The Effect of Mandatory Insurer Reporting on Settlement Delay

Paul Heaton

RAND Justice, Infrastructure, and Environment/Institute for Civil Justice

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Paul Heaton
University of Pennsylvania
RAND

August 2017

Abstract: To improve their fiscal position, Medicare and some state Medicaid programs have recently taken steps to mandate reporting of personal injury awards and thus facilitate subrogation against such awards. Participants in the tort system have argued these additional reporting requirements might delay settlement of claims, generating welfare losses for both plaintiffs and defendants. This paper examines this problem empirically, using a rich, national dataset of closed automobile bodily injury claims. Using a differences-in-differences research design that exploits the introduction of a new Medicare reporting requirement in 2011, it demonstrates that mandated reporting increased time to settlement by 12%, or an average of 36 days. Conservative calculations suggest such delays could generate hundreds of millions of dollars in waiting costs each year. Policymakers should be aware of and seek to avoid such costs as they assess whether and how to expand reporting of personal injury awards.

I. Introduction

Policymakers have expressed alarm regarding large and growing expenditures on health care by federal and state government. In 2000, federal Medicare outlays accounted for 1.8% of US GDP, while Medicaid and related state programs consumed 1.3% of GDP (Congressional Budget Office [CBO] 2016). By 2015, these shares had risen to 3.1% for Medicare and 2.2% for Medicaid, a combined increase of 70%. CBO projections suggest that if current policies continue, Medicare and Medicaid expenditures will collectively account for over 8% of GDP by 2040. Recognizing that such cost growth is unsustainable, Democrats and Republicans alike have introduced proposals designed to address the looming fiscal challenges facing both programs. Included among these are various efforts that attempt to offset these programs' costs from other sources, and in recent years the tort system has become a favored target.

When bodily injuries occur due to negligent actions by others, injured parties can seek compensation for their losses from responsible parties through the tort system. This system is overlaid on top of the traditional health insurance system that provides coverage for medical care largely without regard for the underlying cause or fault associated with a particular medical condition. Interactions between the two systems are governed by statutes, regulations, case law, and norms that determine who pays first, what levels of compensation are provided, and what subrogation rights exist. Although government insurers have long been designated as payers of last resort, traditionally they have nonetheless borne the cost of considerable portion of medical care ultimately compensated through the tort system, due to practical barriers in pursuing recovery from tortfeasors or their payees. However, recent legislative and regulatory changes have sought to strengthen the ability of both Medicare and Medicaid to obtain information about tort awards and obtain recoveries from these awards.

A key component of reform involves efforts to mandate reporting of bodily injury awards to government insurers. Such reporting would allow government insurers to identify care episodes subject to recovery and issue demands for payment. While such reporting systems clearly promote the fiscal interests of Medicare and Medicaid, they also carry potential for generating other, conceivably more far-

reaching impacts on the civil justice system. By requiring additional data collection for all cases, and, for at least some cases, injecting an additional party into settlements, reporting can complicate the negotiation process, delaying the final resolution of cases and increasing administrative cost. Moreover, plaintiff advocates have highlighted the possibility that enhanced recovery by Medicare or Medicaid might render some previously viable claims non-economical for plaintiffs to pursue, altering the pool of claims in the system and reducing access to justice. While such impacts are plausible in theory and have been noted by many commentators on this issue[1], to date there has been virtually no empirical evidence demonstrating whether or to what degree such effects occur in actual practice.

In this paper, I provide one of the first large-scale analyses of the effects of a new reporting requirement on time to claim resolution, one key outcome thought to be affected by such reforms. Time to claim resolution is of particular interest because delay in resolving claims represents a pure welfare loss. Recovery and subrogation primarily involve a transfer from claimants, insurers and policyholders, and their representatives to Medicare or Medicaid; the appropriate degree of such transfers is largely a normative question about which different stakeholders may disagree. However, other factors being equal, all parties in the system would prefer less delay in resolving cases, as delay increases administrative costs for all parties, increases reserving costs for insurers, and reduces the value of settlements for claimants and Medicare and Medicaid due to time preference. Thus, to the extent that introducing a new reporting and recovery process affects delay, these costs must be weighed against the benefits of allocating losses more closely in line with the intended priority rules making Medicare and Medicaid payers of last resort.

To assess the impact of new mandatory reporting and recovery requirements, I exploit a Medicare reform enacted at the end of 2007 and implemented in 2011 that for the first time obligated insurers to report personal injury awards involving Medicare beneficiaries to the federal government. Focusing on auto injury claims--a large and economically important subset of the overall tort personal injury space—I measure the impacts of the reform by leveraging a rich, national dataset covering thousands of individual

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[1] See, for example, American Association for Justice (2011), American Bar Association (2015), Jordan (2017), and Medicare Advisory Recovery Coalition (2017).

personal injury awards. Using a differences-in-differences (DD) research design that contrasts claim resolution times for claimants above and below 65 years of age before and after the reform was implemented, and which also controls for a rich set of claimant and injury characteristics likely to affect claim latency, I demonstrate that the new reporting requirement is associated with a 12% increase in time to claim resolution, or a bit over one month delay for the average claim. This estimate is likely conservative, and survives across a number of robustness checks. Simple and conservative back-of-the-envelope calculations suggest that mandatory reporting can generate tens or even hundreds of millions of dollars of delay costs each year. Policymakers should be aware of such delay costs as they consider whether to further expand recovery efforts to Medicaid and other government insurance programs.

The paper proceeds as follows. Section II outlines the difficulties that have historically limited Medicare and Medicaid's ability to pursue recovery form tort awards, and briefly discusses some of the key reforms introduced by Congress and regulatory agencies in an effort to address these problems. Recent developments described in this section suggest that mandatory reporting to facilitate recovery against tort awards is likely to become more widespread in the future, highlighting the need for empirical research on the effects of such requirements. Section III describes the data and DD research design and its underlying assumptions. Section IV presents results from the main analysis relating mandatory reporting to case resolution time along with a series of robustness checks and two falsification tests designed to examine the validity of one of the key assumptions of the research design. Section V discusses the implications of these findings for potential future efforts to mandate reporting.

II. Background and Prior Research

By statute, Medicare and Medicaid have long been designated as payers of last resort is many situations[2], bearing responsibility for reimbursing providers for medical care only once other sources of payment beyond the patient have been exhausted. However, a number of practical obstacles have historically

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[2] See, for example, §116 of Public Law 97-248, the Tax Equity and Fiscal Responsibility Act of 1982 (Medicare) and §1902(a)(25) of Public Law 74–271, The Social Security Act (Medicaid).

limited the ability of these programs to collect payments made for medical care incident to a personal injury. A key difficulty arises due to the timing of tort awards relative to the billing cycle.

Following an injury, an injured party will seek medical care, and at the time the care is received, it is not yet clear whether a tort recovery will be available, what care it might cover, and how much will be available from any award to compensate for medical care. Providers, accustomed to fact that Medicaid and Medicare are the presumptive payers in almost all other episodes of medical care and anxious to receive payments for their services, will often bill the health insurers using their usual processes and receive payment. Months or years after payment has been received, when a tort settlement is reached, Medicare and Medicaid in theory could seek recovery for their prior payments, which would allow them to shift the cost of the care from the Medicare trust fund and taxpayers to the tortfeasor.

However, as a practical matter, seeking such recovery was difficult historically for two reasons. First, Medicare and Medicaid had no easy way to ascertain whether a tort award was made in a particular case. Because there is substantial variability from patient to patient in the amount of time it takes to reach a settlement following an injury, there was no set time frame within which Medicare and Medicaid might expect to observe a tort recovery had occurred, and there is little in patient or billing records that might indicate whether a particular care episode is likely to be covered by tort. Moreover, even for patients for whom there is a high likelihood of a tort award (e.g. a patient presenting with an auto crash injury), some fraction will ultimately end up not receiving any award. Thus, Medicare and Medicaid had little ability to identify those cases where a tort award was available from which it might seek recovery.

A second obstacle relates to determining which parts of the settlement should be available to Medicare and Medicaid as compensation. While it is not uncommon for injured parties in personal injury cases to itemize various losses (e.g. lost wages, medical care, pain and suffering) as they present demands for compensation to tortfeasors and their insurers, when a settlement is reached, it is often done so without apportioning its final value into components of economic and non-economic loss. To take a simple example, in an injury involving a Medicare beneficiary with claimed losses of $50,000 for medical care and $50,000 for pain and suffering, where the ultimate settlement after attorney's fees is $60,000,

absent other information it would appear uncertain whether $50,000, $30,000, or some other amount would be available to Medicare to help it recover its outlays associated with the injury. Because of this ambiguity, Medicare and Medicaid were poorly positioned to know how much recovery might be available to them in a given situation, and therefore which claims might deserve priority and which might be inefficient to pursue.

In the Medicaid context, two U.S. Supreme Court decisions related to this second problem served to further dampen incentives to pursue recovery. In *Arkansas Dept. of Health and Human Servs. v. Ahlborn* 547 U.S. 268 (2006), the Court ruled that Medicaid's recovery rights were limited to only the portion of the settlement that represents medical care, which in particular case presented before the Court reduced Medicaid's entitlement to about 1/6 of the amount asserted by the state. Later, in *Wos v E.M.A.* 568 US ___ (2013), the Court invalidated a state statute that set the amount of Medicaid recovery at 1/3 of the tort award, reasoning that such a rule would run afoul of the federal Medicaid law's prohibition against states filing liens against personal property of Medicaid recipients to recover their costs for the program. Together, the rulings signaled some hostility in the courts to efforts to expand Medicaid's ability to recovery against personal injury awards.

a. The Medicare Reporting System

In the early 1980's, Congress passed legislation designed to compel plaintiffs and defendants to consider Medicare's interests during settlement negotiations by granting Medicare a right of recovery against either party in the event of a resolution that did not adequately address its statutory position as a secondary payer, with scope for additional damages in the event of non-compliance.[3] This legislation and the resultant requirement are commonly referred to as Medicare Secondary Payer (MSP). However, Medicare was poorly positioned to enforce its rights due to its inability to identify cases where personal injury awards had been issued. To address that problem, Congress enacted Public Law 110–173, The

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[3] 42 U.S.C. §1395y

Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA), which established a reporting system designed to enabled Medicare to track beneficiaries who had received personal injury award payments.

Under the new law, liability insurers were required to report information about bodily injury award payments made to any individual who was a Medicare beneficiary, with substantial penalties for omissions or non-compliance. As a practical matter, this meant that insurers needed to query Medicare to determine beneficiary status of anyone who filed a tort claim, and then, for those who were beneficiaries, ensure in consultation with the claimant's attorney that Medicare's interests could be satisfied prior to the finalization of a settlement, so as to foreclose the possibility that, after receiving the mandated report, Medicare might seek additional unforeseen payments and penalties from either party. The new law thus both initiated a reporting process and triggered a heightened effort to involve Medicare in the settlement of liability claims.

Implementation of the new law was not without difficulty. After its passage, insurers and plaintiff attorneys reported difficulties in getting information from the Centers for Medicare and Medicaid Services (CMS) needed to resolve claims, and there were substantial problems with the IT and other systems CMS established to handle queries and reporting.[4] As a result of these difficulties, the original implementation date for mandatory reporting by liability insurers was moved back from July 2009 to January 2011 for no-fault insurers and January 2012 for liability insurers, and Congress enacted additional legislation in 2012 to improve the process[5].

CMS reported recovering $6 billion through MSP in 2006, which rose to $8 billion by 2012 (Kirchoff 2014). Thus, the new reporting requirements appear to have had the intended effect of increasing Medicare's recovery from third-party payers. Less well understood is how these provisions may have affected settlement times or other legal outcomes of interest, the issue explored in this paper.

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[4] See, for example, Government Accountability Office (2012) and Kirchoff (2014).
[5] For example, in response to empirical evidence demonstrating that there were likely to be some claims for which the costs of reporting exceeded Medicare's recovery (Helland and Kipperman 2012), Congress and CMS ultimately established a *de minimis* threshold below which reporting was not required.

b. Is Medicaid the Next Wave?

One reason the Medicare reforms hold relevance for future policy is that the success of the reporting requirements has prompted policymakers to consider expanding reporting to other government insurance programs, most notably Medicaid. In response to the *Wos v. E.M.A.* decision, Congress included a provision in §202 of Public Law 113–67, the Bipartisan Budget Act of 2013, that grants Medicaid recovery rights against the entire settlement in a personal injury case, removing the Supreme Court's restriction that Medicaid access only that portion of the settlement designated for medical care. This provision, which is currently scheduled to enter effect in October 2017, should substantially increase the dollars available to state Medicaid programs through third-party recovery efforts.

Because Medicaid is largely administered by states rather than the federal government, a blanket reporting requirement such as that that was introduced for Medicare is infeasible. Nevertheless, some individual states have begun pursuing reporting systems and requirements patterned after the Medicare system. In 2012, for example, Rhode Island mandated liability insurer reporting through a newly developed Medical Assistance Intercept System (MAIS)[6], allowing it to subrogate against injury awards made to state Medicaid beneficiaries. As of 2016, the state reported collections of $3.2 million due to the new reporting program. In 2015, the National Conference of Insurance Legislators (NCOIL) also adopted and began promulgating a model state law establishing a mandatory Medicaid reporting[7], and legislation patterned after the model law has been proposed in some states.

c. Should we expect reporting to affect speed of claim resolution?

The introduction of new reporting requirements, as occurred for Medicare and as seems to be beginning for Medicaid, introduces several new elements to claim process that might affect the time needed to resolve a claim. First, insurers must query the government insurer to determine whether a claimant in their system is a beneficiary and therefore potentially subject to subrogation. While at first

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[6] https://ri-mais.com/index.html
[7] See http://ncoil.org/wp-content/uploads/2016/04/MedicaidInterceptionModelamended.pdf

glance it may seem that the use of an electronic querying system should allow such queries to occur nearly instantaneously--and therefore not contribute to delay—all querying systems require the ability to uniquely identify and match individuals, which, in the U.S. context, means collecting unique identifying information such as a Social Security Number (SSN), which traditionally would not be required to settle a claim. In other words, the query process itself requires compiling additional information from the claimant which may take some time to collect.

For those claimants who are government health insurance beneficiaries, the health insurer must then examine billing records in its possession in an effort to identify care episodes that were related to the bodily injury in question, and then indicate its intention to request reimbursement from the parties for that care. A challenge here is that medical billing systems often do not capture the information necessary to determine whether a particular care episode arose due to a tort or for some other reason, and the government insurer has incentives to be expansive in its requests for reimbursement. Following the initial demand, the governmental insurer and liability insurer must undertake a reconciliation process to determine which episodes of care are subject to subrogation, and doing so may require multiple additional requests for information to the claimant and her health care providers. Moreover, once the parties have determined which care episodes are subject to subrogation, there is still scope for negotiation over the appropriate reimbursement rates, with the claimant facing incentives to minimize subrogation payments in order maximize her take-home award, and the government insurers facing opposite incentive to maximize their recovery by depleting the settlement. Once the liability insurer and claimant have determined what portion of the settlement will be paid to the government insurer, then they are in a position to negotiate a final settlement. Each of these steps in the process can further delay settlement.

While there are clear reasons to imagine that the introduction of reporting and subrogation requirements could delay the resolution of claims, to date there has been virtually no empirical work documenting the existence of or magnitude of such effects. To my knowledge there is a single existing study that attempts to measure the effects of Medicare reporting on settlement delay. Using a DD research design that also leverages the introduction of the new reporting requirement, Helland and Klick (2015)

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find that reporting increases the time to case resolution in auto injury cases by nearly a year. An important limitation of that study is its use of data from only a single large insurer; this study expands upon that research in that it includes larger and more nationally representative set of insurers. Additionally, due to data limitations, the unaffected control group in the Helland and Klick study constitutes less than 1% of the overall sample; in the present study there are substantial numbers of claimants not subject to the reporting requirement who can provide a clear counterfactual for what might have happened to the Medicare patients post-2011 had no reporting requirement been in place.

III. Data and Empirical Approach

Analyzing the effects of mandatory reporting requires access to data that includes otherwise similar personal injury claims, some of which were and were not subject to a reporting requirement. My data are drawn from the Insurance Research Council's 2007 and 2012 Closed Claim databases. These databases include abstracted information from a sample of auto liability claims closed in the given year from all 50 states and the District of Columbia; participating insurers comprise more than half of the U.S. personal passenger automobile market, and therefore these data are likely broadly representative of auto tort claims in the U.S. For each claim, we observe the date the claim was filed and the date of final resolution (which can be used to construct the time to resolution), claimant demographic information, information about the nature and severity of the accident, claimed injuries and other financial losses, medical treatment received, and the total claimed loss. We also observe the final claim payment amount.[8]

For the bulk of the analysis, I focus attention on claimants aged 50 and over filing bodily injury claims. Because this is a closed claim sample, there is no censoring of claim times, moreover, because the payment date rather than the claim initiation date is the operative date for triggering the reporting requirements, we know that claims closed in 2007 were not subject to the Medicare reporting requirements, whereas those in 2012 were. For the 2012 claims, because claims would have been

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[8] In this paper's discussion I refer to claim resolution generically as "settlement", as the vast majority of claims settle, but the data and my analysis also include claims that go to trial.

reportable to Medicare under the new requirements, participants were incentivized to query Medicare in advance to determine whether claimants were beneficiaries and, if so, to attempt to establish the amounts of conditional payments that would need to be reimbursed to Medicare prior to settling the claim. In the case of claimants over 65, the vast majority were beneficiaries and would need to undergo the reconciliation process or risk settling a claim but then needing to reimburse Medicare for its conditional payments separately, either in addition to the full claim payment on the insurer side, or by paying out of the settlement for the claimant.

To measure the effects of the reporting requirement, I exploit the timing of the introduction of the requirement coupled with the fact that Medicare is targeted primarily to seniors aged 65 and over. I adopt a DD research design that contrasts claim resolution time for individuals above and below age 65, before and after the introduction of the new reporting requirement. In particular, I estimate regressions of the following form:

$$SettlementTime_i = \alpha \cdot (Age_i{>}65 \times Post\text{-}2011_i) + \beta_1 \cdot Age + \beta_2 \cdot ClaimYear + \beta_3 \cdot X_i$$

where $SettlementTime_i$ represents the time in days required to settle the claim filed by individual i, $Age_i{>}65 \times Post\text{-}2011_i$ is an interaction term equal to 1 for individuals ages 65 and older with claims closed in 2012, Age represents a vector of claimant age fixed effects, $ClaimYear$ is a dummy variable for a claim closed in 2012 (as opposed to 2007), and X_i a vector of additional controls measured at the individual level. In this regression, α yields the DD estimate of the effect of reporting and subrogation on case resolution time. Given the long right tail for case settlement times, in most specifications I implement this equation using log settlement time as the outcome.

Table 1 reports summary statistics capturing average outcomes for the overall sample and those who were and were not affected by the new reporting requirement as defined above. As expected, the reporting sample is older and less likely to be employed. Accident characteristics are roughly comparable across the two groups, and the groups also claim fairly similar composition of injuries and post-accident

patterns of disability. Those subject to mandatory reporting utilize slightly less medical care, and their claims take slightly longer to resolve on average.

The rich information available regarding each claim permits us to control for a range of factors likely to impact the complexity of the claim, including the demographics of the claimant, accident characteristics (e.g. location, number of vehicles, impact severity), nature and severity of injury (45 variables), types and amounts of medical care received (38 variables), and liability characteristics (e.g. policy limits, degree of fault of insurer, attorney involvement). Conceptually, this means that we are able to compare two claimants involved in similar accidents, with similar injuries and medical treatment, facing legally comparable claims, but who differ in whether or not their claim must undergo the reporting and subrogation process. While my primary outcome of interest is time to claim resolution, I also estimate versions of the regression specification above where I use the payment amount or number of claims as the outcome.

Characteristics of state tort law, such as whether the state is a no-fault state, rules governing bad faith claims, and contingency fee rules are also likely to affect the claims resolution process. Because the identification strategy relies on contrasts across age groups, I can include in the regressions as additional controls a full set of state by year of injury fixed effects. These controls mitigate any potential omitted variable bias from state-specific factors that change over time, including features of tort law along with any other laws and regulations related to general medical care or vehicle safety. The main underlying assumption of the DD analysis is that, after adjusting for underlying claim characteristics, the claims involving individuals ages 50-64 provide an appropriate counterfactual for what claim resolution times for the older group would have been, absent the new reporting requirement.

These estimates of effects of reporting and subrogation on delay are likely to be conservative for two reasons. First, as noted previously, a new reporting requirement affects all future claims in that they must, at a minimum, have claimant information entered into a query system to establish whether further reporting is necessary. Thus, in the analysis, the control group is in fact affected by the new requirement, but to a lesser extent than those who are Medicare eligible. We imagine that, once a sufficient electronic

query process is in place, the delay effects of querying alone are small relative to the effects of querying, receiving a hit, and then the subsequent reporting and reconciliation process. The research design is best suited to measure the difference in claim resolution time between otherwise similar claims that required querying and reporting as compared to querying alone. In other words, to the extent that the query process itself generates delay, this analysis is not ideally suited to capture such effects.

A second reason these estimates are conservative is that some portion of the under 65 population are in fact Medicare eligible, and therefore would have to complete the entire reporting process. Because Medicare eligibility is unobserved in the data I cannot directly account for this; however, data from the ACS and other sources (e.g. Card, Dobkin, and Maestas 2009) suggest that roughly 10% of adults ages 55-64 are Medicare eligible. This, a modest fraction of the individuals who are labeled as controls in this analysis actually undergo the entire reporting process; this misclassification would tend to attenuate any differences estimated using a DD analysis. Similarly, a small segment of the 65 and older population are noncitizens or otherwise ineligible for Medicare; Barnett and Vornovitsky (2016) estimate this population to comprise about 6% of those ages 65 and older.

IV. Results

Table 2 reports estimates of the effect of mandatory reporting and subrogation on the amount of time needed to settle a case. Column I reports results from a simple DD specification as described above with age and year of claim fixed effects but no further controls. The estimated coefficient of .143, which is statistically significant at the 5% level, implies that the new reporting requirement is associated with a 15% increase in the amount of time needed to make final payment on a claim. Relative to the mean, this represents an increase of 58 days to resolve a claim.

Columns II-IV of Table 2 progressively introduce additional sets of control variables to the DD specification. Column II adds controls for claimant demographics, accident characteristics (e.g. severity), detailed measures of claimant injury, and some of the legal characteristics of the case (e.g. attorney involvement, estimated degree of fault of the claimant). Column III adds numerous further controls for

the types of medical care received by the claimant. While it seems unlikely that the volume of treatment received should respond to the reporting requirement because treatment is largely determined prior to the point at which the reconciliation process with Medicare begins, in theory it is possible that reporting could affect treatment, in which case controlling for treatment would be problematic. However, an advantage of controlling for medical care received is that it seems reasonable to expect that, for a given injury, older patients who may be in worse baseline health would likely require more treatment than younger patients, and these controls would account for any such differences. In any case, across both variants, the relationship between the reporting requirement and delay remains statistically significant and of similar magnitude. In my preferred estimate in column IV--which adds a full set of state and year fixed effects, and is therefore robust to unobserved state-level legal and other environmental changes over time-- mandatory reporting is associated with a 12% increase in the time needed to resolve a claim. When calculated as an average marginal effect, this represents 36 day delay. Despite the fact that this is an individual-level regression, the available controls explain a sizeable portion of the overall variance in claim resolution time, suggesting that we observe many of the factually and legally relevant factors that affect how quickly claims can be resolved.

Although the most straightforward interpretation of the results above is that the new reporting requirement increased delay, an alternative interpretation is that the requirement did not directly affect delay, but rather altered the composition of claims within the system so as to reduce the average claim duration. One simple story would be that the possibility of Medicare subrogation made some lower dollar claims no longer economical for a claimant or their attorneys to pursue, because once Medicare removed its portion of the settlement, the remaining amount going to the plaintiff would no longer cover the costs of pursuing the claim. If such lower value claims were also easier to resolve, then after they were removed from the system, we would expect to observe longer average settlement times for the remaining claims. Note that under this scenario as before, the introduction of the requirement does in fact affect claims; however, under the conventional interpretation, its takes a given claim and prolongs it, whereas under the latter interpretation, it drive some claims out of the system.

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To examine this possibility, in Table 3 I report coefficients from regressions similar to those presented previously, but using the log total payment as the outcome variable. In these regressions we observe no measurable increase in the average claim payment following the reform, which suggests that selection is not driving the results.[9] In the second specification, I collapse the data to the claimant age/year level, and estimate a DD regression on the collapsed data to assess whether there was a change in the number of claims originating from those subject to the new reporting requirement. This provides a more direct test for whether the number of claims fell for the target population after the reporting requirement was introduced. There is no measurable change in the volume of claims due to the reform, although admittedly the estimate is somewhat imprecise. Together these results suggest that the primary mechanism through which the reporting mandate operates is to prolong the latency of claims, although the data cannot fully refute the possibility that there may be some modest reduction in claim volume.

Table 4 reports a series of robustness checks designed to test the sensitivity of the results to changes to the sample and specification. For reference, the first row reports the baseline results. Specification 1 adds flexible controls[10] for the log total payment amount as additional controls. In theory payment amounts might be endogenous, which is why I do not control for them in the preferred specification, although Table 3 suggests that there may not be as strong a relationship between payment amounts and reporting as one might have surmised. However, given that more complex claims seem likely to result in higher payments but also take longer to resolve, controlling flexibly for payment amount may provide a useful means to partly account for unobservable age-related differences in the complexity of claims. While including these controls appreciably increases the share of the variance of the outcome that is explained by the model, it leaves the estimated effect of reporting virtually unchanged.

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[9] This regression coefficient combines two impacts—any selection effect that might occur as a result of claims dropping out of the system, and any change in the final settlement amount that would be induced by the greater possibility of subrogation by Medicare. This latter quantity seem likely to, if anything, be positive—following the reporting change, the claimant would have to obtain a higher settlement in order achieve the same level of take-home compensation because of the subrogation. Thus both effects would move in the same direction.

[10] In particular, we add indicators for the deciles of this variable interacted with log payment amount to allow for a non-constant elasticity of claim time with respect to claim amount.

The next robustness check broadens the age range of the sample. The baseline specification limits the analysis to those ages 50 and over under the assumption that drivers ages 50-64 offer a better counterfactual for the claim patterns of those of Medicare age than all drivers; this restriction, however, comes at the cost of reducing the sample size appreciably. Expanding the sample to include younger drivers yields an essentially unchanged point estimate that is more precisely estimated.

Given that some claims take years to resolve, and therefore the claim time distribution is right-skewed, the data are best fit using a logged model; however, in the next robustness check I estimate the reporting/claim time relationship where the dependent variable is measured in levels. The point estimate indicates a roughly one month increase in claim resolution time on average. Although this estimate is only marginally significant, it is in line with the implied effect from the logged model.

In the final robustness check (Specification 4), I adjust the estimates to account for the fact that we do not directly observe Medicare eligibility in the data, and age is an imperfect proxy for eligibility. In particular, because roughly 10% of older adults below age 65 are Medicare eligible, and 6% of those over age 65 are not eligible, the actual increase in the fraction of claimants subject to the reconciliation process is below 100%. Adjusting for these patterns slightly increases the point estimate to 14%. Overall, the robustness checks indicate that the baseline finding regarding the magnitude and significance of the reporting effect is robust.

A key assumption needed for the estimates above to properly capture the effects of reporting is that the younger claimants provide an appropriate counterfactual for what would have happened to older claimants absent the policy reform. Because the analysis essentially uses only two time periods, if there were differential time trends in expected injury costs by age, such trends might be confounded with the new policy. While the underlying DD assumption is not directly testable, I can perform a similar analysis but contrast years prior to the policy reform as a falsification exercise. If there are similar time trends by age and if younger claimants are sufficiently comparable to older claimants so as to render them a good control group, we should expect that when I conduct a similar DD analysis across years where no policy intervention occurred, I should measure no effect.

The first for of Table 5 reports the results from such an analysis, where I use data from the 2002 edition of the IRC closed claim survey as a pre-period, and the 2007 data as the post period. The point estimate from this DD regression is small, non-significant, and fairly precisely measured. This falsification test suggests that the analysis is capturing the effects of the new reporting requirement and does not simply reflect non-comparabilities between older and younger auto injury claimants or age-specific time trends.

As a second falsification exercise, I re-estimate the main specification on 2007 and 2012 data, but construct the sample using personal injury protection (PIP) and Medpay claims rather than bodily injury claims. PIP and Medpay are first-party coverages that pay for medical care regardless of the fault of the driver; these components of auto insurance are primary to health insurance, so providers will typical bill them before billing health insurers.[11] Because PIP and MedPay are available from the moment of an accident and payments do not involve an adversarial settlement negotiation, the same forces that would generate delay in the bodily injury context under enhanced Medicare reporting and recovery would be expected to operate to a much lesser extent, if at all, for these coverages. Thus, if my preferred specification is appropriately capturing the effects of reporting and recovery, in the replication using PIP and Medpay claims, we should observe no effects.

The second column of Table 5 reveals that this is indeed the case. The point estimate is close to zero and sufficiently precise so as the exclude impacts of the magnitude observed on the BI sample. The preferred specification thus finds measurable effects for contexts where reporting might plausibly affect case resolution times, while finding no relationship where none should be present.

Are certain types of claims more extensively impacted by new reporting requirements? Figure 1 plots coefficients from a series of quantile DD regressions that assess the effects of the new reporting requirements on different points within the claim time distribution. Because these regressions include a range of covariates capturing the nature and severity of the claim, these estimates are best conceptualized

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[11] One reason for this is that PIP and Medpay policies generally do not receive the large discounts from medical provider list prices that are available to large health insurers, so providers get higher reimbursements from auto insurers than they would from traditional health insurers.

as indicating the effects of reporting and recovery on claims that are shorter or longer than is typical given their underlying complexity, rather than as estimates of the effects of reporting on longer or shorter claims per se.[12] While there are measurable increases in claim time across most of the distribution, claims in the lowest deciles, that are therefore shorter than expected, appear to be more affected than claims in the highest deciles. This would be consistent with an environment in which reporting engenders a fixed time cost of involving Medicare in negotiations—for simpler than expected claims, this fixed cost represents a higher fraction of the overall time to resolution than for longer than expected claims. If involving Medicare does entail a fixed cost, policies such as the federal exemption for low-value claims enacted in 2012 seem warranted, as such a fixed cost would be more burdensome for smaller claims.

Another way to examine the fixed cost hypothesis is to ask whether most claimants appear equally affected by the new requirements, or if certain subgroups are more or less affected. To assess this, in Table 6 I report results from regressions that include interaction terms between the new requirement and group membership, focusing on groups for which there are plausible reasons to imagine that there could be differences in the settlement negotiation process. I first examine whether the impacts of reporting vary according to whether the claimed injury was a sprain or strain; because such injuries are harder to objectively verify, they are often considered a potential marker for claim buildup or fraud (Derrig, Weisberg, and Chen 1994), and are therefore settled differently than other claims (Crocker and Tennyson 2002, Loughran 2005). For both strain and non-strain injuries we see evidence of a delay effect of similar magnitude, although the smaller sample sizes when estimating effects for subgroups render these estimates only marginally statistically significant.

Specification 2 examines whether delay varies for smaller versus larger claims, where the size of claim is measured based upon the reported loss in dollars. Again, we observe similar delay effects for both categories of claims, and fail to reject the null of no group differences. Similarly, allowing the effects of reporting to vary across no-fault states--which see different types of bodily injury claims due to

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[12] See Powell (2016) for a more detailed discussion of the interpretation of quantile regression coefficients in the presence of covariates.

statutory restrictions on the types of claims that can be brought within the tort system (Anderson, Heaton, and Carroll 2010)—and tort states yields little evidence of heterogeneous effects.

Specification 4 separately considers claims in which the claimant was estimated to have some level of fault for the accident from claims where the fault lay solely with the defendant. These former claims may be more difficult to resolve due to disagreements over culpability. However, for both types of claims there is evidence of a delay effect of mandatory Medicare reporting. Finally, in Specification 5, I consider whether reporting differentially affects cases involving claimed economic losses other than medical care (e.g. lost wages) versus purely medical losses. When medical care is the sole source of losses and therefore highly influences the amount of general damages available to the plaintiff, one might expect plaintiffs and their attorneys to be particularly protective against Medicare encroaching on the settlement. Although the point estimates suggest, contrarily, that there may be somewhat higher delays for combined medical/non-medical claims, the data do not reject equal impacts across the two categories of claims. Overall, the patterns in Table 6 indicate that the unintended delay effects of reporting are experienced across a wide range of different types of claimants and across claims of varying complexity, with little concrete evidence of significant heterogeneity.

V. Conclusions

The analysis indicates that the introduction of a new reporting requirement for Medicare slowed the resolution of auto injury claims by 12%, or a bit over one month. Importantly, this is the average effect across all individuals subject to the new reporting requirement, including claimants for whom there ultimately was no recovery for Medicare. While reporting and subrogation may benefit Medicare fiscally by allowing it to recoup otherwise unreimbursed outlays for medical care that by law are assignable to other parties, it comes at the cost of delaying the resolution of injury settlements for Medicare beneficiaries.

While on the surface a 12% increase in case resolution may seem relatively benign, simple calculations suggest that such delay could generate substantial welfare losses. One simple way to assess

the magnitude of the time costs of delay is to monetize the delays using traditional time value of money calculations. While to my knowledge there is no data source that measure the amount of auto claims payments directed to Medicare beneficiaries, applying the patterns from the closed claim data to data on aggregate auto liability payments from the Insurance Information Institute (2017) suggests that there were roughly $6 billion in auto liability payments in 2014 made to claimants ages 65 and older. While different stakeholders may have different views regarding the appropriate rate of time preference, at a lower bound we might apply a risk-free market interest rate of 3% per year to this sum, in which case the delays documented here would account for roughly $20 million in aggregate losses due to delay. An alternative logical time preference benchmark would be to apply rates derived from real market transactions in the structured settlement market, a market in which individuals with claims on future payment streams (including tort awards) can transform these into lump sum payments. Hindert and Ulman (2005) document an average implied annual interest rate in structured settlement transactions of 20%, which would equate to $130 million in annual delay costs.

These cost estimates are conservative for several reasons. First, the 12% estimate used above is itself likely an understatement of the true impacts of reporting for the reasons discussed in Section II. Second, delays from reporting apply not only to those aged 65 and over, but all Medicare recipients. Individuals under age 65 constitute about 16% of the overall Medicare population, and there are logical reasons to imagine that reconciliation and negotiations during the subrogation process for this group might even be more difficult that for those aged 65 and older, since these beneficiaries by definition have chronic health conditions that may be difficult to disentangle from the conditions brought about by the tort in question. Third, the above calculations apply only to auto-related injuries, but reporting requirements generally apply to the universe of bodily injury claims within the tort system—for example, medical malpractice payments or bodily injury payments under homeowners or commercial liability policies. Because the ICD coding systems commonly used for capturing medical diagnoses for billing purposes include codes that make it comparatively easy to identify care associated with an auto injury than would be possible for these other types of claims, if anything it seems likely that effects of new

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reporting requirements would be more pronounced for non-auto tort claims. Finally, the calculations above assume that the only costs of delay are the time costs of money, when in actuality there are administrative costs associated with querying the system, reconciling bills, and continuing to monitor open claims. Thus, while delay costs of $20-$130 million are not insubstantial in and of themselves, these numbers are likely to be appreciably below the true systemwide cost of the new reporting and subrogation requirements.

To what extent are the findings of this paper likely to translate to Medicaid reporting? At a conceptual level, a reporting process for Medicaid beneficiaries is likely to contain similar elements to the MSP reporting process studied here—in particular, an initial query process to determine whether a claimant is a Medicaid beneficiary followed by, for those who are, a demand notice in which Medicaid indicates treatment it has reimbursed that it believes to be subject to subrogation, followed by a reconciliation process with the liability insurer and claimant. Under both systems claimants, liability insurers, and the government will face similar negotiation and information-sharing incentives. Thus, the forces that produced delay in the Medicare context seem likely to exist in any states that elect to develop such reporting requirements for Medicaid. However, there are also some important differences between Medicaid and Medicare that could escalate costs in the Medicaid context. First, because Medicaid is operated at the state level, each individual state will have to develop a reporting system for its own claimants; states will likely differ in the resources and expertise available in developing such systems, and it seems plausible to think that some states may develop systems inferior to the current federal system. Multi-state liability insurers would also potentially need to develop technology to interact with multiple different reporting systems in different states, which could prove costly.

A second reason why delay cost might be higher in the Medicaid context relates to the nature of the Medicaid program itself. Medicaid is targeted towards low-income individuals and families, and Medicaid recipients have fewer assets than the typical claimant. The costs of delayed settlements may be particularly acute for low-income individuals with few resources; indeed, empirical evidence suggests that poor individuals have substantially higher rates of time preference (Lawrence 1991; Paserman 2008).

Moreover, policies which delay payments to poor claimants who have recently suffered adverse health shocks may be viewed as particularly problematic by policymakers and the public.

It remains to be seen whether states will follow the federal lead and more aggressively pursue reporting and subrogation for their Medicaid programs. This paper identifies a drawback of such subrogation efforts—a delay in settling cases induced by the additional reporting and reconciliation requirements. While ultimately the fiscal pressures facing Medicaid may justify new efforts to appropriately pursue reporting and subrogation in the minds of policymakers, such options should be pursued only with a clear understanding that reporting carries with it an unintended consequence of delay. For those jurisdictions that do more aggressively pursue recovery from personal injury awards, authorities should seek to develop reporting systems that minimize the adverse welfare effects of delay, by, for example, applying a safe harbor for low-value claims as currently exists in the federal system. More broadly, given the clear costs associated with reporting identified in this paper, researchers would do well to develop additional empirical evidence on the potential recovery for Medicaid through additional subrogation, so as to better inform policymakers regarding how the fiscal benefits of additional recovery efforts might compare to the costs.

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Figure 1: Quantile Estimates of the Effect of Mandatory Reporting
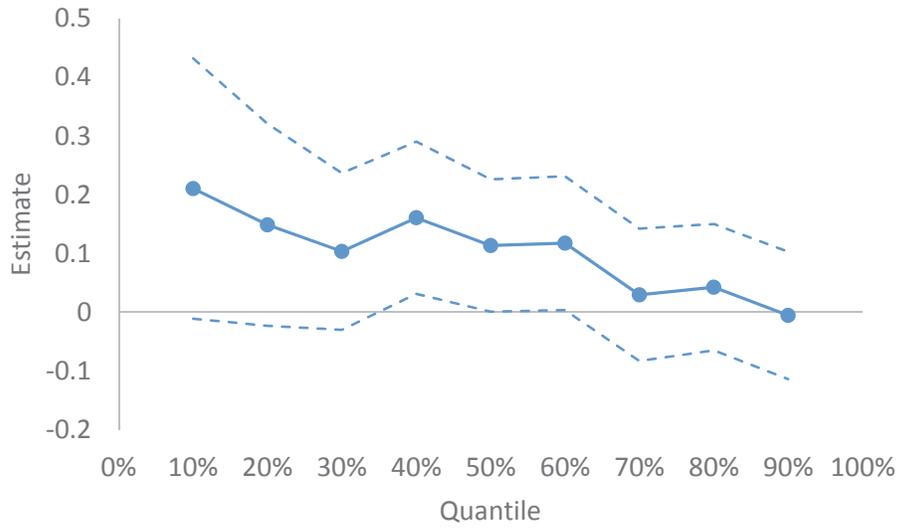
Note: This figures reports coefficient estimates from quantile DD regression estimates of the effect of mandatory reporting on log(claim time), with controls as in specification 4 of Table 2. See notes for Table 2. Dotted lines represent 95% confidence bands.

Table 1: Summary Statistics

Characteristic	Overall Mean	SD	N (non-missing)	Average for claimants under: No MSP reporting (N=8035)	Average for claimants under: MSP reporting (N=1315)
Age (years)	60.5	9.06	9350	58.6	72.3
Male	.429	.495	9290	.431	.420
Employed	.570	.495	6818	.634	.194
Degree of fault (%)	3.47	14.8	9336	3.49	3.31
Accident location					
Large city	.355	.478	9288	.358	.334
Medium city	.346	.476	9288	.337	.398
Suburb/town/rural	.299	.458	9288	.304	.269
Impact severity					
None/minor	.296	.457	8830	.295	.305
Moderate	.525	.499	8830	.528	.508
Major	.178	.383	8830	.177	.186
Most serious injury					
Sprain/strain	.677	.468	9055	.688	.612
Knee, disc, or shoulder injury	.115	.319	9055	.117	.102
Fracture	.059	.236	9055	.056	.081
Other	.149	.356	9055	.140	.205
Extent of disability					
None	.748	.434	9151	.744	.774
Temporary	.196	.397	9151	.198	.180
Permanent	.049	.216	9151	.050	.041
Medical care received					
Went to ER	.418	.493	9350	.416	.432
Imaging performed	.626	.484	9350	.630	.604
Visited chiropractor	.332	.471	9350	.342	.271
Visited physical therapist	.215	.411	9350	.219	.187
Total doctor visits	10.0	16.6	9350	10.4	7.84
Number of lost work days	13.3	181.3	9350	15.1	2.09
Hired attorney	.476	.499	9242	.478	.463
Claimed loss amount ($)	$13,679	40317	8358	$13,385	$15,536
Payment amount ($)	$13,548	27463	9350	$13,424	$14,308
Time to claim resolution (days)	385.6	398.0	8746	383.1	400.9

Table 2: Baseline Estimates of the Effects of Reporting on Claim Resolution Time

	I	II	III	IV
DD estimate	.143*	.122*	.138*	.113*
	(.069)	(.058)	(.056)	(.056)
N	8746	8734	8734	8734
R²	.010	.318	.391	.416
Control for claimant demographics, accident, and injury characteristics?	N	Y	Y	Y
Control for medical care received?	N	N	Y	Y
Include state/year fixed effects?	N	N	N	Y

Note: This table reports coefficient estimates from a differences-in-differences regression designed to measure the effects of mandatory reporting on personal injury claim resolution speed. The unit of observation is a claim, and the outcome variable is the logged number of days between the initial injury report and final claim payment. Claimants 65 and over who had claims resolved in 2012 are the treated group subject to mandatory reporting; differences are taken across age groups and across years. Column I includes as controls a set of age of claimant fixed effects (51 categories) and year of claim fixed effects (2 categories). Column II adds controls for whether the claimant hired an attorney, policy limits (9 categories), accident location (urban/rural, 5 categories), number of vehicles involved (3 categories), whether there were passengers in the vehicle, impact severity (5 categories), injury severity at scene (6 categories); claimant role in the accident (driver/passenger/etc., 7 categories), relationship to insured (3 categories), sex, employment status (3 categories), degree of fault (7 categories), presence of injuries (25 categories), most severe injury (22 categories), and disability status (3 categories). Column III adds controls for whether the claimant used various medical services (21 categories) and the number of visits made to each of 16 different categories of providers. Column IV adds a full set of state of accident by claim year interactions (102 categories) as controls. Robust standard errors are reported in parentheses. * indicates an estimate that is statistically significant at the 5% level; ** at the 1% level.

Table 3: Effects of Reporting on Payment Amount and Claim Volume

	Log(Total Payment)	Number of claims
DD estimate	.027	-7.962
	(.044)	(6.123)
N	9338	82
R²	.666	.993

Note: This table reports coefficient estimates from a differences-in-differences regression designed to measure the effects of mandatory reporting on additional claim outcomes. Column I reports a regression similar to the baseline where the dependent variable is the log total claim payment in dollars. Here the specification is as in column IV of Table 2; see notes for Table 2. Column II reports coefficients from simple DD regressions where the unit of observation is an age/claim year cell and the outcome is the number of claims in the database; this regression includes age and year fixed effects as controls. The mean of the dependent variable for column 2 is 113. Robust standard errors are reported in parentheses. * indicates an estimate that is statistically significant at the 5% level; ** at the 1% level.

Table 4: Robustness Checks

	DD Estimate	N	R^2
0. Baseline estimate	.113*	8734	.416
	(.056)		
1. Include controls for total payment amount	.104*	8734	.518
	(.050)		
2. Include wider age band	.125*	36587	.414
	(.049)		
3. Estimate in levels rather than logs	28.474	8734	.370
	(15.633)		
4. Adjust for misclassification	.135*	8734	.416
	(.066)		

Note: This table reports coefficient estimates from alternatives to the baseline specification. Except as otherwise noted, the specification is as in column IV of Table 2; see notes for Table 2. Robust standard errors are reported in parentheses. * indicates an estimate that is statistically significant at the 5% level; ** at the 1% level.

Table 5: Falsification Tests

	DD Estimate	N	R²
1. Compare 2007 to 2002	-.023 (.054)	9297	.412
2. PIP and Medpay claims rather than BI claims	.009 (.046)	7755	.305

Note: This table reports coefficient estimates from a regression designed to serve as placebo test of the baseline specification. In the first specification, the years of data are 2002 and 2007, and 2007 is used as the implementation year, so claimants ages 65 and older in 2007 are the treated group. In the second specification, the sample is comprised of PIP and Medpay claims from the 2012 and 2007 IRC database rather than BI claims. Except as noted below, the specification is as in column IV of Table 2; see notes for Table 2. The second specification omits driver degree of fault as a control as that does not apply to PIP and Medpay claims. Robust standard errors are reported in parentheses. * indicates an estimate that is statistically significant at the 5% level; ** at the 1% level.

Table 6: Estimated Effects by Subgroup

	DD Estimate	P-value H_0: Groups equal
1. Type of injury		
Sprain/strain (N=5711)	.107+	
	(.063)	.908
Other (N=2965)	.116	
	(.071)	
2. Claimed loss amount		
Below median (N=3896)	.142*	
	(.071)	.815
Above median (N=3943)	.126*	
	(.054)	
3. Legal regime		
No-fault (N=1419)	.119	
	(.093)	.945
Tort (N=7315)	.112+	
	(.059)	
4. Claimant shared fault for crash		
Yes (N=639)	.174	
	(.113)	.554
No (N=8094)	.108+	
	(.057)	
5. Reported economic losses other than medical		
Yes (N=1801)	.207*	
	(.092)	.210
No (N=5879)	.095+	
	(.054)	

Note: This table reports coefficient estimates from alternatives to the baseline specification that include interactions between required MSP reporting and membership in the listed group. Each numbered specification presents results from a unique regression. The specification is as in column IV of Table 2; see notes for Table 2. Robust standard errors are reported in parentheses. + indicates and estimate that is statistically significant at the 10% level, * at the 5% level; ** at the 1% level.