

**Waking Up to the Insomnia Crisis:**  
***How Insomnia is Costing America More Than \$42  
Billion a Year and What We Can Do About It***

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## Executive Summary

Experts estimate up to 70 million Americans suffer from some form of insomnia<sup>i</sup>, a medical condition in which sufferers experience an inability to fall or stay asleep, and healthcare costs associated with insomnia total \$42 billion each year.<sup>ii</sup>

Despite the high prevalence and great cost of insomnia, most people are not aware of the basic facts about the condition:

- Chronic insomnia afflicts at least 10 percent of adults in industrialized countries, making it the most common of all sleep disorders.<sup>iii</sup>
- Fifty-four percent of U.S. adults say they experience at least one symptom of insomnia or difficulty falling asleep at least a few times a week.<sup>iv</sup>
- Almost thirty percent of women use some form of sleep medication a few times a week.<sup>v</sup>

Adding to public confusion is media coverage of experiences resulting from dramatic misuse of prescription sleep medications and a recent movement condemning prescription drug treatment of so-called “lifestyle” medical conditions. The consequences of untreated insomnia, however, are anything but frivolous:

- A 2006 study in the journal SLEEP found that people with insomnia miss an average 5.8 days of work a year, while non-sufferers only miss 2.4 days on average.<sup>vi</sup>
- Healthcare professionals-in-training, who work recurring 24-hour shifts with little sleep, have been found to make 36 percent more serious medical errors<sup>vii</sup> and five times as many serious diagnostic errors than those whose work is limited to 16 consecutive hours.<sup>viii</sup>
- A 2007 study in the journal SLEEP found insomnia costs employers about 4.4 days of wages per untreated individual over a six-month period – not including money spent on indirect costs, such as lost productivity and costs to treat the medical consequences of insomnia.<sup>ix</sup>

Unlike other, higher profile conditions, insomnia has not had the benefit of a widespread publicly-funded campaign to raise awareness – despite such efforts as the recent cross-specialty report from the Institute of Medicine on insomnia. As a result, “having trouble sleeping” is not naturally connected to “suffering from insomnia.” This disconnect puts insomnia sufferers at a disadvantage: they must be able to communicate their insomnia symptoms to a healthcare professional in order to receive a diagnosis and relief, yet, they may not understand that their symptoms are serious and necessitate reporting. This lack of communication impairs a healthcare professional’s ability to diagnose and treat insomnia as part of an overall program of disease prevention and wellness:

- In two surveys of general practice healthcare professionals, respondents stated they were unaware of severe insomnia in 60 to 64 percent of cases.<sup>x</sup>
- Many undiagnosed insomnia sufferers likely will describe feeling tired or fatigued, lacking energy, or just feeling “down” or “low,” rather than telling their healthcare professional that they are not sleeping.<sup>xi</sup>

This paper seeks to take another step toward ending public confusion about insomnia. We treat insomnia as it should be treated by healthcare professionals and the general public: as a serious medical condition that has significant health and economic implications. As such, we present an examination of the extent of the problem in the United States, evidence demonstrating the health and economic repercussions of unmanaged insomnia, a discussion of media coverage of insomnia, and an outcomes-based justification for employers and insurers to address insomnia immediately.

In order to break insomnia out of the “lifestyle condition” box in which it has been placed, we must be able to engage and educate patients, healthcare professionals, health insurers, and employers on different terms. Accomplishing this requires communicating the potential outcomes of unmanaged insomnia – serious illness, increased health costs, and lost productivity in the workforce.

Employers must understand how insomnia affects their workforce. Health insurers must understand the positive potential of value-based benefits schemes and co-payments. Healthcare professionals must understand that many patients may not have the understanding or vocabulary to describe the symptoms of insomnia. And patients must understand that prolonged periods of “trouble sleeping” may pose a serious health risk. For each audience, a new understanding of insomnia is imperative if we hope to successfully change attitudes and action. And, as we’ll demonstrate, every day without a change in course has consequence.

With an eye to changing that course we propose the following:

***Facing Insomnia in America: a Plan of Action for 2009***

- Assemble a coalition of mainstream media, social media, and an array of private, corporate, and government partners to raise public awareness of the serious impact insomnia has on public health and the American economy.
- Identify pathways for diagnosing and treating insomnia.
- Execute targeted outreach to patients and health care providers based on specific criteria that reflect the latest findings in genetics, clinical research and outcomes data. Patients need to be able to identify and communicate insomnia symptoms and health care providers must be primed to identify patient complaints that indicate insomnia as well as be well-versed in available solutions.
- Educate media, healthcare insurers, and employers about their roles in spreading awareness, improving care, and helping to move to a value-based treatment approach.
- Encourage health plans and employers to design wellness programs that integrate insomnia management.

## Insomnia in the United States

Fifty-four percent of U.S. adults say they experience at least one symptom of insomnia or difficulty falling asleep at least a few times a week<sup>xii</sup>, and 40 to 70 million Americans suffer from at least one type of insomnia.<sup>xiii</sup> It is important to note, however, that insomnia is not only classified as “having trouble falling asleep” – that condition is the sleep latency manifestation of insomnia, where it takes sufferers much longer to fall asleep once they decide to sleep. Another manifestation of insomnia is poor “sleep maintenance” where a person’s sleep is interrupted or they experience early awakenings.<sup>xiv</sup> Sleep maintenance is a serious, emerging concern for sleep scientists. In a recent study of more than 1,000 individuals from four Western nations, investigators found that the most widely reported insomnia problem was sleep maintenance.<sup>xv</sup>

Women may be more vulnerable to insomnia. Almost thirty percent of women, in general, report using some sort of sleep medication a few times a week, compared to one in four for the general population.<sup>xvi</sup>

In general, insomnia is divided into two categories, based on how long it lasts:

- *Acute insomnia* lasts between one night and a few weeks;
- *Chronic insomnia* occurs at least three nights per week for one month or more.<sup>xvii</sup>

### **Undiagnosed and Untreated**

The exact number of Americans suffering from insomnia is unknown, as many cases are undiagnosed or undertreated. Healthcare professionals are hardly to blame, as many insomnia sufferers don’t communicate their symptoms. Sufferers may not understand that insomnia is not just classified as having trouble falling asleep, but also staying asleep, having uninterrupted sleep, and not being subject to frequent awakening. Even so, in two surveys of general practice healthcare professionals, respondents stated they were unaware of severe insomnia in 60 to 64 percent of cases.<sup>xviii</sup> Patients must be educated about the various forms and diverse symptoms of insomnia so that they are better able to describe these to a healthcare professional.

The high percentage of patients who are unaware they suffer from insomnia makes clear the urgent need for health care professionals to be knowledgeable about insomnia, well versed in how it is identified, able to draw on the latest information on diagnosis, and familiar with both drug and non-drug treatment options. Healthcare professionals must be equipped to identify and treat the condition and the public must be better educated to recognize the symptoms and bring them to the attention of their doctors.

## **The Causes of Insomnia**

The lay public is not aware of the reasons for insomnia. Most cases of insomnia are present with another medical illness, mental disorder or sleep disorder, or associated with certain medications or substances. Only 25 percent of people suffering from insomnia are considered to have primary insomnia, which is defined as a difficulty falling asleep or maintaining sleep in the absence of coexisting conditions.<sup>xix</sup>

### **Lifestyle factors**

Many behaviors can create or worsen sleeping problems. For example, smoking and drinking caffeinated beverages interfere with sleep because both nicotine and caffeine are stimulants that promote wakefulness. Alcohol intake close to bedtime may also result in disruption of normal sleep patterns; and substance abuse is thought to contribute to 10 to 15 percent of the incidence of chronic insomnia.<sup>xx</sup> Other lifestyle factors that can contribute to poor sleep include erratic sleep schedules and physical activity too soon before bed. Shift workers can find it difficult to fall and stay asleep because they have to sleep during the day, when both environmental and internal indicators are counter to sleep.

### **Environmental factors**

Noise, such as that from passing traffic, airplanes or a neighbor's television, can disturb sleep. Too much light or a sleeping environment that is too hot or too cold also can interfere with sleep.

### **Anxiety**

Evidence of a relationship between anxiety and insomnia can be found in research that has connected persistently elevated stress hormones, especially cortisol, with sleeplessness. This is particularly true of the elderly or those with other psychiatric illnesses. Excess cortisol is connected with reduction in REM sleep but elevated cortisol was found, in one study, to be present only when patients slept poorly.<sup>xxi</sup> Therefore, low quality sleep may raise cortisol levels.

### **Medical factors**

Medical and psychological factors come into play as well. Restless leg syndrome is one common complaint, as it leads to interruption or discontinuity of sleep. Kidney disease, heart failure, asthma, and Parkinson's disease are some other health conditions that can impair sleep. Medical conditions that cause pain or discomfort (e.g. arthritis), also can make it difficult to sleep well. Medications to treat some of these problems have insomnia as a side effect, including antidepressants and beta-blockers.<sup>xxii</sup> Sleep apnea can also cause insomnia, as it may wake sufferers in the middle of sleep.

### **Psychological/psychiatric factors**

Healthcare professionals and scientists have only recently begun to understand the physiology of insomnia, particularly in those with long term, chronic insomnia.

## **Genetics**

Insomnia also has a significant genetic component. A 2006 study in the journal SLEEP looked at insomnia in 1,870 sets of both fraternal and identical twins and found that sleep disorder correlations between twins were 15 percent for fraternal and 47 percent for identical twins.<sup>xxiii</sup> It also found correlations of 14 percent in fraternal and 37 percent in identical twins for daytime sleepiness, implying that our sleep behavior, in general, is genetically linked, and determined that there were common genetic links between insomnia and sleepiness.<sup>xxiv</sup> Other research has determined that around 35 percent of those who suffer from insomnia have family members who suffer from it as well, most often their mothers.<sup>xxv</sup>

## **Immune factors**

Finally, immune factors or “cytokines” cycle differently in people with chronic insomnia than in those with normal sleep patterns; they are elevated during the day and reduced at night, when they are high in people without insomnia. But more research is needed to understand this relationship.<sup>xxvi</sup>

## **Negative Consequences and Costs of Insomnia**

Insomnia can seriously affect a person's health, work, and personal relationships. Lost sleep or sleeplessness can result in a reduced ability to concentrate, excessive daytime sleepiness, and irritability.

### **Impacting work performance**

While not all sleep loss is attributable to insomnia, insomnia can impair the ability to perform both physical and mental tasks and negatively impact work performance. Patients with chronic insomnia can have a higher frequency of work-related problems including absenteeism, an increased rate of accidents, difficulty performing duties and less job satisfaction. About 20 million Americans say the problems caused by their insomnia carry over into their daytime lives.<sup>xxvii</sup> According to the National Sleep Foundation's (NSF) 2008 "Sleep in America" poll, more than 28 percent of those polled reported that daytime sleepiness interferes with their daily activities at least a few days each month.<sup>xxviii</sup> A 2007 article by Dr. Ronald Ozminkowski in the journal *SLEEP* found insomnia costs employers about 4.4 days of wages per untreated individual over a six-month period – not including money spent on indirect costs, such as lost productivity and costs to treat the medical consequences of insomnia.<sup>xxix</sup>

A 2006 study in the journal *SLEEP* reported that workers with insomnia miss an average of 5.8 days of work a year, compared to only 2.4 days missed by non-sufferers.<sup>xxx</sup> For some professions, these "work errors" can be significant. A *New England Journal of Medicine* study found that healthcare professionals-in-training, who work recurring 24-hour shifts with little sleep, have been found to make 36 percent more serious medical errors<sup>xxxi</sup> and five times as many serious diagnostic errors than those whose work is limited to 16 consecutive hours.<sup>xxxii</sup>

### **A drain on the healthcare system**

Increasingly employers and health plans are taking note of the need to address insomnia. As a recent article in "Managed Care" reported:

Insomnia is associated with high health care utilization. Sufferers have more ongoing medical problems. The condition is associated with a two-fold increase in hospitalizations and physician visits. It is also a risk factor for psychiatric disorders, such as depression, across all demographic groups and is a significant symptom and causal agent for a range of major and comparatively minor medical problems, including obesity and falls.<sup>xxxiii</sup>

The National Sleep Foundation also found that direct annual costs of insomnia, including dollars spent on insomnia treatment, healthcare services, hospital and nursing home care, are estimated at nearly \$14 billion. Indirect costs of insomnia are estimated at nearly \$28 billion per year.<sup>xxxiv</sup>

Furthermore, insomnia can hurt a patient's health, particularly if patients do not seek treatment and continue to sleep poorly.<sup>xxxv</sup> Such failure to manage insomnia has a direct impact on the cost of healthcare overall. The University of Michigan study also found that the per-member, per-year cost for insured patients with chronic insomnia is \$2,800. According to JestaRx, (a pharmaceutical marketing firm) prescription drug costs for patients with insomnia are \$1,220, which is three times as much as those without insomnia.<sup>xxxvi</sup>

## **Effect on loved ones**

Sleep loss may also have an impact on personal relationships. A 2005 poll by the National Sleep Foundation, “Sleep in America,” found more than 33 percent of partnered adults reported that their partner’s sleep issues created tensions in the relationship, and 25 percent of them admitted that their sexual relationship was impacted by their own or their partner’s sleepiness.<sup>xxxvii</sup>

## **A Guide to Insomnia Treatments**

Healthcare professionals should make inquiries about patients' sleep habits and problems part of the protocol of a standard office visit or yearly work-up. They should also understand that patients with insomnia may not convey their sleep problems in an obvious manner; rather, they are "likely to complain of feeling tired or fatigued, lacking energy, or just feeling 'down' or 'low' rather than clearly stating that they are sleep deprived."<sup>xxxviii</sup> There are many components to identifying and treating insomnia. And each treatment carries different risks and benefits.

### **Lifestyle changes**

A healthcare professional can evaluate general health for underlying conditions or behaviors that may be at the root of sleeplessness.

There are many factors that the patient can control that may facilitate sleep. Since many behaviors can create or worsen sleeping problems, identifying and avoiding them can make a substantial difference.

#### *Avoid stimulants*

For example, cigarettes, alcohol and caffeinated beverages are stimulants and either should be avoided altogether or should be used only when there is sufficient time for them to exit the system before it is time to sleep.

Because it is activating, physical activity should likewise take place at least several hours before bedtime to avoid disruption of sleep patterns. Sleep environments can, in most cases, be optimized by controlling the temperature and amount of light.

#### *Normalize the sleep schedule*

In addition, erratic sleep schedules should be normalized if possible, setting and adhering to a set bed time even during weekends and holidays. For those who cannot, such as shift workers who must sleep during the day when their bodies are programmed to be awake, the use of high intensity lights can be useful in resetting their internal clock and allowing them to sleep at the time they need to.

### **Treat comorbid disorders**

Since comorbid medical conditions, including kidney disease, heart failure, asthma and Parkinson's disease can impair sleep, they should be properly treated. The same is true of conditions that are associated with pain or discomfort (e.g. arthritis).

### **Prescription sleep medications**

There are prescription treatment options available. Some medicines may be more effective in helping patients fall asleep initially, whereas others may be better to prevent patients from waking up frequently during the night. In determining which sleep medicines may be most appropriate, a healthcare provider should take into account such factors as a patient's medical history, insomnia symptoms, other medications the patient is taking, and the way the medicine works in the body.

Depression has been widely thought to have insomnia as one of its symptoms, with around 90 percent of people with depression experiencing insomnia at some level.<sup>xxxi</sup> However, some anti-anxiety and/or antidepressant medicines themselves, *i.e.* activating SSRIs, can cause insomnia in some patients and so patients on these drugs may be given a sleeping pill along with their regular medication. Healthcare professionals should caution patients about the possible adverse effects of combining a sleep aid with other centrally acting drugs. Overdose is more common in this group of patients, and they should be closely monitored.

### **Over-the-counter sleep medications**

Nonprescription sleep medicines can also be effective in helping patients sleep but some over-the-counter (OTC) treatments contain extra medicines, such as pain relievers and antihistamines, neither of which were originally created for sleep. Most OTC sleep aids are also only intended for short-term use.

It is important to check the ingredients label of any OTC medication — including those sleep aids designated as “nighttime” or “P.M.” formulas — to see if it contains antihistamines. Common OTC antihistamines are doxycyclamine and diphenhydramine hydrochloride. OTC sleep medications can interact with other medicines patients may be taking, so patients should consult a healthcare provider or pharmacist before using one of these sleep aids.

### **Other treatments**

#### *Melatonin*

Melatonin, found in some OTC sleep preparations, is a hormone that is associated with regulating circadian rhythms. There has been some evidence behind its ability to manage chronic insomnia in certain subgroups that have low melatonin levels, and there is no evidence that melatonin poses a risk of harm. However, more research is required in this area, given that the results are based on a small number of studies. Patients should be aware that melatonin is a supplement so it is not regulated by the FDA the way prescription drugs are.

#### *Herbal sleep aids*

Herbal remedies for sleep problems include chamomile, valerian root, hops, lavender, and passionflower. Dietary supplements and herbal remedies are not clinically tested and approved by the Food and Drug Administration, as are standard medicines. Before trying one of these alternative sleep aids, patients should consult a healthcare professional.

#### *Cognitive behavioral therapy*

Cognitive behavioral therapy (CBT) combines a number of different strategies to changing patients’ attitudes towards sleep, which may be what are really keeping them up at night. Often insomnia is the result of a self-defeating pattern in which sufferers are so caught up in the idea they will not sleep that it turns into a self-fulfilling prophesy.<sup>x1</sup> CBT helps them to get rid of such negative thoughts and to see that even if they do not sleep, or sleep only a couple of hours, it is not the end of the world. This type of treatment may also include helping patients to develop good “sleep hygiene,” which can include keeping the bed only for sleep and sex, making sure they get enough light during the day, avoiding TV before bed, and not lying in bed when

insomnia strikes but instead getting up for a little while.<sup>xli</sup> Relaxation techniques might also form part of the program.<sup>xlii</sup>

## Media Coverage of Insomnia

For the most part, the media covers prescription sleep medications without giving audiences a full understanding of the condition those medications are designed to treat. Such coverage has been one of the larger wedges driven between the public's understanding of their own sleeping habits and how that relates to insomnia. This type of reporting on sleep medications fails to address the serious health and societal consequences of insomnia. In instances where a prescription sleep medication has actually been abused or misused, it is important that the opportunity be used to tackle the important roles and responsibilities of manufacturers, patients and healthcare professionals.

For example, the April 2008 issue of *Glamour Magazine* included an article by Laurie Sandell, "Diary of a Sleeping Pill Junkie," detailing the writer's addiction to prescription sleep medication. In the article, and in a subsequent interview on *The Today Show*, Sandell admits,

I started abusing [sleeping medications] almost immediately: I ignored the prolific warnings on the package, called multiple doctors to get it, mixed it with alcohol and took more than the prescribed amount. The makers of this drug never intended it to be used in any of those ways.<sup>xliii</sup>

This kind of reporting missed the opportunity to educate patients about insomnia and available treatments. It is an education that the public sorely needs.

As a partner in this vital educational effort, media can play a helpful role in spreading awareness of a disease so many millions of Americans face – thwarting some of the confusion and fear that prevents many insomnia sufferers to avoid treating their condition.

## **Appropriate and Effective Use of Prescription Sleep Medications**

Drug manufacturers, healthcare professionals and patients each play a critical role in assuring a sleep medication is used safely and appropriately.

### **Patients' role: Gain control and take responsibility**

Patients can help reduce the chance of serious adverse effects from sleep aids and make sure they are getting the most out of the medication by following directions precisely – both for insomnia medications and for any other prescriptions they might have. This means following their instructions about how to take, when to take, and how long to take sleep medicine, and not changing dosages or duration of treatment. Many reported problems come from patients who do not follow healthcare professionals' instructions.

#### *Disclose medical history*

Patients should be sure to inform their healthcare professional about any medicines they may be taking, including herbal supplements and medicines they may buy without a prescription. These may interact with each other, sometimes causing side effects.

In addition, patients should also be cautioned about the possible combined effects with other central nervous system depressant drugs. Dosage adjustments may be necessary in some combinations because of the potentially addictive effects.

#### *Disclose alcohol/drug use*

Alcohol should never be used while taking any medication, including sleep medications. Using alcohol with insomnia medications is dangerous, as the alcohol intensifies the effects of both drugs.<sup>xliv</sup>

#### *Exercise common sense and be responsible*

Patients shouldn't take a prescription sleep aid unless they're able to get a full night's sleep (at least 7 to 8 hours). Until patients know how sleep medications will affect them, they shouldn't drive or operate machinery. Finally, as in any good healthcare professional-patient relationship, patients should feel free to communicate with their healthcare professional about any problems or concerns they have. Adverse effects, sleep-walking, or allergic reactions should be reported to a healthcare professional immediately.

### **Healthcare professional role: Due diligence and communication**

#### *Identify underlying disorder*

Most cases of insomnia are linked to other conditions, either physical, such as a gastrointestinal illness, or psychological, such as depression. Therefore, the treatment of insomnia should only begin after a careful medical examination of the patient.

#### *Capturing relevant medical history*

Does the patient have a history of sleep disorders? Sleeping disorders, also known as "parasomnias," include a wide range of behaviors from sleepwalking to sleep-related eating disorder (SRED). Medical researchers believe parasomnias occur when the transition between

wakefulness and two sleep-states (NREM and REM) become blurred.<sup>xlv</sup> Some of these behaviors, such as sleepwalking, are far more common than generally acknowledged.

Although sleepwalking may occur during treatment with a prescription sleep medication, it may not necessarily be caused by it. Sleepwalking has a natural lifetime occurrence of 2.5 percent of adults.<sup>xlvi</sup>

Is the patient taking other medications or supplements? It is important for the public to know that one of the most essential safeguards in taking any sleeping aid is not to use it inappropriately with other medications, or to take it with alcohol, illegal drugs, or supplements. Healthcare professionals should ask patients about any medicines they are taking, including over-the-counter products.

Many patients who take anti-anxiety and/or antidepressant medicines often have trouble sleeping, and thus may additionally be prescribed a sleep aid. Healthcare professionals should caution patients about the possible adverse effects of combining a sleep aid with other centrally acting drugs. Overdose is more common in this group of patients, and they should be closely monitored.

Does the patient have a history of drug or alcohol abuse? Studies show that individuals who abuse drugs and alcohol may be more likely to abuse and/or take excessive doses of prescription sleeping aids.<sup>xlvii</sup> Healthcare professionals have a responsibility to raise the issue of alcohol or drug use with their patients before they make a decision to prescribe a sleep medication.

### ***Communicate the risks***

Common Side Effects: All medicines have side effects so patients should discuss possible side effects with their doctor. And, patients wanting to stop treatment should consult with a healthcare professional before doing so.

Dependence: When patients develop dependence, they may have difficulty stopping the sleep medicine. If the medicine is suddenly stopped, the body is not able to function normally and unpleasant withdrawal symptoms may occur. Patients may find that they have to keep taking the medicines either at the prescribed dose or at increasing doses just to avoid withdrawal symptoms.

All patients taking sleep medicines have some risk of becoming dependent on the medicine. But patients who have been dependent on alcohol or other drugs in the past may have a higher chance of becoming addicted to sleep medicines.

Patients should be advised that they speak with their healthcare provider before taking sleeping medications at a dose other than the one that was prescribed, longer than the period prescribed, or in combination with alcohol or other sleep aids (OTC, Rx, or alternative/herbal therapies).

### **Manufacturer's Role: Ensuring Safety, Educating Patients and Providers**

Drug manufacturers also have an important role to play in ensuring their medications are safe and effective. Their responsibility, first and foremost, is to ensure their products are safe. They must also continually provide healthcare professionals and patients the information they need to

prescribe and use sleep aids appropriately. Manufacturers should provide a simple-to-understand, patient-friendly, medication guide for sleep medications that includes the necessary product and safety information for patients.

Manufacturers should also continually monitor for adverse events and instances of misuse and report them to the appropriate regulatory authorities. By keeping the communication channels open with healthcare professionals and patients, manufacturers are able to reinforce safe use of all products including sleep medications.

## Communicating Insomnia Outcomes to Insurers and Employers

Encouraging health insurers and employers to ensure adequate diagnosis and treatment of insomnia only requires a “carrot” approach. They’re already getting the “stick” in the form of growing healthcare claims and reduced employee productivity. For those interested in raising awareness of insomnia and convincing healthcare professionals, insurers, employers, and patients of the benefits of treating the condition there are plenty of data to support the cause.

The current approach to controlling healthcare costs is to either increase co-payments of brand drugs or put less favored drugs in higher tiers of prescription drug formularies. The effect of such cost-shifting is to reduce compliance. Several studies, starting with the seminal work of Susan Horn have shown that restrictive formularies, including drug formularies that limit or direct access based on the amount of the co-pay, also have a negative effect on health outcomes.<sup>xlviii</sup>

This inverse relationship between cost and compliance is well documented by researchers, but frequently disregarded by plan sponsors, health plans, and healthcare professionals. "Health plan executives remain skeptical on this issue," says A. Mark Fendrick, MD, a professor of internal medicine and health policy at the University of Michigan who has studied drug cost and compliance for nearly a decade. "They say things like 'The patient doesn't really need the drug' or 'Patients are shifting to less expensive over-the-counter drugs,' or 'Patients are getting their drugs directly from the doctors.'"<sup>xlix</sup>

Rather than determining access to medications based on the availability of OTC treatments or the health insurer’s up-front costs, stakeholders should begin evaluating treatments for conditions such as diabetes, asthma, depression, and insomnia based on the possible *outcomes* for an *unmanaged* case. The secondary effects of insomnia – such as cardiovascular trouble and other serious medical conditions –are far more costly to treat in the long-term than the insurer’s initial cost of a sleep medicine or other treatment.

As Michael Chernew, a professor of healthcare policy at Harvard Medical School, points out:

[I]t is possible to reduce the adverse consequences of cost sharing by adopting the principles of value-based insurance design (VBID), which argues that co-payments or cost sharing more generally should be kept low for high-value healthcare services....As clinical research advances, more sophisticated cost-sharing strategies such as VBID are possible. These approaches provide more generous coverage for high-value services, in some cases only when these services are used by patients for whom they provide high value.<sup>1</sup>

Treatments for insomnia should qualify as “high-value services” in the eyes of employers and insurers, as the following figures demonstrate:

Figure 1: Top Ten Most Prevalent and Treated Health Conditions Among Companies Surveyed<sup>h</sup>

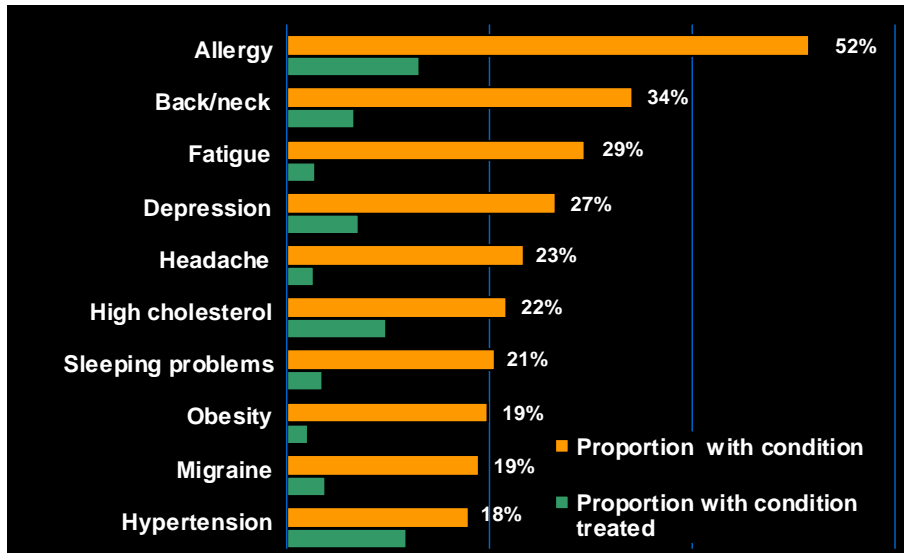
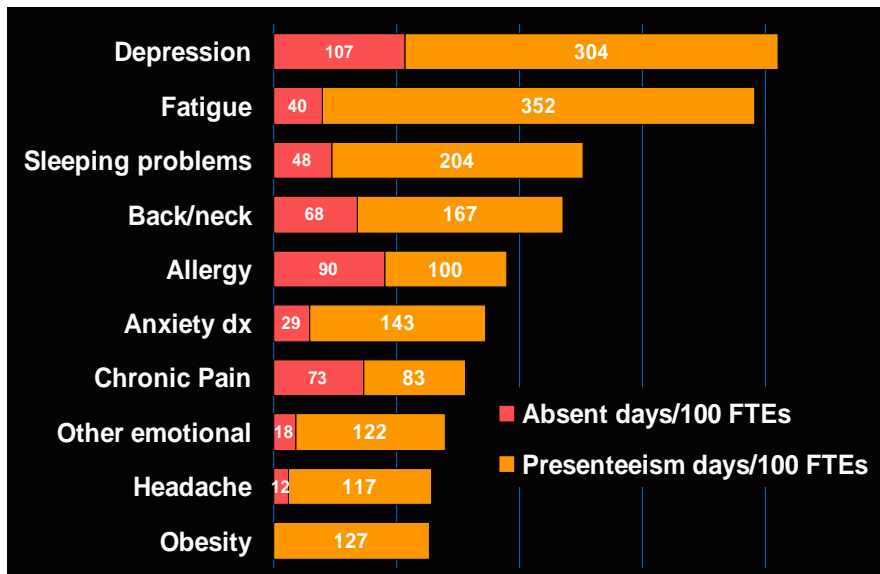


Figure 2: Top Ten Causes for “Lost Days” Among Companies Surveyed<sup>lii</sup>



Source: Integrated Benefits Institute

Note that sleeping problems are the third most significant contributor to absenteeism – employees who miss work – and presenteeism – employees who are at work, but work less productively – among the companies surveyed. A third of the employees of the companies surveyed had sleeping problems and only a small fraction had the condition treated. If these employees aren’t granted access to affordable treatment, their employers suffer from lost productivity and higher healthcare premiums, and health insurers will suffer from increased claims.

The solution? Previous studies have shown reducing drug co-pays for chronic illnesses such as depression, diabetes, and asthma have led to improvement both in health and worker productivity.<sup>liii</sup> The Pitney Bowes Corporation shifted from a traditional drug benefit with three

tiers and increasingly higher co-pays (regardless of disease or impact on outcomes) to a value driven approach that dropped co-pays to ten percent for all drugs treating hypertension, diabetes, and asthma.<sup>liv</sup> As a result (after three years and despite the lower co-pays and higher employer cost per script) Pitney Bowes found that for diabetes sufferers:

- Medication adherence rates increased significantly,<sup>lv</sup>
- Average total drug costs decreased by 7 percent,<sup>lvi</sup>
- Emergency room visits declined,<sup>lvii</sup>
- Direct health care costs per plan participant for diabetes declined by 6 percent,<sup>lviii</sup>
- And, the number employees claiming short-term disability in the diabetes program dropped by about 50 percent.<sup>lix</sup>

Research has shown that, when treated, people suffering from chronic insomnia experience significant improvements in two key parameters of work performance – output and time management.

How then can treatment of insomnia be addressed to reduce its incidence and increase productivity?

- Differentiate the employee cost based on the use and reimbursement of an integrated insomnia management program rather than a piecemeal approach.
- Reduce the out-of-pocket costs for medications used as part of the outcomes based program.
- Ensure value to the employer for covering insomnia treatment by focusing on the prospect for better outcomes, fewer risks, lower costs, and less time off.
- Provide an economic incentive for employees who achieve sleep outcome goals and fully participate in prescribed after care requirements.
- Clearly measure individual outcomes.

### **Conclusion**

Ultimately, the benefits of treating insomnia far outweigh the risks.

The goal, however, is not just to diagnose or treat insomnia, but to improve sleep over the long term. Improving sleep improves health, work productivity, and reduces health care costs. If implemented, the Plan of Action outlined in the executive summary would be a big step in improving sleep of Americans. Sleep is something we cannot afford to ignore.

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