MAGNITUDE AND EFFECTS OF "SLUDGE" IN BENEFITS ADMINISTRATION: HOW HEALTH INSURANCE HASSLES BURDEN WORKERS AND COST EMPLOYERS

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Administrative burdens may have substantial direct and indirect costs for employers and employees, making them important research topics. Here, we examine the time employees spend dealing with their health benefits administrators. Using a nationally representative sample, we found that the *direct* cost of the time spent by employees dealing with health insurance administration was approximately $21.57 billion, with 53 percent of that time spent ($11.4 billion) at work. The time spent on administrative burdens can also have spillover effects on employee attitudes. Specifically, we found that, controlling for self-reported health and various demographics, people who spent more time on the phone with their health insurer were less satisfied with their current workplace, less engaged, more likely to report significant stress, more likely to have missed a day or more of work, and more likely to feel burned out at work. The estimated cost of additional absence was $26.4 billion, and the productivity cost of reduced satisfaction was approximately $95.6 billion. Benefits constitute about 30 percent of employee costs, but there has been little study of how the "sludge" associated with accessing those benefits absorbs employee time and affects attitudes. Therefore, understanding administrative efficiency in benefits administration is an important topic.

Research and theorizing, particularly in the domain of public administration, has begun to explore the topic of administrative burdens and their consequences. For instance, Moynihan & Herd (2010; Moynihan, Herd, & Harvey, 2014) have argued that red tape and administrative burdens have at least three important effects. Red tape can exert significant compliance burdens on people's accessing rights and benefits, thereby imposing time costs and depriving people of resources or services to which they are ostensibly entitled. Commenting on what constitutes burdens, Herd, DeLeire, Harvey, & Moynihan (2013) noted that burdens can include the effort to learn about something, complying with rules and discretionary bureaucratic behavior, and the psychological costs of navigating the bureaucracy and feeling disrespected by those who can grant or withhold privileges and services. Second, red tape may affect different categories of people (e.g., the poor, less educated, and ethnic minorities) differentially, thus potentially magnifying aspects of inequality in the distribution of benefits. Third, the frustrations and effort required to cope with administrative burdens can increase people's cognitive load and stress, thereby potentially affecting how customers and employees experience their interactions with organizations and, as a consequence, influencing attitudes and behaviors toward those organizations.

In behavioral economics, Thaler (2018) urged people in both the public and private sectors to clean up "sludge," the unnecessary forms and complexities that inhibit people from making good decisions or taking desirable actions. Sunstein (2019b) proposed that organizations undertake "sludge audits" to reduce the excessive frictions experienced by consumers, employees, employers, students, patients, clients, and small businesses. Importantly, Sunstein (2019b) noted that both public and private organizations sometimes intentionally increased sludge to make it more difficult for people to obtain benefits.

Although much of the original research on administrative frictions has focused on government agencies—for instance, Sunstein (2019a) argued that in 2015, the U.S. government imposed almost 10 billion hours of paperwork on people—it is plausible that

administrative burdens occur in all kinds of organizations including businesses, with effects similar to those observed in the public administration literature. For example, in many companies, people have to apply for benefits such as childcare subsidies, tuition reimbursement, or family leave. That application process might affect their accessing these benefits and their attitudes toward their employers. As an example, in one coauthor's employing organization, before the legalization of same-sex marriage, the process of certifying same-gender relationships to access spousal benefits was so difficult that it absorbed employee time and created widespread resentment until it was changed.

In the public sector, partisan beliefs and the perceived deservingness of constituents can affect the extent of administrative burdens. In the private sector, internal political struggles between, for instance, finance and human resources over benefits costs and the effects of benefits on the attraction and retention of employees might affect the ultimate design and administration of various benefits programs.

Absent research on the effects of sludge, many companies may be simply unaware of the scale of administrative inefficiency and the downstream effects of administrative burdens on employee dissatisfaction and behavior. Although benefits typically constitute approximately 30 percent of total compensation (Bureau of Labor Statistics, 2020b), there has been scant research attention to the effects of how they are administered on both employees and employers, rendering the topic of benefits and their administration one of the most neglected in management research.

Our specific focus in this article is on one particular domain in which administrative burdens are notorious—health care—but where there has been to this point no empirical study of the magnitude or effects of these burdens on employees. We seek to estimate the costs of "sludge" in healthcare benefits administration as experienced by employees and their employers. We investigate both the direct costs of the time spent dealing with health insurers and the indirect costs of spending that time on important attitudes and behaviors.

HEALTH CARE AS A "BURDENED" BENEFIT

Pfeffer (2020) argued that the importance of an organizational phenomenon depended on 1) how pervasive the phenomenon was and 2) the magnitude or importance of its effects. Administrative burdens in health insurance seem to fit both criteria well, as red tape is pervasive, and health insurance is extremely important to employees and costly to their employers.

Extensive research has documented the enormous costs that U.S. healthcare administration impose in the form of excessive administrative overhead (e.g., Woolhandler & Himmelstein, 1991), and the fact that

the advent of computerization and electronic health records and administrative changes such as managed care have not reduced these costs (Woolhandler, Campbell, & Himmelstein, 2003). A recent review estimating the magnitude of waste in the U.S. healthcare system ranked administrative complexity as the *single* largest source of waste, even greater than pricing failures (Shrank, Rogstad, & Parekh, 2019), with an estimated cost of $265.5 billion. Brandon, Podhorzer, and Pollak (1991: 265), in a study of the commercial health insurance market, noted that "each insurance company spends vast amounts of money on underwriting, marketing, and *denying claims*" (emphasis added). The received wisdom in the research literature is that U.S. health care is more expensive than that in many other advanced industrialized countries without producing better outcomes because of two factors: 1) the higher prices of labor, devices, and pharmaceuticals, and 2) larger administrative costs (Papanicolas, Woskie, & Ashish, 2018). Health insurance administrative costs are substantively important and pervasive.

Evidence also demonstrates that administrative burdens profoundly affect people's experience with the healthcare system and that health insurance is important to employees. For instance, Collective Health, a health technology company, was cofounded by someone who "faced the agony of battling with a health insurer that did not want to pay my massive hospital and surgical bill" (Collective Health, 2015). In an interview, the former West Coast head of one of the leading health benefits consulting firms recounted her months-long fight with her insurer over a $700,000 plus bill for her child. Another interview with a former finance industry employee described an individual literally being brought to tears by the frustration of obtaining coverage for an eye examination.

Health insurance is an important employer-provided benefit that could influence employees' affective experience with their workplace. For example, a 2016 Aflac survey (Aflac, 2016) reported that 60 percent of employees said they would take a job with lower pay but better benefits. Another survey (Ballou, 2018) found that 55 percent of employees said that health insurance was the most important benefit in terms of their job satisfaction. A 2018 survey conducted by America's Health Insurance Plans noted that 56 percent of respondents said that health insurance coverage was a key factor in their decision to stay at their current job, and 46 percent said that health insurance was either the deciding factor or influenced their choice of their current job (Miller, 2018).

Ample evidence shows that health insurance administration is burdensome and health insurance is important. Health insurance is costly to employers, with Starbucks spending more on health care than on coffee (Kowitt, 2010) and the three largest U.S.

automakers spending more on employee health than on steel (e.g., Volsky, 2008). Thus, health insurance would seem to be an excellent setting in which to explore the existence and effects of "sludge."

Notwithstanding the forgoing, studies of the costs of healthcare administration have focused exclusively on the costs imposed on the primary entities in the health system itself, such as doctors, clinics, and hospitals that have to engage in tasks such as obtaining pre-authorizations, billing for services, and collecting monies owed.[2] One recent study reported that billing and insurance-related costs totaled approximately $470 billion in 2012, with 80 percent of these costs coming from the multi-payer system (Jiwani, Himmelstein, Woolhandler, & Kahn, 2014).

Omitted from these discussions and calculations of the administrative burden of health insurance are the direct costs and other psychological effects of the time spent by *employees* to interact with their health insurance carriers. Employees may have to spend time with health insurers to obtain authorizations for care or medicines, understand their benefits, fill in claims forms, and appeal denials of payment and authorizations for services. Employees may need to read descriptions of coverage and ascertain if healthcare providers are in their insurer's network. Employees may spend some of that time while at work,[3] and regardless of where they spend time interacting with health benefits administrators, those interactions could affect employees' attitudes.

The forgoing facts on the importance of health insurance and the existence of a previously unmeasured administrative burden on employees led us to ask two simple but important questions. First, we sought to estimate the economic costs of the time spent by people interacting with their health insurers by investigating what proportion of working adults interacted by phone with their health insurers in the previous week and how much time they spent doing so. In this regard, it is important to note that the American Time Use Survey (U. S. Bureau of Labor Statistics, n.d.), a data source extensively used in research and by far the most comprehensive measurement of how Americans spend their time, does *not* include *any* categories of time use assessing people's interactions with health benefits administrators.

Second, we investigated if, net of other statistical controls including individual demographics and self-

reported health, spending time with health insurers was related to other important, employer-relevant outcomes besides lost time, such as attitudes toward the employer, employee engagement, absence from work, and the experience of burnout and stress.

Employee attitudes have been a focus of study in organizational and industrial psychology for more than 100 years. Employee attitudes are substantively important because extensive research has shown that favorable job attitudes such as job satisfaction and employee engagement predict performance at the individual (e.g., Harrison, Newman, & Roth, 2006; Judge, Thoresen, Bono, & Patton, 2001; Mackay, Allen, & Landis, 2017) and at the organizational unit level (e.g., Harter, Schmidt, & Hayes, 2002; Harter et al., 2010; Whitman, Van Rooy, & Viswesvaran, 2010). For example, positive job attitudes are positively correlated with productivity, profitability, customer perceptions, and quality (e.g., Katzell & Thompson, 2009). Similarly, job attitudes are associated with absenteeism (e.g., Hackett & Guion, 1985; Waters & Roach, 1973), turnover, and other forms of organizational withdrawal, such as retirement (e.g., Hanisch & Hulin, 1990; Lachman & Aranya, 1986; Rubenstein, Eberly, Lee, & Mitchell, 2018), accidents (Nahrgang, Morgeson, & Hoffman, 2011), and shrinkage. Our research sought to ascertain if the time spent on the administrative burdens of interacting with insurers imposed additional costs through its relationship on employee attitudes and behavior, and to estimate, when possible, the financial magnitude of some of these more indirect costs.

DATA AND MEASURES

Gallup, the national polling and research organization, regularly surveys a national panel of households. The Gallup Panel, one of the few research panels that is representative of the entire U.S. adult population, is non-opt-in, and at the time the surveys used in this study were conducted, no incentives were provided for participation. It comprises approximately 100,000 members, all of whom can be reached by phone or mail and about 80 percent of whom can be reached by email to complete a web survey. Gallup selects potential panel members using random digit dialing (RDD) of landline telephones and cellphones or address-based sampling (ABS) to contact U.S. households. Because Gallup selects respondents at random and because all U.S. households have an equal and known probability for selection, the Gallup Panel is a representative sample of all U.S. households. However, because of the requirements for populating a nonpaid panel of this nature, Gallup's panel does skew somewhat older, whiter, and higher income than the general U.S. population. To address this discrepancy, Gallup weights its samples to

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[2] *Why* there has been no consideration of the magnitude or effects of administrative burdens on patients/consumers is itself an interesting research topic, although well outside the scope of the present study.

[3] One author's health benefits administrator has phone hours of 7 a.m. to 7 p.m., Monday through Friday, virtually guaranteeing that telephone time spent on administrative issues will be work time.

correct for unequal selection probability and nonresponse. Gallup maintains detailed demographic profiles of each member, and, subsequently, all datasets were weighted to match the U.S. population according to gender, age, race, Hispanic ethnicity, education, and region. Demographic weighting targets are based on the most recent Current Population Survey figures for the people aged 18 years and older in the U.S. population.

The three surveys from which items were drawn for this study were all administered in 2016 *via* an email invite and conducted by web. Sample sizes ranged from 9,000 to 11,000. In the analyses reported here, once missing data were excluded, the sample for the regressions was about 6,200 people. Response rates to all surveys exceeded 50 percent in all cases, ranging from 53 percent to 76 percent. To put these response rates in context, the company SurveyMonkey noted that "response rates *can be* as high as 20 percent to 30 percent" (Porter, n.d.), and another source (Lindemann, 2019) reported that the average survey response rate is 33 percent.

In 2016, we were able to convince Gallup to add three questions to one of their regularly conducted surveys. The questions asked 1) about the time respondents spent on the phone with their health insurers in the last week *while at work*, 2) the time they spent on the phone with their health insurers in the last week *while at home*, and 3) the type of insurance they had (e.g., self-purchased, Medicare, and provided by their employer or union).

In the Appendix, we present the precise wording of the questions used to collect the data for the variables used in this study, the proportion of respondents who answered in each response category, and the specific survey from which the item was drawn. In virtually every instance except for the engagement scale, which has been widely used and reported (e.g., Harter et al., 2002), the measures were all single items.

As one might expect, the questions asking about time spent with health insurers on the phone in the last week produced highly skewed responses. Approximately 87 percent of the sample reported spending no time, whereas one person reported spending 10 hours on the phone. Responses clustered, as might be expected from recalled data, around even numbers (e.g., 10, 30, 60, and 120 minutes). To avoid eliminating outliers while not having extreme values bias the results, we constructed a 7-point ordinal scale going from 0 for 0 minutes to 6 (2 hours or more). The distribution of time spent by the scale values is reported in the Appendix. People can, of course, spend time interacting with insurers in ways other than on the phone—for example, on members' websites or reading (either online or in print) the various documents health benefits administrators make available to explain elements of plan design. People can and do also deal with health insurance issues by interacting with their company's human resources or benefits department to help resolve problems incurred

in accessing benefits. Therefore, our estimates of time spent on health insurance are undoubtedly conservative, considering all the time and ways people spend interacting with health insurers.

To interact with a health insurer, one must have health insurance, although it could be provided through the government (e.g., Medicare or Medicaid). Approximately 10 percent of our sample was uninsured. As would be expected for a nationally representative sample, this figure is virtually identical to that reported by the U.S. government (Berchik, Barnett, & Upton, 2019) for people who lacked insurance for at least part of the year. Uninsured people are not included in our analyses. The problems of access to health care and the fact of uninsurance in the United States are both well known and widely studied (for instance, see Hoffman & Paradise, 2008, for an extensive review of health services research). Our focus was on the administrative burdens faced by people with insurance, not on the enormous burdens (and mortality—e.g., Wilper, Woolhandler, Lasser, McCormick, Bor, & Himmelstein, 2009) faced by people without health insurance, an obviously important but different research topic.

People's self-reported health will affect their likelihood of spending time with health insurance—the worse someone's health, the more likely they are to interact with the health insurance system. The results of an analysis (not reported here) showed estimated marginal means of the actual time spent on insurance-related administrative tasks (raw minutes, not collapsed into categories) of 4.07 minutes per week among those reporting poor or fair health compared with 1.85 minutes per week among those reporting excellent health ($p < .01$). The mean number of minutes spent among those with poor or fair health is statistically significantly higher ($p < .05$) than the minutes reported spent by respondents in all the other health categories.

Moreover, self-reported health is a widely studied and very important factor affecting people's well-being, including their morbidity (e.g., Millunpalo, Vuon, Oja, Pasanen, & Urponen, 1997), mortality (e.g., Benjamins, Hummer, Eberstein, & Nam, 2004), and happiness (e.g., Subramanian, Kim, & Kawachi, 2005). We used, as is conventional for the extensive literature on self-reported health, a single-item measure. The precise wording and the distribution of responses are displayed in the Appendix. We control for self-reported health in our analyses.

We included demographic variables in our analyses to control for the possibility that time spent on the phone with insurers systematically varied by demographic factors. The demographic control variables included in all of our analyses were age, education, income, gender, marital status (married/living with a partner, single/never married, and separated/divorced/widowed), and race/ethnicity.

RESULTS

Economic Costs of Time Spent

To estimate the cost from insurance-related administrative tasks, respondents were asked: "In the last week, how much time have you spent on the phone with your health insurance provider on administrative issues (claims, asking questions, getting prior approvals, *etc.*) when you were at work?" and also "when you were at home." Of 7,414 full-time workers who answered this question, 13.1 percent reported having spent some time in the prior week on the phone with health benefits administrators, with 8.8 percent reported having spent some time on the phone while at work. Across all respondents, the mean time spent was 2.88 minutes spent while at work, with the total time of 5.48 minutes. As such, 53 percent (2.88/5.48) of all time spent addressing health insurance administrative issues was spent while at work.

Those individuals who reported spending *any* amount of time on the phone with their health insurer—either at home or work—spent 32.57 minutes on average. Most working people are not ill in any given week, so they are not obtaining medical care or medicine and therefore not spending time interacting with their health insurer. However, for those who did need to access their health benefits administrator, they spent on average slightly more than a half hour doing so. This relatively long time is important as it provides a logical rationale for why we might expect to see differences in attitudes between people who spent some and no time interacting with health benefits administrators. These interactions were on average protracted and could readily impose cognitive load on people, distract them from their work, and consequently influence their attitudes toward their workplace and their jobs.

Of $n = 1,224$ part-time workers in our sample, 4.0 percent reported having spent some time on the phone, with an overall mean of 1.10 minutes spent across all respondents while at work and an average of 27.46 minutes spent on the phone by those reporting having spent some amount of time interacting with their health insurers. Fewer part-time employees reported having spent time interacting with benefits administrators because part-time employees are less likely to have health insurance. However, for those part-time workers who did spend time interacting with health benefits administrators, the amount of time spent was also about a half hour, quite similar to the experience of full-time workers and suggesting that resolving any issues with health insurers typically takes about 30 minutes.

Using these data, it is possible to estimate the direct costs of the time spent by workers both at work and outside of work on administrative tasks of health insurance. We modeled our approach after research by

Goetzel, Long, Ozminkowski, Hawkins, Wang, and Lynch (2004), who sought to estimate the costs of physical and mental health conditions. Importantly, Goetzel et al. (2004) estimated total costs and did not try to ascribe what proportion of those costs were borne by employers, the health system, or individuals.

As of December 2019, there were 130.6 million people employed full-time and 27.36 million employed part-time in the United States (Duffin, 2020). Private industry employers spent an average of $34.72 per hour worked for total employee compensation (Bureau of Labor Statistics, 2020a, 2020b). According to research by a Pennsylvania State economics professor, part-time workers are paid 19.8 percent less than their full-time counterparts, so their hourly cost would be $28.19, or 81.2 percent of the amount for full-time employees (Golden, 2020).

Calculating the direct costs of time spent dealing with insurance administration becomes a matter of straightforward arithmetic. For full-time people, $34.72 per hour of employee cost divided by 60 minutes in an hour equals 57.9 cents per minute spent. Part-time employees cost 47.0 cents per minute. Full-time employees spent on average 5.48 minutes on the phone with their insurer, and part-time employees spent on average 3.92 minutes, combining the time spent at home and at work. 130.6 million full-time people spending 5.48 minutes on average per week equals 715.69 million minutes, multiplied by the $0.579 cost per minute equals $414.38 million per week. The 27.3 million part-time workers each spending on average 3.92 minutes per week equals about 107 million minutes per week, multiplied by $0.47 per minute equals $50.42 million per week. $50.42 million plus $414.38 million equals $464.8 million per week for the entire labor force, multiplied by 50 weeks in a year[4] equals $23.24 billion in total costs from the time spent speaking on the phone with health benefits administrators. We then adjusted this number to account for the 9.5 million full-time workers without insurance according to the 2019 Current Population Survey. This number is 7.2 percent of the total workforce of 130.6 million. This adjustment recognizes that people without insurance do not spend time talking to health insurers, although it is quite likely that these individuals may spend time, including time while at work, seeking health care in the absence of coverage or trying to obtain coverage. Nonetheless, $23.24 billion multiplied by .928 equals

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[4] Fifty weeks is often taken to be the standard working year. We note that in the United States, approximately 25 percent of the workforce gets no paid time off, and a substantial fraction of the population does not use its allowed vacation. Therefore, our estimates of direct costs are possibly conservative.

$21.57 billion in the costs of time spent, $11.4 billion (or 53 percent) incurred by employers.

We ask if these time costs are substantively important in the context of a health system that spends multiple billions on administration. Sunstein (2019a: 4) praised the fact that the Transportation Security Administration's Pre-Check program saved about $1 billion in time per year, and noted: "Whenever a specified amount of time is saved by a large population of consumers—say, 200,000 hours—the benefits will not be exactly trivial." The time spent with health insurers is orders of magnitude larger than both the hours saved and the dollar amount. Shrank et al.'s (2019) estimates of waste in the U.S. healthcare system calculated that the failure of care coordination cost upward of $27.2 billion, overtreatment or low-value care cost more than $75 billion, and as already noted, administrative complexity some $265 billion. In the context of total waste in the U.S. healthcare system, the cost of the time spent dealing with benefits administrators is close to the low estimate for the failure of care coordination, about a third the value of overtreatment and low-value care, and is approximately one-tenth the cost of the biggest source of waste, administrative complexity. Moreover, 13 percent of the working population, some 20 million people, reported spending time interacting with their health insurers in just the previous *week.* We would argue that, holding aside the emotional toll on people who have to fight with their health insurer for coverage and payment, the direct cost of time spent and the proportion and absolute number of people spending time are substantively important.

How Time Spent Varies by the Type of Insurance

People reported if they had insurance what type of insurance they had. Table 1 displays the total amount of time spent on the phone with health benefits administrators by the type of insurance.

As is evident from that table, less time was spent on average by people who had insurance through Medicare or through their employer or union. The greatest amount of time was spent by people who had insurance through the military or Veterans Affairs and also by people on Medicaid.

If time spent is in fact a burden that affects both access to services and attitudes toward organizations, these numbers make intuitive sense. Medicare is a universal political benefit, determined solely by age (or by disability before 65 years) that is not means tested and is sometimes called "the third rail" in American politics because of the widespread support it enjoys (e.g., Brodie, Hamel, & Norton, 2015). Employer/union-provided health insurance is a benefit offered to members and employees designed to attract good will from the beneficiaries. By contrast, burdening people who receive public benefits—veterans or the

TABLE 1
Total Time Spent on the Phone with Insurance Administrators by the Type of Insurance

Type of Insurance	Total Time Spent on the Phone at Work (minutes)
Medicare	5.52
Insurance provided by the employer or union	5.54
Medicaid	8.48
Insurance purchased by self on private market	8.99
Veteran's or military health insurance	9.04

poor—or who have already purchased insurance in a very imperfect private health insurance marketplace is a way of "saving" money by creating a barrier for their receiving payment or coverage.

This idea of burdens affecting access was noted by Herd et al. (2013: 569), who argued that process changes that were part of Obamacare reduced individual burdens and "increased take-up of Medicaid" in Wisconsin. This increased use of Medicaid and access to care was precisely the intent of the legislation. Herd and colleagues explicitly argued that shifting administrative burdens off individuals and to the state increased program utilization while maintaining its integrity. In that sense, administrative burdens are a "tool" that can be used to limit access to benefits in an indirect fashion. In the conclusion of this article, we argue that this fact forms the foundation for the development of a theory of administrative burdens in health care and more generally.

Other Effects of Time Spent on Insurance Administration

Interactions with health insurance administrators, as already noted, take about 30 minutes on average in the week they occur, and cover important employee concerns. We therefore decided to investigate if insurance administrivia affected other employee outcomes such as felt stress burnout, job satisfaction, absence, and employee engagement. Obviously, these outcomes would be primarily affected by the proximal work environment—the person's supervisor and peers and the nature of the work itself. But as the surveys contain data on employee attitudes, we sought to determine if the more distal but nonetheless important interactions with insurance administrators had observable effects.

Table 2 presents the means, standard deviations, and the intercorrelations among the variables, both independent and dependent, that we examined. As expected, there are statistically significant correlations among the dependent variables of missing work, engagement, burnout, stress, and satisfaction with one's employer.

Table 3 presents the result of regression equations estimating the effects of time spent while at work on the

phone with health benefits administrators on the dependent variables of burnout, satisfaction with one's employer, employee engagement, the likelihood of missing a day or more of work in the past month, and experiencing stress in the previous day. All estimates control for individual demographics and, importantly, for the effects of self-reported health. We present standardized coefficients to facilitate comparisons about the relative importance of the predictors.

We also investigated whether time spent with health insurance administration affected people's intention to look for a new job. We found no effect at all on this outcome. Moving jobs, even after the passage of the Affordable Care Act, poses a risk of losing healthcare coverage, which reduces voluntary mobility independently of job attitudes.

In four of the five multiple regression equations, time spent with health benefits administrators is statistically significant and in the expected direction. In the other instance, p is $< .12$. Self-reported health is statistically significant in all five instances, in the expected directions.

The effects of time spent with insurance administrators are clearly small, which raises the question of their importance. As Harter et al. (2002: 274) argued, "The research literature includes a great deal of evidence that numerically small or moderate effects often translate into larger practical effects." One way of assessing the importance of time spent is to compare it with another variable that the research literature has anointed as substantively consequential. Each equation displayed in Table 3 includes, as a control variable, self-reported health. As already noted, there is a very large and growing literature attesting to the importance of self-reported health (e.g., Butler, Burkhauser, Mitchell, & Pincus, 1987). The Organisation for Economic Co-operation and Development (OECD) uses self-reported health as a social indicator of a nation's health status (OECD, n.d.), and self-reported health has been extensively studied as a prospective predictor of mortality (e.g., McGee, Liao, Cao, & Cooper, 1999).

In the equation for missed workdays (absenteeism), time spent with insurance administrivia has a standardized coefficient about 64 percent *larger* than the coefficient for self-reported health. In every other case, time spent on the phone with health insurers has a smaller effect than self-reported health, ranging in relative magnitude from 19 percent to 42 percent the size of the effect of self-reported health. On average, across the five dependent variables, time spent with insurance administration has an effect about 55 percent that of self-reported health.

Table 4 presents the differences in outcomes in percentage terms comparing people who spent some time with health benefits administrators with those who spent no time. On average, there is a 24 percent

difference in the responses between people who have had to interact with health insurers and those who have not, a difference we consider to be substantively important. In their debate with Pfeffer (2020) over the importance of pay for performance as a predictor of antidepressant use, Dahl and Pierce (2020) argued for the importance of what is in that case a 5.7 percent difference, reprising, in a different context, Harter et al.'s (2002) argument that small effects can be meaningful.

It is important to note that measures of time spent dealing with health insurance administrative issues and work attitudes were gathered from surveys of the same people *but at different times*, so it is unlikely that these results reflect merely response consistency effects.

Estimating the Economic Cost of Diminished Job Satisfaction

To estimate the costs of reduced job satisfaction, we compared people who spent *some* time talking to their health benefits administrator with the 87 percent who spent *no* time. Table 4 shows that those who spent time with their insurance administrators were 7.2 percentage points (10 percent) less likely to be satisfied with their company as a place to work. If extrapolated to the total working population, this difference in job satisfaction represents a 9.4 million full-time worker difference between those satisfied and not satisfied with their employer.[5]

To estimate the economic costs of this difference in job satisfaction, we used standard utility analysis procedures, which take into account the correlation of global job satisfaction and performance, obtained from Judge et al. (2001). We used a conservative estimate of the standard deviation of the dollar value of productivity and the standard score difference in satisfaction between those who spent time on administrivia and those who did not (e.g., Hunter & Schmidt, 1983).[6] Estimating the economic value of the satisfaction differences showed some $103 billion in productivity

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[5] The 7.8 million workers estimate is derived by multiplying the difference in the proportion of satisfied workers (0.07) by the total number of employees who (pre–COVID-19) worked full-time for an organization (approximately 130.6 million full-time workers aged 18 years or older).

[6] The z score unit change in satisfaction is $z = 0.08$, and a conservative estimate of the standard deviation in the dollar value of productivity is $69,480 average salary of employed workers multiplied by 0.40. The individual-level correlation of satisfaction and performance is 0.35. This correlation (r) multiplied by the standard deviation in dollar value of productivity (27,792), multiplied by the z score (0.08), results in a per-person estimate of $792, which when multiplied by 130.6 million full-time workers in the workforce equals $103.4 billion.

TABLE 2
Correlation Matrix

	Mean	Standard Deviation	Job Satisfaction	Employee Engagement	Missed Workdays	Stress	Burnout	Age	Race (White)	Gender (Male)	Education	Income	Married	Blue Collar	White Collar	Self-Reported Health
Job satisfaction	3.89	1.00	—													
Engagement	3.76	0.78	.68[a]	—												
Missed workdays	0.55	2.40	-.06[a]	-.05[b]	—											
Stress	2.76	1.29	-.26[a]	-.17[a]	.04[b]	—										
Burnout	3.11	0.95	-.42[a]	-.35[a]	.08[a]	.34[a]	—									
Age	48.6	13.9	.14[a]	.01	-.02	-.13[a]	-.16[a]	—								
Race: white (dummy)	0.85	0.36	.04[b]	.05[a]	.03[c]	.03[d]	.02	.02	—							
Gender: male (dummy)	0.54	0.50	-.03[d]	-.06[a]	-.01	-.01	-.02	-.04[b]	.03[c]	—						
Education (no of years)	15.18	3.11	-.01	.12[a]	-.01	.06[a]	-.06[a]	-.12[a]	-.15[a]	-.09[a]	—					
Income ($)	$57,707	$51,996	.02	.01	-.02	.03[d]	-.05[a]	.06[a]	.02[d]	.01	.12[a]	—				
Married (dummy)	0.62	0.48	.09[a]	.08[a]	-.02	-.06[a]	-.06[a]	.15[a]	.08[a]	.13[a]	.01	.05[a]	—			
Blue collar (dummy)	0.49	0.50	.04[b]	.08[a]	.01	.01	-.02[a]	.00	-.03[c]	-.15[a]	.22[a]	.02[d]	-.02[d]	—		
White collar (dummy)	0.13	0.34	-.05[b]	-.1[a]	-.01	.03[c]	.06[a]	.06[a]	.07[a]	.20[a]	-.20[a]	-.02[d]	.03[c]	.38[a]	—	
Self-reported health	3.33	0.91	.12[a]	.15[a]	-.08[a]	-.11[a]	-.18[a]	.04[b]	.04[b]	-.02	.14[a]	.07[a]	.04[b]	.04[b]	-.05[a]	—
Total time spent on ins.	5.68	25.40	-.04[b]	-.02	.12[a]	.05[a]	.05[b]	.04[b]	.01	.01	.05[a]	.03[c]	.07[a]	.02	-.01	-.06[a]

[a] $p < .001$
[b] $p < .01$
[c] $p < .05$
[d] $p < .10$

TABLE 3
Multiple Regression Equations Predicting Various Outcomes (Standardized Coefficients, $n = 6{,}277$)

	Satisfaction	Engagement	Missed Workdays	Stress	Burnout
Age	.12[a]	0.01	−0.01	−.13[b]	−.15[a]
White	.03[c]	.05[b]	.04[b]	.04[c]	.03[c]
Male	−0.02	−.04[b]	0.01	−0.02	−.04[b]
Education	−0.01	.07[a]	−0.01	.06[a]	−.05[b]
Income	−0.02	−0.01	−0.02	.04[b]	−.03[c]
Married	.07[a]	.07[b]	−.03[d]	−.05[b]	.03[c]
Blue collar	0.02	.03[d]	0.01	0.01	0.01
White collar	−.04[c]	−.06[b]	−0.02	.06[a]	−.06[b]
Health	.18[a]	.12[a]	−.09[b]	−.12[a]	−.16[a]
Time spent on ins.	−.03[c]	−.02[e]	.13[b]	.05[b]	.04[b]
R^2	0.04	0.04	0.06	0.04	0.06

[a] $<.01$
[b] $<.01$
[c] $<.05$
[d] $<.10$
[e] $<.12$

value, which we then reduced by 7.2 percent to account for workers without insurance to $95.6 billion. Satisfaction and engagement at work are positively correlated with productivity, profitability, customer perceptions, and quality, and negatively correlated with absenteeism, turnover, accidents, and shrinkage (Harter, Schmidt, Agrawal, Plowman, & Blue, 2016).

The Cost of Absence

Another analysis quantifying the economic impact of insurance administrivia can be performed by estimating the cost of the lost workdays (absenteeism) difference between the people who spent time talking to health insurers and those who did not. The 130.6 million full-time workers who are 5.6 percent more likely to be absent equals 7.31 million additional days of absence per month, multiplied by $277.76 per day ($34.72 per hour times 8 hours per day) equals $2.03 billion per month. 27.3 million part-time employees absent an additional 5.6 percent equals an additional 1.53 million days of absence per month, multiplied by $225.58 per day equals $344.89 million in additional monthly absence costs. The additional cost of missed days is then approximately $28.5 billion annually, which, when adjusted for the proportion of uninsured, becomes $26.4 billion. Of course, when workers are absent, their absence may affect the work of others. Furthermore, our estimate considers only 1 day of excess absence for the extra absences, and some people missed even more than one day.

GENERAL DISCUSSION

Prior research has estimated the direct costs of administration in the health system in the United States but has yet to consider the cost of the time spent by employees, most of which they spend while at work, dealing with their health insurers. Research has not considered the relationship between insurance administrative hassles and employee attitudes and behaviors such as missing work or feeling stressed or burned out.

We estimated that the total direct cost of workers' time spent with insurance administration was $21.6 billion. Possibly even more importantly, we found that the more time employees spent on the phone with insurance administrators, the more likely they were to miss a day of work, to be burned out, to be less engaged, and to report feeling stress at work. The cost of lost workdays was about $26.4 billion and the effect of lower job satisfaction we estimated to be more than $95.6 billion. Those indirect costs, totaling more than $100 billion, are substantially larger than the direct costs of time spent with insurance administration. The fact that the indirect costs of absence and reduced job satisfaction are much larger than the direct costs of lost time is not surprising. For instance, studies of the effects of ill-health and workplace stress also have consistently found that the economic costs of presenteeism, an increasingly important construct in the management literature (Johns, 2011), are larger than the cost of healthcare claims (e.g., Goetzel et al., 2004).

Limitations

We acknowledge several limitations in this study that future research should seek to address. The first and most important concern is that because our data were cross-sectional, inferring causality is inherently problematic. It seems reasonable to presume that there may be bidirectional causality. For

TABLE 4
Other Effects of Spending Time on Health Insurance Administrative Tasks while at Work[a]

Outcome	No Time Spent ($n = 6,556$) (%)	Some Time Spent ($n = 631$) (%)	Percentage Point Difference	PCT. Change (%)
Satisfaction with current workplace (% 4 or 5)	71.7	64.5	−7.2[b]	10
"Engaged" at work (based on Gallup's Q[12] engagement)	32.0	27.4	4.6[c]	14
Significant stress experienced previous day (% 4 or 5)	28.4	32.4	4.0[c]	14
At least one missed work day in prior 4 weeks from physical or mental health (%1 or more missed days)	15.8	21.4	5.6[b]	35
Feel burned out at work (% always or very often)	20.6	30.8	10.2[b]	49

[a] Controlling for age, gender, education, income, race/ethnicity, marital status, and self-reported health.
[b] Statistically significantly different at $p < .05$.
[c] Statistically significantly different at $p < .10$.

instance, disengaged, dissatisfied, and stressed people may be more likely to access health benefits while at work because they are less concerned about their employer's well-being. At the same time, having to spend more time coping with health insurance hassles could easily lead to greater stress, burnout, and disengagement. Using longitudinal data or other study designs to better assess causality is important to ascertain the extent to which administrative hassles are actually influencing employee attitudes and behaviors.

Second, the Gallup survey questions only measured the time employees spent *on the phone* dealing with benefits administrators. Employees may also interact with their health insurers—and spend time doing so—through websites or by reading printed materials as well as by telephone. Employees may also interact with benefits staff inside their companies when they are facing health insurance issues. It would be useful to extend the measurement of time spent, and its consequences, to incorporate all the ways in which employees can interact with benefits providers and others around accessing health benefits.

Third, with the exception of engagement, our dependent variables were all single-item measures of the constructs. Although Wanous, Reichers, and Hudy (1997) reported acceptable reliability for single-item measures of job satisfaction, in general, single items are considered to be less reliable than scales. The use of single-item measures may be one contributing factor the small effect sizes. Because more measurement error would make observed effects weaker, this imprecision would reduce the likelihood of observing statistically significant results compared with measures obtained with more precision (e.g., Charter, 1997). The trade-off for using these items is that they were part of a well-constructed, nationally representative sample.

A fourth limitation is the relatively small, albeit statistically significant, effects of time spent. It is possible that effect sizes would be larger if the measure of time spent was more inclusive of the other ways besides the phone through which people engage with benefits administrators. It is also possible that the effects of time spent depend to some degree on what actually happens during the call—whether or not issues are resolved to the satisfaction of the employee. One possible direction for future research is to measure the outcomes of interactions, not only the time spent on them.

Managerial and Policy Implications

It is possible that one reason why administrative burdens are as large as they are is that the costs are largely invisible to organizational leaders. Therefore, the most important and straightforward managerial implication of this study is that clients should choose benefits administrators in part on their ability to *minimize* the time workers have to spend dealing with them, because that time exacts both direct and indirect costs and may burden the internal human resource staff as well.

To permit companies to optimize on the dimension of the time spent by employees, policy could require health benefits administrators to report on applicable metrics. Every benefits administrator knows, or could know, what percent of their clients spend time on administrative issues in any given time period (e.g., a week, a month, and each year), and how much time they spend either on the phone, on websites, or on both dealing with health benefits questions. Benefits administrators could, if they chose, do surveys of employee experiences with these service providers. It would be completely feasible to report these figures, which would then permit companies to estimate the administrative costs (by multiplying the time spent by the average salary of the workforce spending that time) and to choose benefits administrators considering this information as well as other factors such as the quality of the employee experience. And even if such reporting is not mandated by public policy, employers could request such information from those who administer or seek to administer their health benefits.

Implications for Additional Research

One possibly important effect of health insurance administrative burdens is their effect on people's ability to access health care. There has been sustained interest in how *cost* affects access to medical care (e.g., Nelson, Thompson, Bland, & Rubinson, 1999), even for people with health insurance. Since 2001, the Gallup organization has each November asked Americans if they have put off any sort of medical treatment for themselves or their families (Riffkin, 2014). The Kaiser Family Foundation has also systematically studied the effects of healthcare costs on people filling prescriptions or accessing care. A recent report (Kirzinger, Munana, Wu, & Brodie, 2019) noted that "half of U.S. adults say they or a family member put off or skipped some sort of health care or dental care or relied on an alternative treatment in the past year because of cost."

Health insurance administrative burdens may also constitute a significant barrier to accessing care, as it requires at a minimum some investment of employee time and possibly employee persistence and skill to obtain benefits. Without additional study, we will not know the extent to which administrative sludge in the healthcare system constitutes another barrier to accessing health care, nor will we know precisely where and how those burdens fall on different demographic groups, or how large they are. It is both feasible and desirable to expand the study of the burdens to accessing care to consider the effect of administrative burdens as well as costs.

As already noted, the study of the effects of sludge in health benefits administration could profitably expand from a focus just on time spent to consider how the content and quality of the interactions affect employee attitudes and behaviors.

Toward a Theory of Administrative Sludge in the Private Sector

In many domains such as tuition reimbursement, childcare subsidies, family and medical leave, as well as health benefits, employers offer benefits but confront employees with varying degrees of administrative hassles, including applications and other forms of paperwork including documentation, to access those benefits. It is almost as if employers want to offer benefits to attract workers but make accessing those benefits difficult enough to reduce their costs. This argument precisely parallels that made for public sector benefits, where the idea that sludge is intentional implies that there are barriers consciously erected to restrict access.

Several hypotheses derive from this logic. First, administrative burdens should be greatest in terms of time spent and other barriers to access for those benefits that are the most expensive and are used by the highest proportion of employees. Second, because benefits are particularly relevant in attracting employees, burdens would be expected to be largely invisible to recruits. Few—maybe no—descriptions of benefits describe how difficult it may be to actually claim the proffered benefit. Third, to the extent that burdens do restrict access, one would expect to see administrivia fluctuate to some extent, albeit with a lag, with the economic cycle. In tough financial times, rather than reduce benefits, employers can simply make the time and effort required to access them more difficult as a way of reducing costs.

Benefits constitute a large fraction of organizational wage costs and are designed to attract and retain talent. What the present study suggests, both in the domain of health administration and possibly more broadly, is that small—and presumably readily addressed—irritants may, in fact, not be so trivial in their consequences for employee attitudes. Simply put, sludge matters, and could be productively studied in organizational domains besides health administration. But to build a theory of sludge or administrative burdens, we will need much more and better data on the existence and extent of sludge and its consequences.

CONCLUSION

Although this study used a nationally representative sample and measures that have been used in numerous other investigations of employee attitudes and performance, it is nevertheless important that these results be replicated and extended. Studies of benefits need to incorporate the effects of benefits *administration*, not just benefits *levels* or their existence, on employee attitudes toward their employer. Studies of health insurance and its effects on access to and the cost of health care should incorporate the effects of administrative hassles on both of those outcomes. Most importantly, studies of "sludge" and its effects could profitably expand to consider the effects of sludge in the private, not just governmental sector, with health administration being just one important potential domain for investigation. Benefits are economically significant and, as such, worthy of much more research attention.

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APPENDIX

Measures Used in Study

(Health Experiences Survey, May 2016, *n* = 10,541) In the last week, how much time on the phone did you spend with your health insurer on administrative issues (while at work and while not at work). Total (minutes):

No time	86.9%
1–5 minutes	1.2
5–10	1.8
11–30	5.7
31–60	2.4
61–120	
1.4	
>121	0.6

(Workforce Survey, January 2016, *n* = 12,461) How satisfied are you with your place of employment as a place to work?

1. Extremely dissatisfied	2.4%
2.	7.0
3.	20.2
4.	39.6
5. Extremely satisfied	30.7

(Workplace Stressors, July 2016, *n* = 10,057) Please indicate how often each of the following is true of your job. If you have more than one job, please think about your primary job—the one where you spend the most time working. **You feel burned out at work** (recoded so that higher numbers reflected being burned out more often).

Always	5.7%
4. Very often	17.1
3. Sometimes	44.0
2. Rarely	27.0
1. Never	6.3

(Workforce Survey, January 2016, *n* = 12,461) Again, please think about your most recent workday. Think about what you did from the beginning of the workday to the end of the workday, who you were with, and your experience that day. Please indicate your level of agreement with each of the following items about your workplace. **You felt stress during a lot of the day**.

1. Strongly disagree	20.4%
2.	25.2
3.	24.4
4.	18.1
5. Strongly agree	11.9

(Health Experiences Survey, May 2016, *n* = 10,541) Would you say your own health, in general is:

Poor	1.6%
Fair	15.8
Good	29.6
Very good	33.7
Excellent	9.3

(Workforce Survey, January 2016, *n* = 12,461) Gallup's **Employee Engagement** scale (Harter et al., 2016) is based on 12 questions examining critical psychological needs in the workplace and has been extensively used and validated.

(Workforce Survey, January 2016, *n* = 12,461) In the past 4 weeks (28 days), how many days did you miss an entire workday because of problems with your physical or mental health.

0	82.1%
1	9.1
2	4.2
3 or more	4.6

Married	62.4%
Male	54.2%
White	84.8%

Education	
10 years or less	0.7%
12	29.6
13	3.8
14	24.5
16	16.2
20 or more	25.2

Income Distribution (Mid-point of Range)	
$12,500 or less	20.9%
15,000	0.4
17,500	14
20,000	1.6
30,000	5.8
42,500	10.7
62,500	18.3
87,500	19.5
2000,000 or more	8.7