with chronic pain; ensuring cultural competence with diverse patient populations; embracing a prevention-oriented treatment approach; increasing provider knowledge and confidence in developing biopsychosocial case formulations and providing evidence-based treatments that include non-pharmacologic options; and employing screening and measurement practices that enhance patient care and provide a monitor for evaluating patient outcomes that can be achieved in a primary care setting. Education should also include hands-on role-playing experience in which the team practices delivering these interventions as well as direct feedback

about the simulated patient interactions, thereby building providers' knowledge, skills, and confidence. If resources allow, education should be individualized and tailored for the needs of the clinic and providers.

In addition to education, more intensive forms of implementation support may be needed for many locations facing systemic implementation barriers (e.g., significant time constraints, belief that pain should be treated elsewhere, scheduling practices inconsistent with team-based care). For example, academic detailing (Davis & Taylor-Vaisey, 1997) can be used to identify the gaps between local clinic practice and current evidence-based treatment options. To conduct academic detailing, it is important to understand both current practices, and the individual beliefs, knowledge, and motivation of the providers. If gaps emerge between current practice and evidence-based guidelines, clear behavioral objectives for change should be provided. In addition to academic detailing, one of the most intensive forms of assistance is implementation facilitation. Implementation facilitation comes in many forms but typically includes multiple support strategies including routine consultation with specialists, identifying and developing champions, audit and feedback, as well as standard forms of technical assistance, which might include building policy dashboards or other resources such as note templates. Further, some IPC locations may have access to a specific form of facilitation, known as practice facilitation (Baskerville et al., 2012) in which an expert practice facilitator is hired by the organization to improve the quality of care through multiple, sequential quality improvement initiatives. Implementation of clinic-wide pain prevention is an ideal example of a target innovation for a practice facilitator.

## 15.9 Conclusion

Like public health measures for prevention of other chronic medical conditions, such as heart disease or diabetes, strategies to prevent chronic pain should be considered within IPC clinics. Exclusively biomedical approaches specifically targeting tertiary pain prevention have clearly been shown to be inadequate in meeting the needs of patients. Lack of attention to both primary and secondary prevention of pain results in escalation to higher-cost interventions which could have been avoidable if addressed early in the trajectory of care. A transformative approach grounded in stepped care that combines multiple supportive, educational, and evidence-based pain treatments through a multidisciplinary team approach is the key to successful pain prevention. While much research needs to be done in this area, we recommend IPC efforts to provide intervention early and often to the majority of patients who are either at risk for developing chronic pain or are experiencing the negative impact of pain already and are in need of biopsychosocial intervention.



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