

The Art of Health Promotion

practical information to make programs more effective



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Presenteeism and its Role in Worksite Health Promotion

Larry S. Chapman, MPH

Setting the Stage

We all know that personal productivity at work is shaped by many factors. Sickness and the symptoms of illness are just a few of the factors. Worksite health promotion programs typically address a host of health and behavioral issues that affect illness and the accompanying symptoms. Sickness (or the absence of good health) was first identified as a significant factor in the economic livelihood of mankind by Pliny, the Elder (Caius Plinius Secundus: 23AD to 79AD) in ancient Rome. While in the last two hundred years, Adam Smith in his seminal work, the *Wealth of Nations* mentioned that workers are less likely to be productive when they . . . “are frequently sick than when they are generally in good health. . . (Sickness) cannot fail to diminish the produce of their industry.”¹ Modern times have clarified the importance and the truth of these early observations. As a result, our focus in this edition of *The Art of Health Promotion* is on what is now referred to as “presenteeism”: a relatively newly coined term that is intended to help us conceptualize, measure and remedy health-related productivity loss for the individuals who shows up at work.

The topics we will be addressing are:

- ✓ What exactly is “presenteeism”?
- ✓ Where does it fit in the “big picture”?
- ✓ Why should we be concerned about it?
- ✓ What is the potential role of “presenteeism” in worksite health promotion?
- ✓ How is “presenteeism” being measured?
- ✓ What can you do to improve “presenteeism” through your worksite health promotion program?
- ✓ Dealing with presenteeism: the future tense?
- ✓ Concluding points

What Exactly Is “Presenteeism”?

As with all new endeavors, no single authoritative definition of “presenteeism” is in common use. Presenteeism is generally defined in one of two ways. In the early 1990’s, a University of Manchester (UK) professor of Organiza-

tional Psychology by the name of Cary Cooper coined the term “presenteeism” to reflect the growing propensity for workers to spend more time at work when their continued employment or jobs were in jeopardy. Perhaps this particular slant on “presenteeism” may be partially influenced by the more labor-oriented or socialist undercurrents that characterize the economy and work environment of the United Kingdom. The suggested solution here seems to be to send the person with symptoms or minor illness home to avoid more illness in the future. One of the major remedial strategies by adherents to this view of presenteeism is to make sure that workers take breaks, go home on time and take vacations. This probably makes sense, but should not prevent a more aggressive approach to the underlying phenomenon of preventing or eliminating the adverse productivity effects of health conditions in those who chose to go to work.

In the second case, a decidedly American version of “presenteeism” seeks to proactively prevent or treat health-related problems that adversely affect the work productivity of those who are at work. Here perhaps the more robust expression of capitalism characterized by the US economy (for better or worse) may have influenced our view of whether we want “sick” people to go home or whether we want to try to eliminate or reduce the incidence or-



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Figure 1

Presenteeism: “The measurable extent to which health symptoms, conditions and diseases adversely affect the work productivity of individuals who choose to remain at work.”

severity of “sickness” in workers who we actually want to remain at work. The American view on “presenteeism” seems to emphasize prevention and amelioration of symptoms and illness while also striving to reduce the severity of the adverse effects on work productivity.²

The definition of “presenteeism” used here is patterned after that used by the American College of Occupational and Environmental Medicine and can be found in Figure 1.³

The implications of this definition are as follows:

An emphasis on the measurable nature of presenteeism: In other words, what can not be measured is not considered worthy of attention within the context of this particular definition of presenteeism. The importance of measurability also underscores the necessary reliance on

valid and reliable measurement methods and approaches.

A defining focus on health symptoms, conditions and diseases: The health emphasis within this definition constrains presenteeism to measurement and/or intervention that addresses the physical and mental aspects of the health of individual workers. This focus on presenteeism, by implication, does not include anything outside individual health even if it may improve work productivity. Also the scope of concern under this definition includes symptoms with or without an accompanying disease, conditions with or without a formal diagnosis of a disease or any combination. This definition also implies that the individual may have one or more of each in any combination which may create an even higher level of priority for intervention than a single symptom such as depression.

An underlying assumption that people will always come to work when they have symptoms, diseases or conditions: An implication of this approach to the definition of presenteeism is that individual workers will always show up for work in less than “perfect” health and the major strategy should not be simply to send them home, but rather to help minimize their incidence and severity in adversely affecting work productivity.

A reliance on preventive (first) and palliative (second) strategies: When the individual is at work and not fully functioning due to a health condition (i.e., symptoms, conditions or diseases), then the initial strategy should be to reduce the adverse effects on work productivity by dealing primarily with reducing the severity of the symptoms. But a more proactive approach would first focus interventions on reducing the future prevalence of that specific health condition, particularly if it was prev-

alent and severe in its productivity loss effects.

A recognition that presenteeism can be observed or measured without requiring interventions to improve it: This perspective on the definition implies that we can observe or measure a specific level of “presenteeism” without having to engage in remedial or mitigating activity. Not that this is a particularly wise course of action, but it does acknowledge that we can observe and measure without a concomitant duty to intervene. If the measurement of presenteeism of a particular work force indicates a relatively small drain on work productivity then further intervention may not be warranted when compared with other health needs of the population.

It should also be recognized that the core purpose of worksite health promotion by definition always includes bringing about improvements in an individual’s personal health status. At the same time, a possible element of the broader definition of health status usually includes measuring the number and severity of health conditions and reducing their incidence over time. Therefore, presenteeism is an area of potential measurement in worksite health promotion as well as an area where intentional health improvements may be sought.

Where Does It Fit In the “Big Picture”?

If as a reader, you find yourself agreeing with the perspective on “presenteeism” expressed above, the next logical question is . . . where then does “presenteeism” fit in the big picture of worksite health? In order to answer that question Figure 2 contains a framework introduced in an earlier edition of *The Art of Health Promotion*.⁴ This framework is also presented and utilized in a

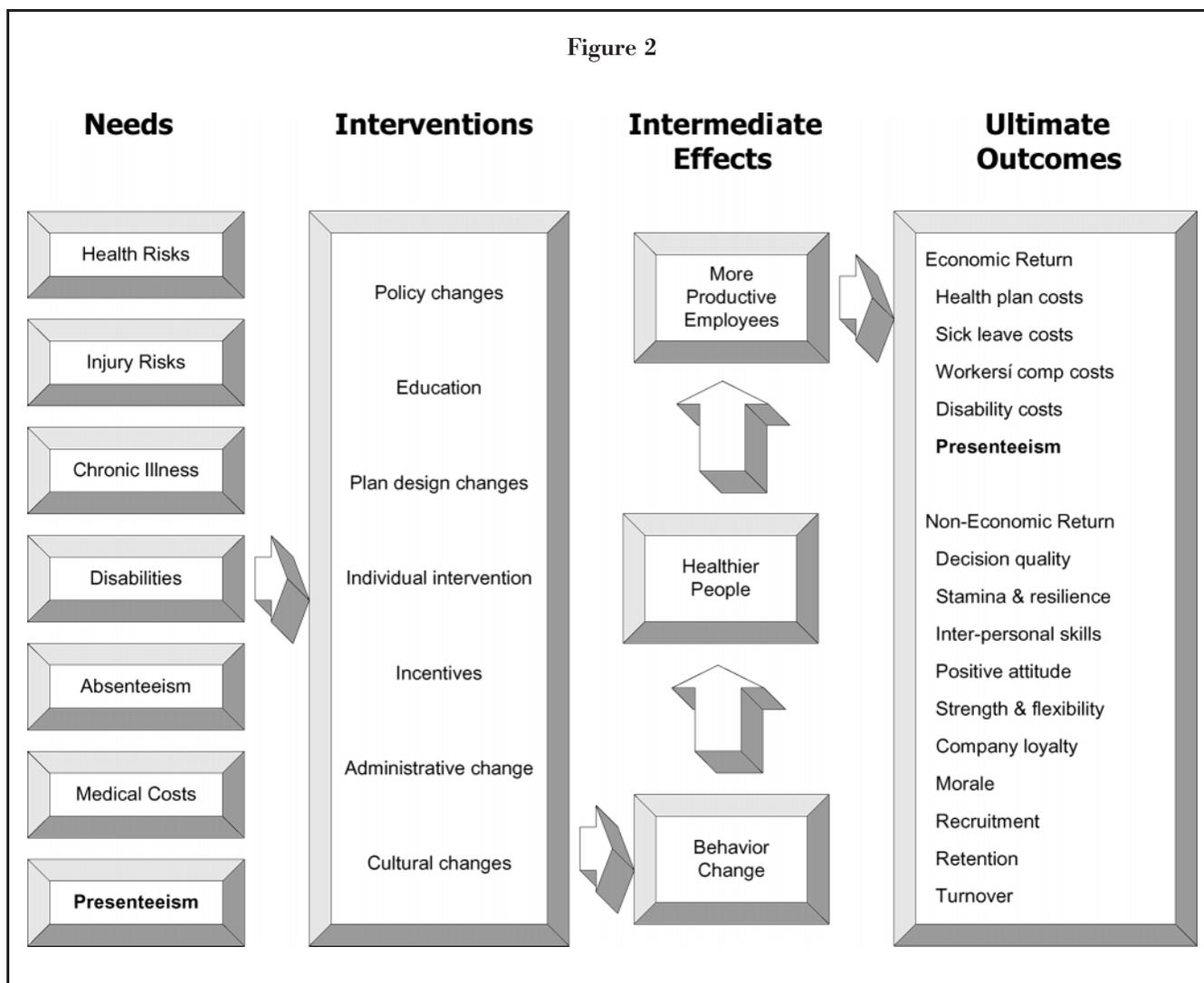


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For information on submission of articles for *The Art of Health Promotion*, please contact the editor at 206-364-3448.

Figure 2



new publication from the Institute for Health and Productivity Management (IHPM) called the *Platinum Book: Practical Applications of the Health & Productivity Management Model*.⁵

This figure contains a framework for considering the role of presenteeism in worksite health promotion. The framework first identifies “presenteeism” as one of the types of needs that a program can address. In that context, the measurement of presenteeism must be carried out to help formulate priorities for intervention.

In this framework “presenteeism” shows up as a “need” that can be measured and targeted through interventions as well as a way of estimating the “ultimate outcome” of economic return associated with a Worksite Health Promotion program

or Health and Productivity Management initiative. Therefore in a “big picture” sense, presenteeism should be measured in order to be managed and re-measured in order to document the improvement associated with interventions and changes in “intermediate effects.”

Why Should We Be Concerned About It?

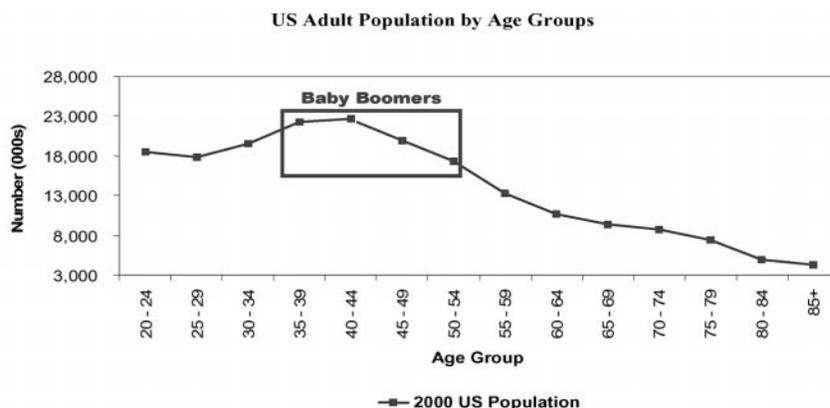
The term “presenteeism” is beginning to appear more frequently in the business press. For example, the October, 2004 issue of the *Harvard Business Review* contained one of the first articles dedicated entirely to the topic.⁶ In addition, a recent study of ten common health conditions found that presenteeism-related costs were greater than direct health costs

in most cases and accounted for 18% to 60% of all costs for each of the ten conditions.⁷ This represents a significant economic burden to the employer community.

There are a number of additional issues that are likely to be driving an increased interest in “presenteeism”:

1. **Increased aging in the U.S. work force:** With the progression of the “Baby Boom” demographic phenomenon through our work force, the average age of most work force populations is increasing. Figure 3 below graphically illustrates this phenomenon. As this dynamic continues, the higher prevalence of chronic diseases and symptoms such as allergies, reflux disease, sleep disorders, depression, anxiety, indigestion, musculo-skeletal pain or limitation and substance abuse

Figure 3



Data Source: US Census Bureau State Population Projections: Baby Boomers Year of Birth 1946 to 1964

after-effects, are likely to take a larger and larger “bite” out of at-work productivity, as well as possibly increase the levels of sick leave absenteeism. As more people experience the symptoms, there will likely be more productivity loss due.

2. **Greater awareness of the problem of productivity loss:** More organizations and employers are becoming aware of this particular type of productivity loss and are recognizing that the magnitude of this loss can have significant economic implications for their organization. As this occurs, its natural that more organizations will follow suit and begin measuring and attempting to reduce the productivity “drain” associated with

presenteeism. A portion of this increased awareness can also be due to the increased mention of the symptoms, diseases and conditions that affect the aging population through direct-to-consumer pharmaceutical advertising, increased self-help articles and as a byproduct of increased general health awareness.

3. **Improvements in the measurement methodology for “presenteeism”:** Beginning in the mid-nineties a handful of U.S. corporations such as Bank One, International Truck and Engine, Lockheed Martin, Comerica, Medstat and Union Pacific began efforts to develop valid methods for the measurement of presenteeism. These efforts have resulted in a

large number of peer review articles that report on the validity and reliability of a number of measurement instruments.

4. **Increased pharmaceutical industry interest and support:** Another reason for increased interest in presenteeism is associated with the interest and support of pharmaceutical companies that have specific drugs that affect the conditions that are frequently associated with lost productivity at work. For example, the use of Sedating Antihistamines and Non-Sedating Antihistamines for treatment of allergies at work³ or the use of MAOI (Monoamine oxidase inhibitors) or SRRI (Selective Serotonin Reuptake Inhibitors) or TCA (Tricyclic Antidepressants) in the treatment of depressive episodes are specific examples of the significant stake of the pharmaceutical industry (Pharma) in the identification of those whose presenteeism may be treated by pharmacological intervention.⁹ This has also led to a number of Pharma sponsored studies in corporate populations to measure presenteeism and to evaluate drug treatment efficacy.
5. **Growing competitive pressures in many market sectors:** As the US economy begins to heat up it brings with it an increasing sense of competitive pressures. These competitive pressures place a premium on reducing employer costs

Table 1

Condition	Rank	Total Cost Using Average Presenteeism Estimate Per Employee Per Year	Percent of Total Expenditures Due to Presenteeism
Hypertension	1	\$392.31	9%
Heart disease	2	\$368.34	0%
Depression/sadness/mental illness	3	\$348.04	27%
Arthritis	4	\$326.88	35%
Allergies	5	\$271.04	55%
Diabetes	6	\$256.91	16%
Migraine/headache	7	\$213.78	49%
Any cancer	8	\$144.01	6%
Respiratory infections	9	\$133.84	3%
Asthma	10	\$99.55	35%

Table 2
Selected Survey Instruments for Measurement of Presenteeism

Number	Name of Survey Instrument	Question Sets	Comments
1	American Productivity Audit (APA)	46 questions via phone survey with some variability	Measures absenteeism and presenteeism
2	Angina-Related Limitations at Work Questionnaire (ALWQ)	17 item questionnaire using Likert scale	Captures absenteeism and presenteeism
3	Endicott Work Productivity Scale (EWPS)	25 item self-scored questionnaire	Captures absenteeism and presenteeism
4*	Health and Labor Questionnaire (HLQ)	7 presenteeism questions plus 3 additional domains	Measures absenteeism, presenteeism, unpaid production and work impediments
5	Health and Work Questionnaire (HWQ)	27 questions in 6 sub-scales	Measures absenteeism, presenteeism and work performance
6*	Health and Work Performance Questionnaire (WHO)	88 questions	Captures absenteeism and presenteeism and critical event information
7*	Migraine Work and Productivity Loss Questionnaire (MWPLQ)	23 questions	Captures absenteeism and presenteeism
8*	Osterhaus Technique (OT)	12 questions	Captures absenteeism and presenteeism
9	Standard Presenteeism Scale (SPS)	6 questions using a Likert scale	Captures presenteeism
10	Unnamed Hepatitis Instrument (UHI)	3 questions	Captures absenteeism and presenteeism
11	Work Limitations Questionnaire (WLQ)	25 questions	Captures presenteeism
12*	Work Productivity and Activity Impairment Questionnaire (WPAIQ)	6 questions	Captures absenteeism and presenteeism
13*	Work Productivity Short Inventory (WPSI)	66 questions at maximum	Captures absenteeism and presenteeism and care giver demands
14*	Worker Productivity Index (WPI)	Directly measures computer activity of customer service staff	Captures absenteeism and presenteeism

Note: The asterisk next to the number of the survey instrument in the first column indicates that the information collected can be used in making econometric projections or lend themselves to the capture of metrics suitable for direct translation into a monetary figure.

and increasing worker productivity. At the same time, the continuing globalization of business and the movement for free trade also acts to bring a focus on reducing cost and increasing worker output. These pressures correspondingly increase the interest in affecting the productivity drains associated with presenteeism.

6. **Logical out-growth of worksite health promotion programming:** As worksite health promotion (WHP) programs mature and continue to evaluate their health impacts and economic return it becomes more likely that presenteeism will be measured and intentionally targeted. As WHP programs become more sophisticated they are likely to be addressing many of

the health issues associated with presenteeism. A recent study of the ten most costly and prevalent health conditions associated with presenteeism losses are identified in **Table 1**.

This study was based on 374,799 individuals in the Medstat MarketScan Health and Productivity Management database and provides insights into the highest average annual cost of presenteeism for all employees (not just the individuals who have the conditions). These insights can then be used to help determine priorities for presenteeism-related interventions.¹⁰

In summary, there are a number of reasons that should make presenteeism-related productivity losses of concern to most work organizations

in the coming decades. This type of productivity loss has likely been intuitively known since man began working, but the more recent ability to measure and affect these health conditions makes them of increased concern and importance to all organizations.

What Is the Potential Role of “Presenteeism” in Worksite Health Promotion?

There are several potential roles that presenteeism can play in Worksite

Health Promotion. Some of these possible roles include:

- ✓ As a measurement point in assessing the needs of an employee population.
- ✓ As a consideration in setting programming priorities.
- ✓ As a consideration in the design of specific program interventions.
- ✓ As an economic rationale for supporting initial or expanded programming efforts.
- ✓ As an evaluation point for assessing the health effects and economic return associated with programming.
- ✓ As a reference point in bringing about improved integration among the various efforts to improve the health of a working population.
- ✓ As a reference point for increasing the comprehensiveness of present programming efforts.

Any or all of these potential roles may come into play within any given organization.

How Is “Presenteeism” Being Measured?

As mentioned earlier, there has been a flurry of activity in the last decade to develop a practical method for measuring the losses associated with presenteeism and to create a valid econometric tool to monitor and evaluate efforts to mitigate these financial losses. Virtually all these methods utilize personal interviews or self-reported survey results with employees. Interview and survey questions have undergone formal validity and reliability testing and have been reported in the peer review literature.^{11,12} Concomitantly, there are a large number of work productivity loss instruments that have been reported in the literature.¹³ Table 2 identifies some of the more prominent instruments.

The likely next step will involve the refinement of the question sets used in these instruments into some commonly accepted questions that can be used in a variety of ways within Worksite Health Promotion and Health and Productivity Management efforts.

Table 3
Selected Conditions Associated with Presenteeism

Anxiety	Low energy
Arthritis	Migraine headaches
Bladder problems	Muscle soreness
Chills	Nausea
Chronic back pain	Nervousness
Chronic fatigue	Obesity
Chronic neck pain	Osteoporosis
Chronic obstructive pulmonary disease	Other cancer
Congestive heart failure	Other chronic pain
Constipation	Panic attack
Coronary heart disease	Psoriasis
Cough	Reflux disease
Depression	Restless
Diabetes	Rheumatism
Diarrhea	Runny nose
Fever	Seasonal allergies
Fibromyalgia	Skin cancer
Hay fever	Sleep disorders
Heartburn	Sore throat
High blood pressure	Stomach ulcer
High cholesterol	Substance abuse
Hopelessness	Tension headaches
Hypertension	Urinary problems
Indigestion	Vertigo
Irritable bowel syndrome	Watery eyes

Some of the specific health symptoms, conditions and diseases that are the usual focus of presenteeism measurement activity are identified in Table 3.

What Can You Do To Improve Presenteeism Through Your Worksite Health Promotion Program?

There are a number of strategies that can be used within a WHP program or Health and Productivity Management initiative that can reduce the adverse effects of presenteeism. Some of these strategies are as follows:

1. **Place presenteeism questions into Health Risk Assessment (HRA) instruments:** This first step can begin to provide a more valid assessment of the problem of presenteeism in your own pop-

ulation and can lay the foundation for future planning, targeting and evaluation. It also functions to enhance awareness of presenteeism issues.

2. **Provide a personalized self-care guide to each individual based on the symptoms and chronic conditions identified in the HRA:** Using a presenteeism focus, structure the question sets in the HRA to help identify when the individual is at-risk for the specific symptoms and conditions identified in Table 3 and provide a personalized report or self-care guide that identifies prevention strategies and treatment alternatives with an eye to minimizing presenteeism-related productivity losses.
3. **Use the presenteeism-related data from the HRA to plan interventions for sub-groups:** From this type of data it is possible to select the symptom/conditions/diseases that should be addressed in your worksite to minimize the work losses associated with presenteeism. Sub-popula-

tion data may also provide useful programming insights into differences between employee subgroups, such as production versus sales staff.¹⁴

4. **Include presenteeism issues in health communications activity:** Increase awareness among employees of the most typical conditions that affect at-work productivity and provide suggestions on how their adverse effect might be minimized. This information can be included in wellness newsletters, internal employee newsletters, program handout materials and on Intranet and Internet links.
5. **Include typical presenteeism conditions in medical self-care and consumerism training:** Provide an overview for employees about how prevalent these conditions are and how individuals can deal with them through both preventive strategies and ameliorative strategies. It is also possible to identify website resources or links that can help people cope with these health conditions.
6. **Provide some targeted intervention strategies For the most costly conditions:** These strategies may include: provider referral, over-the-counter (OTC) and prescription medications, home care strategies, symptom amelioration activities and onsite occupational health services support.
7. **Provide incentives for improved presenteeism.** If the program measures presenteeism with an HRA or other measure, it can be included in a larger wellness incentive program.
8. **Establish cultural norms that improve presenteeism:** Another possible strategy is to help establish a cultural norm that emphasizes that sick leave should be used when an individual is clearly sick. Another related norm could support people taking regular breaks and lunch and also utilizing vacation on a regular basis.
9. **Measure presenteeism pre and post as part of program evaluation:** Utilize a consistent measurement process for presenteeism in both baseline periods and at regular intervals to monitor potential program effects.

Dealing with Presenteeism: The Future Tense?

As we look into the future of how employers might respond to presenteeism there are several alternative scenarios that come to mind. In one scenario, it's possible that many employers will simply ignore presenteeism issues largely because of its often "invisible" nature. This "invisibility" stems from the fact that presenteeism is not actually a "cash" expense to business executives so that it may not garner the amount of interest and attention that reduction of a "cash" expense such as health plan expense may stimulate.

At the other extreme, an employer that is facing very competitive markets and has reduced health care – related expenses as much as possible could choose to aggressively address presenteeism through a variety of creative options including:

- ✓ Incorporating presenteeism measures into an annual web-based HRA that is performed at open enrollment each year or at the time of new employee orientation.
- ✓ Using the presenteeism-related HRA data, automatically deliver specially tailored interventions via telephone, streaming video, mail and/or email.
- ✓ Provide a web hyperlink to all employees with information about how to minimize the adverse effects associated with the full range of presenteeism-related health conditions contained in Table 3 above.
- ✓ Provide onsite occupational health services that include walk-in access for those suffering from presenteeism related health conditions including access to OTC and prescription pharmaceutical products that have demonstrated ability to help mitigate the adverse clinical symptoms associated with allergies, migraines, depression, and anxiety.
- ✓ Provide online self-help and self-care chat room options for all the major conditions that contribute to presenteeism-related losses.
- ✓ Incent the use of these presenteeism-related interventions by connecting participation with a re-

duced health plan premium contribution level and/or increased employer contributions into a Health Savings Account.

- ✓ Finally, provide a self-diagnostic E-learning opportunity to help those who are not feeling very productive but are not sure why.

In summary, the "future tense" of presenteeism may take many different forms in the years ahead.

Concluding Points

There are several points that bear restatement and emphasis when considering presenteeism and its relationship to Worksite Health Promotion (WHP). In summary form these include:

- ✓ Presenteeism should be a logical component to our efforts at improving worksite health.
- ✓ The aging of work populations will increase the importance of presenteeism.
- ✓ There is a rapidly evolving measurement capability under active development for use in presenteeism applications for the worksite.
- ✓ Presenteeism will likely gain economic credibility for most employers as the methods and study results are more broadly disseminated.
- ✓ There are a number of very practical ways that presenteeism can be addressed in WHP and HPM efforts.
- ✓ And lastly, that employers will likely devised more effective and more highly integrated ways of addressing presenteeism in the years to come.

Larry S. Chapman, MPH, is Chairman and Co-Founder, Summex Health Management and Editor of The Art of Health Promotion.

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Selected Abstracts

Reliability and validity of the Stanford Presenteeism scale.

Turpin RS, Ozminowski RJ, Sharda CE, Collins JJ, Berger ML, Billotti GM, Baase CM, Olson MJ, Nicholson S.

OBJECTIVE: This study reports the reliability and validity of the 13-item Stanford Presenteeism Scale (SPS). The SPS differs from similar scales by focusing on knowledge-based and production-based workers. **METHODS:** Data were obtained from administrative and medical claims databases and from a survey that incorporated the SPS, SF-36, and the Work Limitations Questionnaire. **RESULTS:** Sixty-three percent (7797) of employees responded. Cronbach's alpha (0.83) indicates adequate reliability. Factor analysis identified two underlying factors, "completing work" and "avoiding distraction." Knowledge-based workers load on

"completing work" (alpha = 0.97), whereas production-based workers load on "avoiding distraction" (alpha = 0.98). There were significant and positive relationships between the SPS, SF-36, and Work Limitations Questionnaire. **CONCLUSIONS:** The SPS demonstrates a high degree of reliability and validity and may be ideal for employers who seek a single scale to measure health-related productivity in a diverse employee population.

J Occup Environ Med. 2004 Nov; 46(11):1123-33.

Presenteeism: at work-but out of it.

Hemp P.

Employers are beginning to realize that they face a nearly invisible but significant drain on productivity: presenteeism, the problem of workers' being on the job but, because of illness or other medical conditions,

not fully functioning. By some estimates, the phenomenon costs U.S. companies over 150 billion dollars a year—much more than absenteeism does. Yet it's harder to identify. You know when someone doesn't show up for work, but you often can't tell when, or how much, poor health hurts on-the-job performance. Many of the health problems that result in presenteeism are relatively benign. Research in this emerging area of study focuses on such chronic or episodic ailments as seasonal allergies, asthma, headaches, depression, back pain, arthritis, and gastrointestinal disorders. The fact is, when people don't feel good, they simply don't perform at their best. Employees who suffer from depression may be fatigued and irritable—and, therefore, less able to work effectively with others. Those with migraine headaches who experience blurred vision and sensitivity to light, not to mention acute pain, probably have a

hard time staring at a computer screen all day. A number of companies are making a serious effort to determine the prevalence of illnesses and other medical conditions that undermine job performance, calculate the related drop in productivity, and find cost-effective ways to combat that loss. Indeed, researchers have discovered that presenteeism-related declines in productivity sometimes can be more than offset by relatively small investments in screening, treatment, and education. So organizations may find that it pays to make targeted investments in employees' health care—by covering the cost of allergy medication, for instance, or therapy for depression.

Harv Bus Rev. 2004 Oct;82(10):49–58, 155.

The work impact of dysthymia in a primary care population.

Adler, David A.; Irish, Julie; McLaughlin, Thomas J.; Perissinotto, Carla; Chang, Hong; Hood, Maggie; Lapitsky, Leueen; Rogers, William H.; Lerner, Debra.

Abstract (from the journal abstract) Physicians regard individuals with dysthymia as having relatively normal levels of functioning. This study examines in detail the work impact of dysthymia in a population of employed primary care patients. As part of an observational study conducted between 2001 and 2003 in clinics associated with three health plans in Massachusetts, we compared 69 patients diagnosed with DSM-IV dysthymia without concurrent major depressive disorder to 175 depression-free controls. Patients were employed at least 15 h per week, had no immediate plans to leave the labor market, and no major comorbid medical conditions. We assessed work absences and productivity loss due to on-the-job performance limitations (“presenteeism”). Patients with dysthymia, compared with controls, had less stable work histories and a greater frequency of significant problems at work. While absence rates were not significantly different

(1.2 vs. 0.74 days, $P < .09$), individuals with dysthymia experienced significantly greater on-the-job productivity loss (6.3% vs. 2.8%, $P < .0001$). Dysthymia is an unrecognized cause of work impairment that has long-term negative consequences for individuals and their employers. The persistence of dysthymia with its serious impact on work functioning calls out for the development of new interventions.

General Hospital Psychiatry. 2004 Jul–Aug 26(4): 269–276

Change in health risks and work productivity over time.

Pelletier B, Boles M, Lynch W.

We sought to examine the relationship between changes in health risks and changes in work productivity. Pre- and post-analysis was conducted on 500 subjects who participated in a wellness program at a large national employer. Change in health risks was analyzed using McNemar chi-square tests, and change in mean productivity was analyzed using paired t tests. A repeated measures regression model examined whether a change in productivity was associated with a change in health risks, controlling for age and gender. Individuals who reduced one health risk improved their presenteeism by 9% and reduced absenteeism by 2%, controlling for baseline risk level, age, gender, and interaction of baseline risk and risk change. In conclusion, reductions in health risks are associated with positive changes in work productivity. Self-reported work productivity may have utility in the evaluation of health promotion programs.

J Occup Environ Med. 2004 Jul; 46(7):746–54.

The application of two health and productivity instruments at a large employer.

Ozminkowski RJ, Goetzel RZ, Chang S, Long S.

We applied two productivity instruments (the Work Productivity Short Inventory and the Work Limitations Questionnaire) to the same employees working at a large telecommunications firm. In this work we note differences in productivity metrics obtained from these instruments and offer reasons for those differences that may be related to their design. Within this sample, average at-work productivity (presenteeism) losses were 4.9% as measured by the WLQ and 6.9% as measured by the WPSI. These translated into losses of approximately \$2000 to \$2800 per employee per year, respectively. Total productivity losses were usually not associated with demographics or job type but were associated with perceived health status and the existence of particular medical conditions. Both instruments may be useful for employers who want to estimate productivity losses and learn where to focus their energy to help stem those losses.

J Occup Environ Med. 2004 Jul; 46(7):635–48.

The association of medical conditions and presenteeism.

Burton WN, Pransky G, Conti DJ, Chen CY, Edington DW.

A self-reported measure of four domains of work impairment based on the Work Limitations Questionnaire was completed by 16,651 employees of a large financial services corporation. Using a multivariate model to control for coexisting conditions, age, and gender, significant relationships were observed between medical conditions and patterns of impaired work performance. Depression was highly associated with work limitations in time management (odds ratio [OR] = 2.05), interpersonal/mental functioning (OR = 2.50), and overall output (OR = 2.24). Arthritis (OR = 1.56) and low back pain (OR = 1.32) were associated with physical function limitations. These same two conditions were associated with limitations in mental/interpersonal functioning but with low back pain

having the higher odds ratio (OR = 1.54 vs. 1.22). These results suggest that worksite interventions (eg, disease management programs) should be tailored to the unique effects observed with specific medical conditions. More targeted programs could have important benefits for productivity in the workplace.

J Occup Environ Med. 2004 Jun;46(6 Suppl):S38-45.

Using the World Health Organization Health and Work Performance Questionnaire (HPQ) to evaluate the indirect workplace costs of illness.

Kessler RC, Ames M, Hymel PA, Loeppke R, McKenas DK, Richling DE, Stang PE, Ustun TB.

This report presents an overview of methodological issues in estimating the indirect workplace costs of illness from data obtained in employee surveys using the World Health Organization Health and Work Performance Questionnaire (HPQ). The HPQ is a brief self-report questionnaire that obtains three types of information: screening information about the prevalence and treatment of commonly occurring health problems; information about three types of workplace consequences (sickness absence, presenteeism, and critical incidents); and basic demographic information. The report considers two sets of methodological issues. The first set deals with measurement. The rationale for the HPQ approach to measurement is described in this section. In addition, data are presented regarding the accuracy of HPQ measures, documenting that the HPQ has excellent reliability, validity, and sensitivity to change. The second set of methodological issues deals with data analysis. A number of analysis problems are reviewed that arise in using self-report non-experimental survey data to estimate the workplace costs of illness and the cost-effectiveness of treatment. Innovative data analysis strategies

are described to address these problems.

J Occup Environ Med. 2004 Jun;46(6 Suppl):S23-37.

Health, absence, disability, and presenteeism cost estimates of certain physical and mental health conditions affecting U.S. employers.

Goetzel RZ, Long SR, Ozminkowski RJ, Hawkins K, Wang S, Lynch W.

Evidence about the total cost of health, absence, short-term disability, and productivity losses was synthesized for 10 health conditions. Cost estimates from a large medical/absence database were combined with findings from several published productivity surveys. Ranges of condition prevalence and associated absenteeism and presenteeism (on-the-job-productivity) losses were used to estimate condition-related costs. Based on average impairment and prevalence estimates, the overall economic burden of illness was highest for hypertension (\$392 per eligible employee per year), heart disease (\$368), depression and other mental illnesses (\$348), and arthritis (\$327). Presenteeism costs were higher than medical costs in most cases, and represented 18% to 60% of all costs for the 10 conditions. Caution is advised when interpreting any particular source of data, and the need for standardization in future research is noted.

J Occup Environ Med. 2004 Apr; 46(4):398-412.

A review of self-report instruments measuring health-related work productivity: a patient-reported outcomes perspective.

Prasad M, Wahlqvist P, Shikhar R, Shih YC.

Health impairment often leads to work impairment in the form of both absenteeism and presenteeism (i.e. reduced productivity while at work). Several self-report productivity instruments have been designed over the past few years to measure the impact of illness on productivity at work and/or in non-work activities. In a review of the literature we identified six generic subjective instruments—the Endicott Work Productivity Scale, Health and Labor Questionnaire, Health and Work Questionnaire, Health and Work Performance Questionnaire, Work Limitations Questionnaire (WLQ) and the Work Productivity and Activity Impairment Questionnaire (WPAI)—that could theoretically be used in any working population. These instruments were usually validated against other subjective measures (such as health-related QOL). Each productivity instrument has benefits in certain research settings, but the psychometric properties of the WPAI have been assessed most extensively. It was the most frequently used instrument and has also been modified to measure productivity reductions associated with specific diseases (e.g. allergic rhinitis, gastroesophageal reflux disease, chronic hand dermatitis). The WLQ has also been tested extensively to measure the general health impact and impact of specific conditions. Two migraine-specific subjective instruments were also identified: the Migraine Disability Assessment questionnaire and the Migraine Work and Productivity Loss Questionnaire, of which the latter was found to have better psychometric properties. Productivity outcomes are useful in that they characterise the impact of an illness in the workplace and show the effect of treatment on productivity. Evidence of psychometric properties and generalisability of different instruments was found to a varying degree. Thus, further research is needed to assess the accuracy and usefulness of individual instruments in certain research settings. Health-related productivity has been increasingly recognised as an important component of the burden of illness associated with a given disease;

without it, one cannot reliably assess this burden.

Pharmacoeconomics. 2004;22(4):225-44.

A review of health-related workplace productivity loss instruments.

Lofland JH, Pizzi L, Frick KD.

The objective of this review was to identify health-related workplace productivity loss survey instruments, with particular emphasis on those that capture a metric suitable for direct translation into a monetary figure. A literature search using Medline, HealthSTAR, PsycINFO and Econlit databases between 1966 and 2002, and a telephone-administered survey of business leaders and researchers, were conducted to identify health-related workplace productivity measurement survey instruments. This review was conducted from the societal perspective. Each identified instrument was reviewed for the following: (i). reliability; (ii). content validity; (iii). construct validity; (iv). criterion validity; (v). productivity metric(s); (vi). instrument scoring technique; (vii). suitability for direct translation into a monetary figure; (viii). number of items; (ix). mode(s) of administration; and (x). disease state(s) in which it had been tested. Reliability and validity testing have been performed for 8 of the 11 identified surveys. Of the 11 instruments identified, six captured metrics that are suitable for direct translation into a monetary figure. Of those six, one instrument measured absenteeism, while the other five measured both absenteeism and presenteeism. All of the identified instruments except for one were available as paper, self-administered questionnaires and many were available in languages other than English. This review provides a comprehensive overview of the published, peer-reviewed survey instruments available to measure health-related workplace productivity loss. As the field of productivity measurement matures, tools

may be developed that will allow researchers to accurately calculate lost productivity costs when performing cost-effectiveness and cost-benefit analyses. Using data captured by these instruments, society and healthcare decision makers will be able to make better informed decisions concerning the value of the medications, disease management and health promotion programmes that individuals receive

Pharmacoeconomics. 2004;22(3):165-84.

Chronic medical conditions and work performance in the health and work questionnaire calibration surveys.

Wang PS, Beck A, Berglund P, Leutzinger JA, Pronk N, Richling D, Schenk TW, Simon G, Stang P, Ustun TB, Kessler RC.

Associations between chronic conditions and work performance (absenteeism, presenteeism, and critical incidents) were studied in reservation agents, customer service representatives, executives, and railroad engineers. Conditions and work performance were assessed with the World Health Organization's Health and Work Performance Questionnaire. Analysis of covariance was used to estimate associations. More work performance was lost from presenteeism than absenteeism. However, chronic conditions more consistently had negative impacts on absenteeism than presenteeism. Conditions with significant effects included arthritis, asthma, chronic obstructive pulmonary disease-emphysema, depression, and chronic headaches. Arthritis had the largest aggregate effect on absenteeism-presenteeism. Only depression affected both absenteeism-presenteeism and critical incidents. Some chronic conditions have substantial workplace effects. Disease management programs for these conditions might have a positive return on investment (ROI). Health and produc-

tivity tracking surveys are needed to evaluate ROI and provide quality assurance.

J Occup Environ Med. 2003 Dec; 45(12):1303-11.

Investing in healthy human capital.

Berger ML, Howell R, Nicholson S, Sharda C.

Although the value of human capital is not captured on company balance sheets, it may account for about half of the gap between a company's market value and book value. Yet, many companies do not focus comparable scrutiny on human capital management as compared with other large assets, nor do they systematically measure its output (ie, productivity). Methods are emerging to enable employers to assess productivity losses, including absenteeism and presenteeism, and to understand the associated costs (ie, direct medical costs, total productivity loss). This will permit employers to assess the value of programs to enhance health and productivity. We contend that the effective workforce is probably decreased by 5% to 10% because of health problems. We believe that employers who increase their investments in healthy human capital now will emerge tomorrow as the companies leading the gains in US productivity.

J Occup Environ Med. 2003 Dec; 45(12):1213-25.

Lost productive time and cost due to common pain conditions in the US workforce.

Stewart WF, Ricci JA, Chee E, Morganstein D, Lipton R.

CONTEXT: Common pain conditions appear to have an adverse effect on work, but no comprehensive estimates exist on the amount of productive time lost in the US workforce due to pain. OBJECTIVE: To measure lost productive time (absence and reduced performance due to common pain conditions) during a 2-week period. DESIGN AND SET-

SETTING: Cross-sectional study using survey data from the American Productivity Audit (a telephone survey that uses the Work and Health Interview) of working adults between August 1, 2001, and July 30, 2002. **PARTICIPANTS:** Random sample of 28 902 working adults in the United States. **MAIN OUTCOME MEASURES:** Lost productive time due to common pain conditions (arthritis, back, headache, and other musculoskeletal) expressed in hours per worker per week and calculated in US dollars. **RESULTS:** Thirteen percent of the total workforce experienced a loss in productive time during a 2-week period due to a common pain condition. Headache was the most common (5.4%) pain condition resulting in lost productive time. It was followed by back pain (3.2%), arthritis pain (2.0%), and other musculoskeletal pain (2.0%). Workers who experienced lost productive time from a pain condition lost a mean (SE) of 4.6 (0.09) h/wk. Workers who had a headache had a mean (SE) loss in productive time of 3.5 (0.1) h/wk. Workers who reported arthritis or back pain had mean (SE) lost productive times of 5.2 (0.25) h/wk. Other common pain conditions resulted in a mean (SE) loss in productive time of 5.5 (0.22) h/wk. Lost productive time from common pain conditions among active workers costs an estimated 61.2 billion dollars per year. The majority (76.6%) of the lost productive time was explained by reduced performance while at work and not work absence. **CONCLUSIONS:** Pain is an inordinately common and disabling condition in the US workforce. Most of the pain-related lost productive time occurs while employees are at work and is in the form of reduced performance.

JAMA. 2003 Nov 12;290(18):2443-54.

Cost of lost productive work time among US workers with depression.

Stewart WF, Ricci JA, Chee E, Hahn SR, Morganstein D.

CONTEXT: Evidence consistently indicates that depression has adversely affected work productivity. Estimates of the cost impact in lost labor time in the US workforce, however, are scarce and dated. **OBJECTIVE:** To estimate the impact of depression on labor costs (ie, work absence and reduced performance while at work) in the US workforce. **DESIGN, SETTING, AND PARTICIPANTS:** All employed individuals who participated in the American Productivity Audit (conducted August 1, 2001-July 31, 2002) between May 20 and July 11, 2002, were eligible for the Depressive Disorders Study. Those who responded affirmatively to 2 depression-screening questions (n = 692), as well as a 1:4 stratified random sample of those responding in the negative (n = 435), were recruited for and completed a supplemental interview using the Primary Care Evaluation of Mental Disorders Mood Module for depression, the Somatic Symptom Inventory, and a medical and treatment history for depression. Excess lost productive time (LPT) costs from depression were derived as the difference in LPT among individuals with depression minus the expected LPT in the absence of depression projected to the US workforce. **MAIN OUTCOME MEASURE:** Estimated LPT and associated labor costs (work absence and reduced performance while at work) due to depression. **RESULTS:** Workers with depression reported significantly more total health-related LPT than those without depression (mean, 5.6 h/wk vs an expected 1.5 h/wk, respectively). Eighty-one percent of the LPT costs are explained by reduced performance while at work. Major depression accounts for 48% of the LPT among those with depression, again with a majority of the cost explained by reduced performance while at work. Self-reported use of antidepressants in the previous 12 months among those with depression was low (<33%) and the mean reported treatment effectiveness was only moderate. Extrapolation of these survey results and self-reported annual incomes to the pop-

ulation of US workers suggests that US workers with depression employed in the previous week cost employers an estimated 44 billion dollars per year in LPT, an excess of 31 billion dollars per year compared with peers without depression. This estimate does not include labor costs associated with short- and long-term disability. **CONCLUSIONS:** A majority of the LPT costs that employers face from employee depression is invisible and explained by reduced performance while at work. Use of treatments for depression appears to be relatively low. The combined LPT burden among those with depression and the low level of treatment suggests that there may be cost-effective opportunities for improving depression-related outcomes in the US workforce.

JAMA. 2003 Jun 18;289(23):3135-44.

Health-related workplace productivity measurement: general and migraine-specific recommendations from the ACOEM Expert Panel.

Loeppke R, Hymel PA, Lofland JH, Pizzi LT, Konicki DL, Anstadt GW, Baase C, Fortuna J, Scharf T; American College of Occupational and Environmental Medicine.

An establishment of health-related productivity measurements and critical evaluation of health-related productivity tools is needed. An expert panel was created. A literature search was conducted to identify health-related productivity measurement tools. Each instrument was reviewed for: 1) supporting scientific evidence (e.g., reliability and validity); 2) applicability to various types of occupations, diseases, and level of severity of disease; 3) ability to translate data into a monetary unit; and 4) practicality. A modified Delphi technique was used to build consensus. The expert panel recommended absenteeism, presenteeism, and employee turnover/replacement

costs as key elements of workplace health-related productivity measurement. The panel also recommended that productivity instruments should: 1) have supporting scientific evidence, 2) be applicable to the particular work setting, 3) be supportive of effective business decision-making, and 4) be practical. Six productivity measurement tools were reviewed. The panel recommended necessary elements of workplace health-related productivity measurement, key characteristics for evaluating instruments, and tools for measuring work loss. Continued research, validation, and on-going evaluation of health-related productivity instruments are needed.

J Occup Environ Med. 2003 Apr; 45(4):349-59.

The economic burden of lost productivity due to migraine headache: a specific worksite analysis.

Burton WN, Conti DJ, Chen CY, Schultz AB, Edington DW.

Large, epidemiologic survey studies have established that migraine headaches affect approximately 6% of men and 18% of women in the United States and that the condition peaks during the prime working years (25 to 55 years of age). The consequent economic burden experienced by employers is substantial. The majority of this economic burden is realized by employers in terms of lost productivity, a combination of costs attributable to absenteeism and to lost productivity while on the job ("presenteeism"). Although large survey studies have produced estimates of national prevalence and have suggested substantial national costs, specific employers are rarely able to apply these projections to their specific workforce. Using demographic and payroll data available from a large financial services corporation with over 80,000 employees, this study used established prevalence data to estimate corporate costs stemming from migraine-related absenteeism and re-

duced on-the-job productivity to total at least \$21.5 M and \$24.4 M. In addition, a comparison of predicted prevalence and cost impact was conducted using a simpler and less costly health risk appraisal. This assessment proved to be a reliable tool in assessing prevalence of migraines in this corporation's workforce. Its use with a sample of 19,853 employees at this corporation produced prevalence rates of 7.7% of men and 23.4% of women, estimates closely comparable to those of national surveys. Suggestions are made regarding a corporate response to the substantial costs of lost productivity associated with migraine headache.

J Occup Environ Med. 2002 Jun; 44(6):523-9.

Stanford presenteeism scale: health status and employee productivity.

Koopman C, Pelletier KR, Murray JF, Sharda CE, Berger ML, Turpin RS, Hackleman P, Gibson P, Holmes DM, Bendel T.

Workforce productivity has become a critical factor in the strength and sustainability of a company's overall business performance. Absenteeism affects productivity; however, even when employees are physically present at their jobs, they may experience decreased productivity and below-normal work quality—a concept known as decreased presenteeism. This article describes the creation and testing of a presenteeism scale evaluating the impact of health problems on individual performance and productivity. A total of 175 county health employees completed the 34-item Stanford Presenteeism Scale (SPS-34). Using these results, we identified six key items to describe presenteeism, resulting in the SPS-6. The SPS-6 has excellent psychometric characteristics, supporting the feasibility of its use in measuring health and productivity. Further validation of the SPS-6 on actual presenteeism (work loss data) or health status (health risk assessment or utilization data) is needed.

J Occup Environ Med. 2002 Jan; 44(1):14-20.

The effects of chronic medical conditions on work loss and work cutback.

Kessler RC, Greenberg PE, Mickelson KD, Meneades LM, Wang PS.

Although work performance has become an important outcome in cost-of-illness studies, little is known about the comparative effects of different commonly occurring chronic conditions on work impairment in general population samples. Such data are presented here from a large-scale nationally representative general population survey. The data are from the MacArthur Foundation Midlife Development in the United States (MIDUS) survey, a nationally representative telephone-mail survey of 3032 respondents in the age range of 25 to 74 years. The 2074 survey respondents in the age range of 25 to 54 years are the focus of the current report. The data collection included a chronic-conditions checklist and questions about how many days out of the past 30 each respondent was either totally unable to work or perform normal activities because of health problems (work-loss days) or had to cut back on these activities because of health problems (work-cutback days). Regression analysis was used to estimate the effects of conditions on work impairments, controlling for socio-demographics. At least one illness-related work-loss or work-cutback day in the past 30 days was reported by 22.4% of respondents, with a monthly average of 6.7 such days among those with any work impairment. This is equivalent to an annualized national estimate of over 2.5 billion work-impairment days in the age range of the sample. Cancer is associated with by far the highest reported prevalence of any impairment (66.2%) and the highest conditional number of impairment days in the past 30 (16.4 days). Other conditions associated with high odds of any impairment include ulcers, ma-

for depression, and panic disorder, whereas other conditions associated with a large conditional number of impairment days include heart disease and high blood pressure. Comorbidities involving combinations of arthritis, ulcers, mental disorders, and substance dependence are associated with higher impairments than expected on the basis of an additive model. The effects of conditions do not differ systematically across subsamples defined on the basis of age, sex, education, or employment status. The enormous magnitude of the work impairment associated with chronic conditions and the economic advantages of interventions for ill workers that reduce work impairments should be factored into employer cost-benefit calculations of expanding health insurance coverage. Given the enormous work impairment associated with cancer and the fact that the vast majority of employed people who are diagnosed

J Occup Environ Med. 2001 Mar; 43(3):218-25.

The impact of allergies and allergy treatment on worker productivity.

Burton WN, Conti DJ, Chen CY, Schultz AB, Edington DW.

Allergic disorders are a chronic and highly prevalent condition in the general population and the workforce. Their effect on workers and corporate costs go beyond the direct cost of treatment, as the condition can lower a worker's productivity. Previous research includes estimates of the decrease in productivity associated with allergic disorders. None of these studies, however, offered an objective measure of how worker productivity is affected by allergic disorders. In the present study, the productivity of telephone customer service representatives suffering from allergic disorders is examined before,

during, and after the ragweed pollen season. In addition, these workers were surveyed as to the type of medication they used in response to their condition. A significant correlation was observed between an increase in pollen counts and a decrease in productivity for workers with allergies. Compared with workers without allergies, employees with allergies who reported using no medication showed a 10% decrease in productivity. No differences were observed among workers with allergies using different types of medications, although the medication groups had significantly higher productivity than the no-medication group. The expected lowered productivity of those workers with allergies who used sedating antihistamines may have been offset by their relatively lower level of symptom severity and by the nature of the job and the productivity measures used.

J Occup Environ Med. 2001 Jan; 43(1):64-71.

Closing Thoughts

By Larry S. Chapman, MPH



Is "presenteeism" likely to become a common fixture of most worksite health promotion program? It's definitely possible, especially among older and more mature pro-

grams that are strongly focused on economic return. However, not all employers are driven by an intense focus on economic return nor are they all equally motivated by "non-cash" savings opportunities.

Recently this reality was driven home to me in a conversation I had with a WHP program manager. After exchanging pleasantries for a few

minutes, I asked her why she was not more interested in documenting the economic return associated with her program. Her response surprised me a little. She said . . . "As long as people enjoy the program I don't feel much need to prove the program's ROI." Her program has lots of activity, but not a lot of economic results. From my perspective, she is not likely to be a good candidate for presenteeism-related interventions.

In a similar vane, those mature programs (i.e., 5 years old or more) that must "prove their worth" are very likely to add presenteeism to their current programming and evaluation efforts in order to broaden the basis of their program's economic rationale. The most feasible long term approach is likely to be a "morphing" of Worksite Health Promotion

into a Health and Productivity Management perspective in which the organization makes a formal long term commitment to a set of constantly improving health promotion and health management interventions that help manage health plan cost, sick leave absenteeism, workers' compensation costs, disability management costs, presenteeism, and turnover.

The economic "scorecard" that can result from this kind of approach is likely to appeal to all senior managers at some level. Perhaps a memorable line from the movie *All the President's Men* sums it up succinctly:—"Follow the Money."

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