

The Productivity Burden of Migraine

And Evidence for Effective
Care

Brian Gifford, Ph.D.

October 12, 2018

Agenda

About IBI

The Business Case for a Healthy Workforce

The Costs of Migraine in the Workforce

The Performance Impact of Migraine

Evidence for Effective Interventions

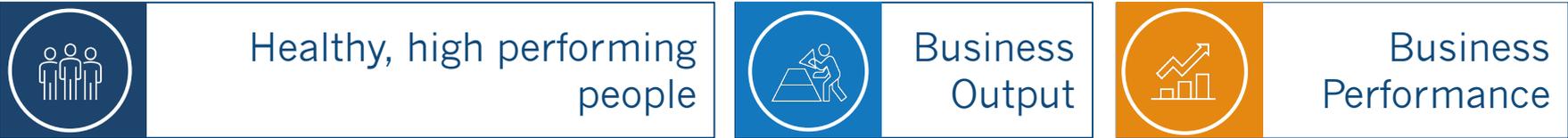
Summary Findings

- Among U.S. workers, migraine costs about \$84 PEPY in excess healthcare treatments and lost work time.
 - 27% for excess sick days and disability leaves
 - Undercounts value of lost outputs, early exits from the labor force, excess turnover costs and presenteeism (underperformance on the job due to migraine)
- Employees with migraine or severe headaches also report more difficulties concentrating at work, working carefully, and doing quality work
 - But the association goes away when controlling for headache frequency
 - This is consistent with the proposition that managing symptoms can preserve productivity

About IBI

- National, non-profit research and educational organization focused on workforce health and productivity
 - 1,300+ corporate members
- Help business leaders:
 - Understand the toll that illness takes on workers' productivity
 - Recognize the competitive advantages of helping employees get and stay healthy
- Research, data, tools, peer-to-peer learning opportunities

The Business Case for a Healthy Workforce



Some Measures that get Business Leaders Attention

Link people's health and wellbeing to...

HUMAN CAPITAL MANAGEMENT	BUSINESS OUTPUT	BUSINESS PERFORMANCE
Employee satisfaction/engagement	Store/unit sales	Revenues
Employee turnover	Billable hours	Profitability
HR costs per employee	Customer satisfaction	Shareholder value
Supervisor evaluations	Inventory turnover	
	Service errors	
	Product defects	
	Process/product throughput	

How Does Absence and Disability Leave Fit In?



Important lagging indicators of people's **health** and their quality of care



Critical driver of company's **productivity**



Provides a bridge between the impact of high quality care and **business performance**

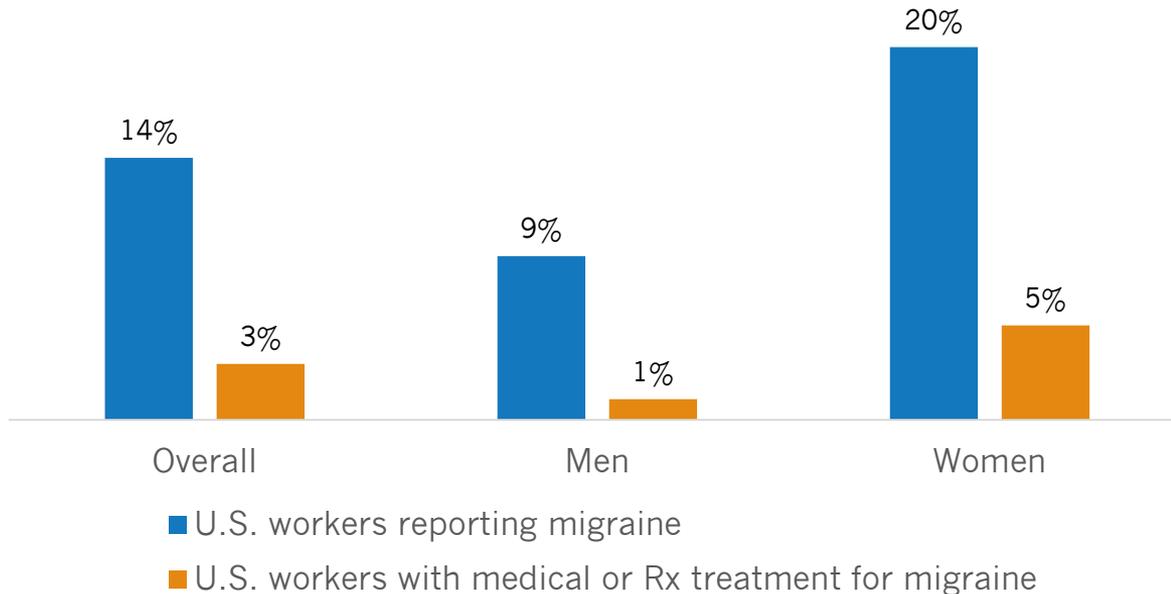
Costs of Migraine in the Workforce

- Medical and Rx treatment costs
- Sick day absences
- Short- and long-term disability

Data Sources for Model Assumptions

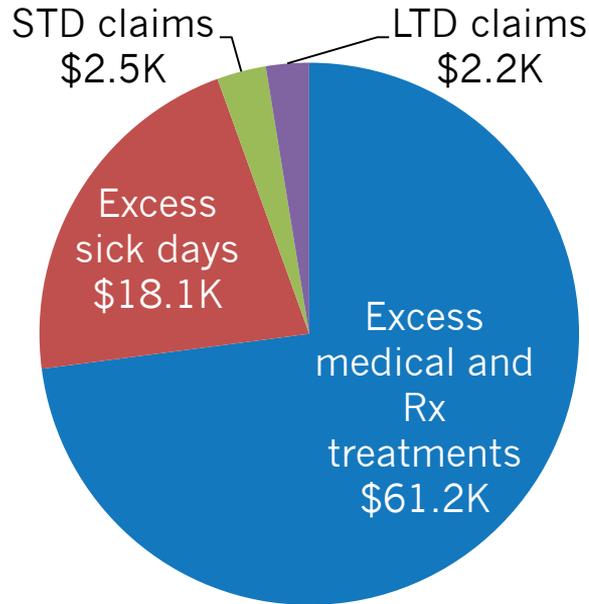
	Years	Data elements			Estimation method
CDC, National Health Interview Survey	2011-2016	Migraine prevalence			Descriptive
AHRQ, Medical Expenditure Panel Study	2011-2015	Treatment prevalence	Medical and Rx treatment costs	Sick day absences	Excess (marginal) costs and days, controlling for demographics and com-morbidities
IBI, Health and Productivity Benchmarking	2011-2016	Short-term and long-term (STD & LTD) claims rates	STD & LTD annual lost work days		Product of rate × days
BLS, Occupational Employment and Employer Compensation surveys	2015	Daily wages and benefits			Apply average daily wages and benefits to total lost work days

Migraine Treatment Rates are Far Below Prevalence



- Twice as many women report migraine
- 5 times as many women have treatments

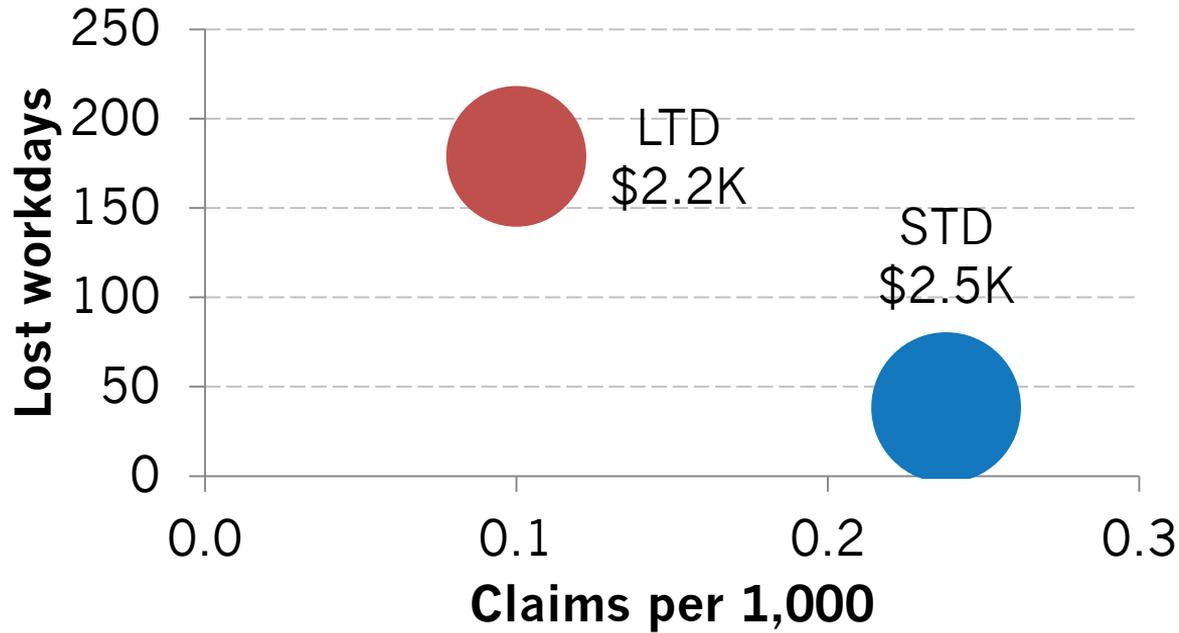
For Every 1,000 U.S. Workers, Migraine Costs \$84,000



For each person with migraine treatments ...

- \$2,000 per year in excess treatment costs
- 2.2 excess sick days per year (\$600)

Few Disability Claims, Costly in Lost Work time



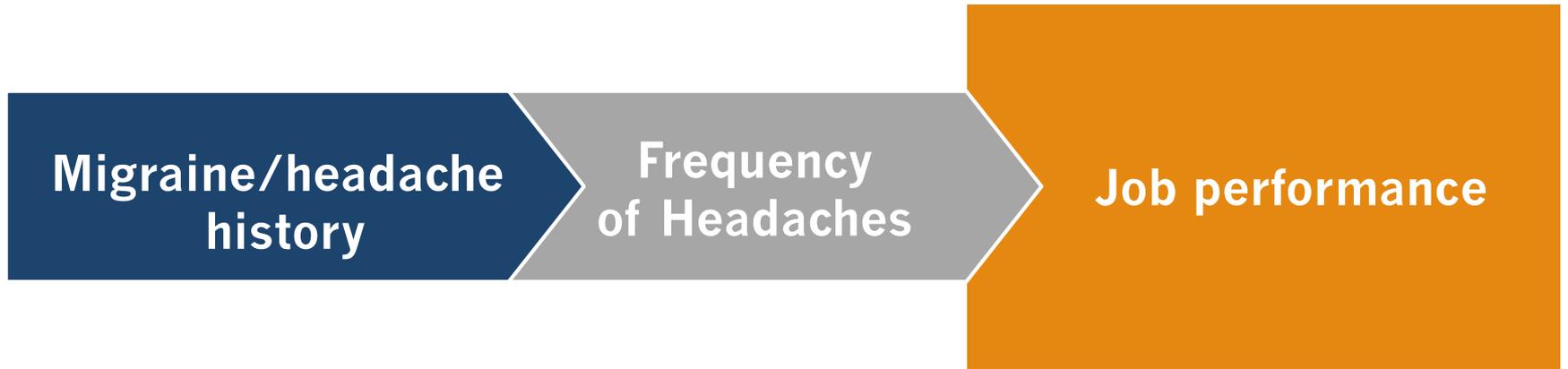
- 38 STD lost work days per claim, \$10,200 in economic losses
- 178 LTD days per year ... but 1 in 3 episodes last at least 2 years

The Job Performance Impact of Migraine

“How often ...

- Did you find yourself not working as carefully as you should?”
- Was the quality of your work lower than it should have been?”
- Did you not concentrate enough on your work?”

We Expect Migraineurs to Have More Challenges on the Job



But Only When They Experience Headaches

**Migraine/headache
history**

Job performance

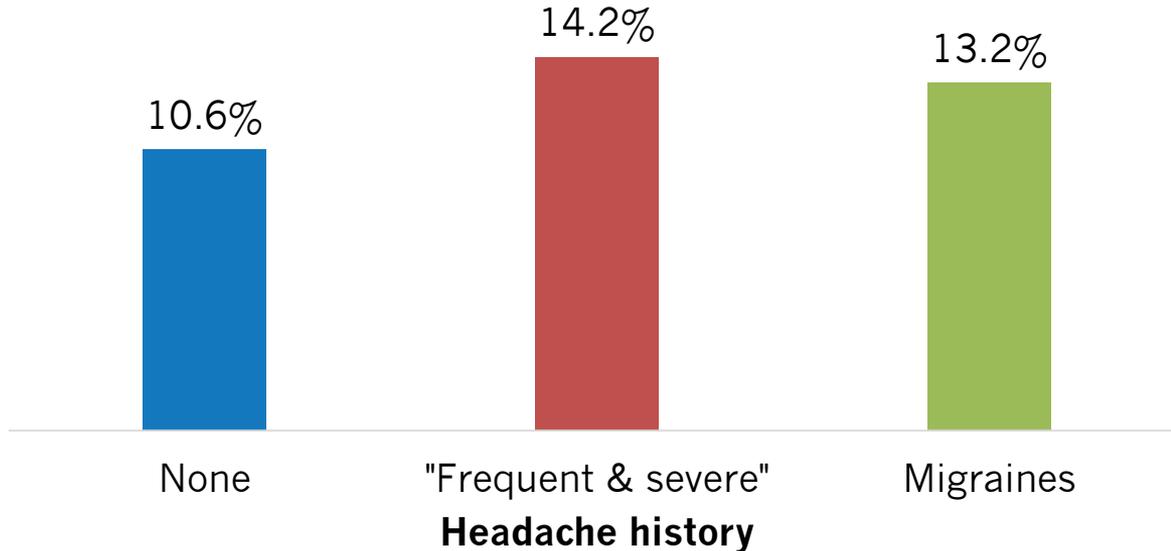
We statistically control for headache frequency to simulate the possibilities for a well-managed condition

Data Source: HPQ

- Survey data come from the World Health Organization Health and Work Performance Questionnaire
 - Harvard Medical School provided 32,545 employee surveys collected from nine employers
- Questions about chronic conditions, symptoms, absence, and job performance
- Ordinal logistic regression model predicting employee's probability of low, middle or high performance based on history of chronic headaches
 - Controlling for frequency of headaches

Employees with a History of Headaches Have More Impaired Performance than Others

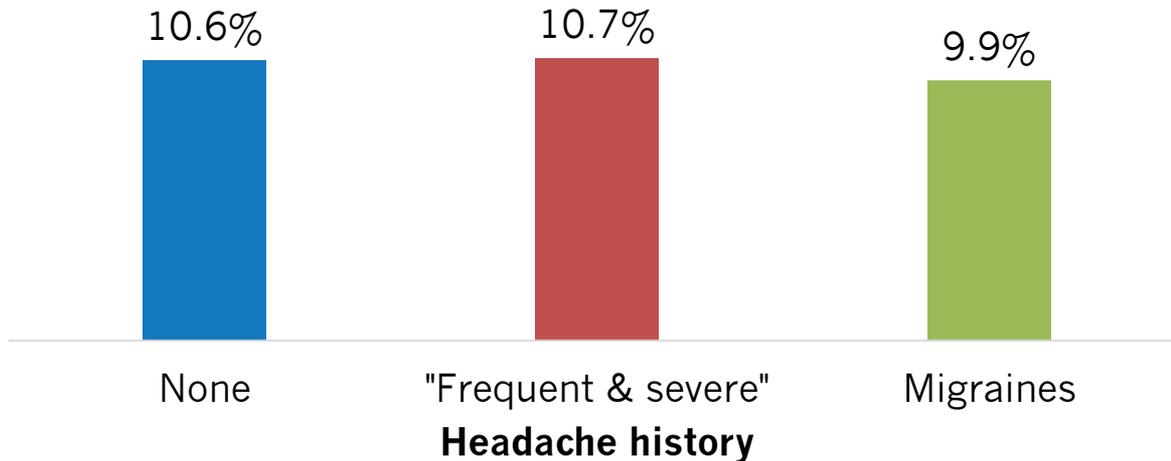
Without controlling for headache frequency



- % of workers reporting low performance (i.e., not concentrating, not working carefully, low quality work) **most of the time**
- Responses of employees with "frequent and severe" headaches statistically similar to employees with migraine

... All of Which Can Be Explained by How Often They Have Headaches

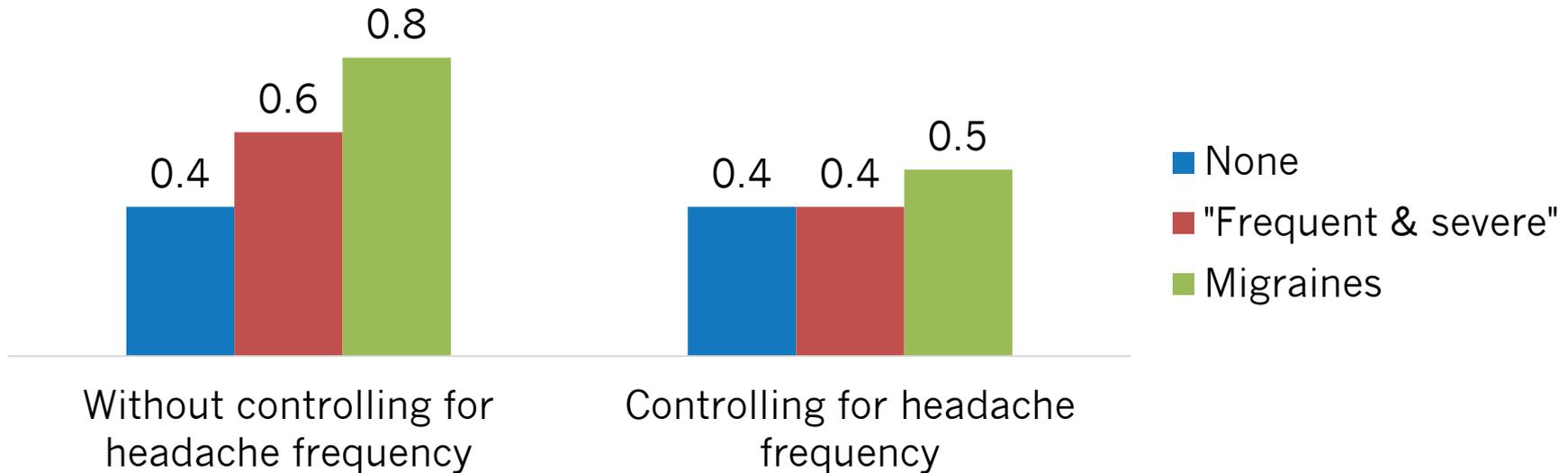
Controlling for headache frequency



- Other illness symptoms did not explain job performance differences across these groups.
- Suggests that helping chronic headache sufferers manage their headaches can improve their productivity on the job and their value to employers

Similar Pattern for Sick Day Absences

Days missed due to illness over the last 28 days



Evidence for Effective Interventions

- Many treatment options
- Productivity benefits of interventions
- Guidance for employers

Many Treatment Options, Little Clarity

- Partial list includes pain relievers, triptans, ergots, cardiovascular drugs, anticonvulsants, antidepressants, botulinum toxin A, calcitonin gene-related peptide inhibitors
- Avoidance of “triggers”
- Behavioral therapy to minimize stress and anxiety
- Severity, frequency, and duration targets of different disease management strategies

Studies Find Productivity Benefits of Interventions

- Initial use of migraine-specific medications followed by pain medications can mitigate loss of work functioning. (Seng et al. 2017)
- Triptans soon after the onset of headache—for example, within half an hour—associated with more rapid return to functioning. (Pradel et al. 2006)
- Work accommodations can improve on-the-job performance among employees with painful conditions such as migraine. (Gifford and Zong 2017)
- Migraine prophylactic therapy was found to decrease illness absences from work relative to placebo. (Lofland et al. 2007)

General Guidance for Employers

- Recognize the impact of migraine
 - Healthcare and disability claims will undercount productivity losses
 - Assess prevalence, common “non-clinical” interventions, and productivity losses through health risk assessments
- Promote migraine awareness in the workforce
- Develop benefit plans that cover a range of treatment options across different clinical specialties



Questions?

BRIAN GIFFORD

bgifford@ibiweb.org

References

- Gifford B. Sharing the Pain: The Productivity of Employees with Migraines and Chronic Severe Headaches. Integrated Benefits Institute. 2013.
- Gifford B, Zong Y. On-the-Job Productivity Losses among Employees with Health Problems: The Role of Work Accommodations. Journal of Occupational and Environmental Medicine. 2017;59(9):885-93.
- Integrated Benefits Institute. Health and Productivity Impact of Chronic Conditions (HPICC): Migraine and Other Headaches. 2018.
- Lofland JH, Gagne JJ, Pizzi LT, Rupnow M, Silberstein SD. Impact of topiramate migraine prophylaxis on workplace productivity: results from two US randomized, double-blind, placebo-controlled, multicenter trials. Journal of Occupational and Environmental Medicine. 2007 Mar 1;49(3):252-7.
- Pradel F, Subedi P, Varghese A, Mullins C, Weis K. Does earlier headache response equate to earlier return to functioning in patients suffering from migraine? Cephalalgia. 2006;26(4):428-35.
- Seng EK, Robbins MS, Nicholson RA. Acute migraine medication adherence, migraine disability and patient satisfaction: A naturalistic daily diary study. Cephalalgia. 2017;37(10):955-64.