Medicare Secondary Payer Status: The Impact of Section 111 Reporting Requirements

Prepared for
The Casualty Actuarial Society
Committee on Health Care Issues

Prepared by
Guy A. Avagliano, FCAS, MAAA
Philip S. Borba, Ph.D.
Christine M. Fleming, J.D., ACAS, MAAA
Craig P. Taylor, ACAS, MAAA
Milliman, Inc.

July 6, 2015

TABLE OF CONTENTS

LIST OF TABLES

EXECUTIVE SUMMARY

Section 111 of the Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA) requires property-casualty insurers and self-insureds to report to the Centers for Medicare and Medicare Services (CMS) certain information on medical treatments received by Medicare beneficiaries. The information concerns the medical treatments received by a Medicare beneficiary whose injury or illness is subject to a property-casualty insurance or self-insurance coverage. Medicare has long been the secondary payer for medical payments attributable to a property-casualty insurance or self-insurance coverage, and this has not changed under Section 111. It is the reporting requirements that have changed, and these changes may increase the losses for cases where Medicare has been making payments and has not been reimbursed by a primary payer (in this case, the property-casualty insurer or self-insured). [1]

The reporting requirements concern claims for workers' compensation, automobile, homeowners, and other liability coverages.[2] For Medicare beneficiaries receiving ongoing medical treatment, insurers and self-insureds were required to report claims with more than $750 of medical payments as of January 1, 2010. Thresholds for lump sum payments for workers' compensation became effective for payments made on or after October 1, 2010. Thresholds for reporting lump sum payments for liability insurance became effective for payments made on or after October 1, 2011.[3]

This study was undertaken to investigate the potential impacts of the Section 111 reporting requirements on property-casualty losses, and in particular to assist practicing casualty actuaries with the potential impacts of the reporting requirements. A short time has passed since Section 111 became effective and there have been delays in the full implementation of the reporting requirements. Consequently, there is little information with which to estimate the financial impact of the new reporting requirements. For this study, we show through case illustrations how losses may increase for insurers and self-insureds. With some very generalized assumptions, we present possible aggregate estimates for a hypothetical insurer for workers' compensation and private passenger automobile coverages. This study provides the practicing actuary with an approach for evaluating the impact of Section 111 claims where Medicare has been making payments and has not

[1] CMS refers to "liability insurance (including self-insurance, no-fault insurance, and workers' compensation)". For simplicity, we will collectively refer to these arrangements as "insurance" or "insurance and self-insurance", and the parties providing these coverages as "insurers" or "insurers and self-insureds".

[2] See Centers for Medicare and Medicaid Services, MMSEA Section 111, Chapter I, Sections 4.2 and 4.3 for further information on covered incidents.

[3] See Appendix A in this report and Centers for Medicare and Medicare Services, MMSEA Section 111, Chapter III, Sections 6.3 and 6.4 for further information on the reporting amount thresholds and phase-in dates for ongoing medical treatments and lump sum payments (referred to as "Total Payment Obligation to the Claimant," or TPOC, in the CMS materials).

been reimbursed by the property-casualty insurer or self-insured.

We found that the Section 111 reporting requirements may cause modest increases in losses for injured workers and individuals 65 and over for cases where Medicare has been making payments without being reimbursed by the property-casualty insurer or self-insured. In this report, we illustrate the potential impact on losses for 10 workers' compensation, private passenger automobile, and homeowners cases, including estimates for the broader financial impact on losses for the six workers' compensation cases. For the hypothetical insurer with the conditions or types of workplace injuries described in this report, we estimate the impact to be an increase in total losses (medical and indemnity) between 0.9% and 5.7% for workers 65 and over. Using a set of generalized assumptions, we estimate the aggregate impact on medical losses for injured workers 65 and over to be between 11% and 25%, which when spread across all workers the estimated increase is from 0.5% to 1.3% depending on the condition or type of injury. For private passenger automobile injuries (and again, using a set of generalized assumptions), the estimated impact is for a 0.4% to 0.8% increase in total losses for individuals 65 and over, and an estimated increase of 0.07% to 0.13% in total losses for all ages. Finally, while we include a homeowners claim in the case illustrations, we did not estimate an aggregate impact due to the lack of information on medical payments for homeowners claims.

Section 111 Reporting Requirements

Under Section 111, insurers and self-insureds are required to report to CMS certain information on incidents where a Medicare beneficiary has received medical treatment or where a one-time payment (such as a lump sum, settlement, or judgment) includes provisions for medical treatments. This information includes identifiers for the claimant and the insurer (or self-insured) and diagnostic information for the medical treatments (such as the International Classification of Diseases 9th (or 10th) Revision (ICD-9 or ICD-10) diagnosis codes). When a Medicare beneficiary receives medical treatment in the future for which payment is sought under Medicare, CMS will use this information to determine whether the medical treatment was related to a previous injury that was covered by an insurer or self-insured. If CMS determines the medical service was related to the prior injury, CMS will seek reimbursement for payment for the medical service from the insurer or self-insured.

Prior to Section 111, CMS did not have a coordinated process for identifying Medicare beneficiaries receiving treatment for injuries covered by insurers and self-insureds. Consequently, CMS was unable to easily identify claims where Medicare was a secondary payer and was not pursuing potential reimbursements from insurers and self-insureds. Prior to and with the Section 111 reporting requirements, the practice has been for CMS to pay medical providers for their services. However, these payments are "conditional payments" and do not remove a primary payer's

financial responsibility for the medical treatments. If CMS determines the medical treatments were for an injury from a prior property-casualty incident, CMS will seek reimbursement from the insurer or self-insured.

If an insurer paid for a Medicare beneficiary's medical services prior to Section 111, the new reporting requirements may have no impact on its financial liabilities. This presumes the insurer paid for all medical services to Medicare beneficiaries that could be attributed to the property-casualty covered incident. However, there may have been situations where the insurer was not aware of all medical services for a covered injury or where a Medicare beneficiary received medical treatment without associating the injury to a work-related, automobile, property, or other incident covered by an insurer. For example, suppose a Medicare beneficiary suffers a work-related injury that requires a knee replacement and the insurer makes full payment for the injury. Prior to Section 111, this might have been the last the insurer heard from the injured worker. However, Section 111 requires the insurer to report the injury and the diagnostic information to CMS, and if the injured worker receives another knee replacement in the future, CMS will have the ability to reach back and relate the second replacement to the workplace injury, and then bill the insurer for the second replacement.

At the outset, it is important to distinguish between the Section 111 reporting requirements and a Medicare Set-Aside Arrangement (MSA). Section 111 requires insurers and self-insureds to report to CMS personal identifier and diagnostic information for Medicare beneficiaries receiving medical treatments for an incident subject to a property-casualty insurance coverage (including incidents covered by self-insurance). A Medicare Set-Aside Arrangement is a voluntary financial agreement that allocates a portion of a settlement to pay for future medical services related to a claim.[4] Section 111 reporting is required by statute; Medicare Set-Aside Arrangements are voluntary. Also, as a practical matter Section 111 concerns all claims with medical payments over $750, including claims with ongoing medical treatment. By contrast, MSAs only concern large settlements. CMS will only review MSA submissions where the claimant is a Medicare beneficiary and the total settlement is greater than $25,000 or the claimant has a reasonable expectation of enrolling for Medicare within the next 30 months and the total settlement is greater than $250,000. The impact of the Section 111 reporting requirements, which may increases losses for cases where Medicare has been making payments that have not been reimbursed by the insurer or self-insured, is the focus of the present study.

[4] In the past, MSAs have been limited to workers' compensation settlements. Recently, MSAs have started to be considered for settlements involving Medicare beneficiaries for other types of property-casualty coverages.

Methodology

We studied the potential impacts of the Section 111 reporting requirements from two perspectives.

- First, we developed 10 cases to illustrate situations that may arise and require special attention from property-casualty practitioners (e.g., casualty actuaries, claim specialists). The cases were developed to highlight a variety of situations across different liability coverages. For the six workers' compensation cases, we extended the discussion to the potential broader financial impacts covered by the particular case. For example, for the case concerning an injured worker 65 or over who was a Medicare beneficiary with a knee replacement, we extended to discussion to injured workers 65 and over receiving ankle, hip, and shoulder replacements.
- Second, we developed aggregate estimates of the impact of Section 111 reporting requirements for a hypothetical insurer or self-insured by applying a set of assumptions to aggregate data for workers' compensation and automobile injury insurance claims.

For the case illustrations, broader financial impacts, and aggregate estimates, we relied on information that can be arranged into three broad areas, with differing implications as to the variability that may be observed in a particular book of business.

- First, we used reports from insurance industry and government agency sources for information on claim frequency and costs and worker demographics. This information was the starting point to illustrate the potential impacts for an average or typical book of business. Nevertheless, this injury and worker demographic information may need to be adjusted when calculating the impact for a specific book of business.
- Second, from discussions with actuaries and claims consultants, we developed estimates of case reserves for the case illustrations and the range of possible impacts for the aggregate estimates for a hypothetical insurer or self-insured. To the extent injury severities and reserving practices differ across insurers and self-insureds, there will be differences across books of business. Also, the aggregate impacts that may be calculated in the future will reflect the differences in books of business and reserving practices, as well as the extent to which insurers and self-insureds may have been making medical payments for individuals 65 and over prior to Section 111.
- And third, from discussions with claim consultants and information from medical studies, we developed assumptions concerning the frequency and costs of medical services for certain

low-frequency, high-cost medical treatments (such as a liver replacement or joint replacement). Injury severity and medical needs are likely to vary greatly across individuals needing these medical treatments, and these differences will have an impact on the cost estimates in our illustrations.

In sum, we used information from several types of sources and while we made efforts to use credible information for the illustrations, there will be departures in the actual experience and the extent of these departures is likely to be related to the general type of information.

Case Illustrations

We developed 10 cases to illustrate situations that may arise under the Section 111 reporting requirements. Six cases concern work-related injuries covered by workers' compensation, three cases were injuries subject to automobile coverage, and one case was for a homeowners coverage incident. The cases were developed to show a variety of situations across different liability coverages. A summary of the 10 cases is presented in Table ES-1. While the case illustrations are not exhaustive, the cases capture situations that may produce some of the largest impacts on losses.

Table ES-1 Summary of Case Studies

Case	Line of Business	Abstract
1	Workers' compensation	Workers' compensation claimant with knee replacement
2	Workers' compensation	Workers' compensation claimant with a needle-stick injury
3	Workers' compensation	Workers' compensation claimant with lung cancer
4	Workers' compensation	Medicare beneficiary with a work-related injury relocates
5	Workers' compensation	Workers' compensation claimant with long-term pharmaceutical prescription needs
6	Workers' compensation	Workers' compensation claimant receiving SSDI with a shortened life expectancy
7	Automobile no-fault	Passenger in automobile accident covered by driver's no-fault automobile coverage
8	Automobile liability (other driver)	Medicare makes conditional payments for a 67-year-old automobile accident claimant
9	Automobile	Automobile accident claimant with a traumatic brain injury
10	Homeowners	Medicare beneficiary injured on neighbor's property

We expanded the six workers' compensation cases to other similar cases. For example, the case concerning a work-related knee replacement was extended to other joint replacements (Case 1 in

Table ES-1). The case concerning lung cancer was extended to claims with other types of cancer that might be attributed to a workplace exposure (Case 3). For each case, we developed a "broader financial impact" framework for the potential losses for the group of similarly-situated claims. For the broader financial impacts, we took the following points into consideration:

- the frequency of and average costs for the particular injury or medical condition,
- the representation of Medicare eligible claimants among all workers' compensation claimants,
- the frequency of a particular injury or medical condition among all Medicare-eligible injured workers with the injury or medical condition,
- estimates for the pre-Section 111 case reserves, and
- potential losses with the Section 111 reporting requirements.[5]

For the conditions associated with the case illustrations, the estimated financial impact to the insurer or self-insured was the difference between the current case reserve estimates and the potential losses.

Table ES-2 presents the estimated impacts on losses for the six scenarios. For example, for joint replacements (Case 1 in Table ES-2 and the report), we estimated that approximately 15% of all Medicare beneficiaries incur a knee, shoulder, ankle, or hip injury that could lead to a joint replacement and injuries to these four body parts account for approximately 20% of all incurred losses for claims from Medicare beneficiaries.[6] For the small number of such injuries that result in a joint replacement, we estimated that CMS's ability to associate the joint replacement back to a primary payer could increase losses for injured workers 65 and over with a knee, shoulder, ankle, or hip injury by approximately 18.8%, by approximately 3.8% for all workers 65 and over, and by approximately 0.2% for workers of all ages.[7] Depending on the condition or type of injury addressed by the case illustration, we estimated the impact to be an increase of total losses between 0.9% and 5.7% for workers 65 and over, which translated into increases of 0.1% to 0.3% for all workers of all ages. These scenarios assume Medicare has been making payments and has not been reimbursed by the insurer or self-insured.

[5] Injury frequencies and average costs by type of injury were obtained from workers' compensation unit statistical plan data. The shares of Medicare eligible claimants were developed from US Bureau of Labor Statistics data. Assumptions concerning Medicare eligible with an injury condition, case estimates, and potential losses were developed in consultation with casualty claim consultants.

[6] The share of and average costs of knee, shoulder, ankle, and hip injuries were from unit statistical plan data.

[7] The presumption here (as with the other estimated impacts) is that prior to Section 111 CMS paid for the medical services and did not receive reimbursement from the primary payer. This presumption is because CMS did not have the tracking system for medical payments (and particularly for diagnoses) that was created to support the reporting requirements in Section 111.

The total impacts of Section 111 could be greater than the sum of the broader financial impacts in the case illustrations. First, the present set of cases does not exhaust all possibilities and the estimated impacts are very sensitive to the underlying assumptions. Also, the primary purpose of the case illustrations and broader financial impact discussions was to present a set of cases with special circumstances that might come up under Section 111 and a template for evaluating the potential impacts on Medicare-eligible and all injured-worker losses. These assumptions are described in the report and are presented in templates a reader can vary to assess the impact of alternative assumptions.

Table ES-2 Summary of Broader Financial Impacts From Case Illustrations for Workers' Compensation

Case Number	Type of Injury/Condition	% of Medicare-Eligible Claims	% of Incurred Losses for Medicare-Eligible Claims (prior to Section 111)	Impact on Incurred Losses for -		
				Medicare-Eligible With Condition/Type of Injury	All Medicare-Eligible	All Workers
1	Knee, shoulder, ankle, hip injury leading to a Joint replacement	14.6%	20.4%	18.8%	3.8%	0.2%
2	Long latency	5.1%	1.8%	115.2%	2.1%	0.1%
3	Lung cancer	3.6%	6.3%	81.0%	5.1%	0.3%
4	Medicare beneficiary relocates	62.6%	52.1%	2.2%	0.9%	0.05%
5	Pharmaceutical	100.0%	9.9%	N/A	5.7%	0.3%
6	SSDI with shortened life expectancy	3.1%	4.8%	60.7%	2.9%	0.1%

Aggregate Estimates: Workers' Compensation

The preceding analyses presented estimates for specific types of injuries. To develop an aggregate estimate for the hypothetical insurer or self-insured, we applied assumptions to aggregate data for workers' compensation and private passenger automobile claims. We did not calculate an estimate for homeowners coverages due to the lack of information on medical payments. Also, while the case illustrations covered all losses (medical and indemnity), our analyses for the aggregate impact was limited to medical payments.

For workers' compensation, we developed separate estimates for medical-only, indemnity claims with no lump sum, and indemnity claims with a lump sum. We estimated increases in medical losses for three levels of change in average medical losses: low, moderate, and high.[8] The

[8] We developed the range of possible impacts from discussions with actuaries and claim consultants. The actual experience that may be calculated in the future will depend on the additional payments reimbursed to CMS, reserving

assumptions and results are summarized in Table ES-3. For the "moderate" change, we assumed average medical losses for medical-only claims increase by 10%, average medical losses for indemnity claims without a lump sum increase by 15%, and average medical losses for indemnity claims with a lump sum increase by 25%.[9] Aggregating across the three claim groups, we estimated medical losses for workers 65 and over could increase by 17% (top panel in Table ES-3), which converts to an increase of 0.9% across all workers (bottom panel in Table ES-3). Across the three assumed levels of impact, we estimated medical losses for injured workers 65 and over could increase by 11% to 25%, which when spread across all workers the estimated increases are from 0.5% to 1.3%.[10]

Table ES-3 Estimated Impact of Section 111 Reporting Requirements on Workers' Compensation Medical Losses

	Assumed Increase in Average Medical Losses			Estimated Impact on Total Medical Losses	
Scenario / Level of Increase in Average Medical Losses	Medical Only	Lost-Time Claims without Lump Sum	Lost-Time Claims with Lump Sum	Injured Workers 65 and Over	All Injured Workers
Base Case					
Low	5%	10%	15%	10.9%	0.5%
Moderate	10%	15%	25%	17.3%	0.9%
High	15%	20%	40%	25.1%	1.3%
Assuming a 50% Decrease in the Incidence of Lump Sum Settlements					
Low	5%	15%	25%	15.8%	0.8%
Moderate	10%	20%	40%	22.5%	1.1%
High	15%	25%	50%	28.4%	1.4%

Although the present study concerned the Section 111 reporting requirements and not Medicare

practices, and the extent to which insurers and self-insureds may have been tracking medical payments for individuals 65 and over prior to Section 111.

[9] Again, these assumptions were developed from discussions with actuaries, claim consultants, and other property-casualty insurance industry practitioners.

[10] While at a very high level the size of the financial impacts from the case illustrations in Table ES-2 are consistent with the aggregate estimates in Table ES-3, we advise against making a direct link between the two sets of results. While the case illustrations concerned the impact on medical and indemnity losses, the analyses at the aggregate level were limited to the impact on medical losses. Also, the case illustrations were developed to illustrate the types of situations that might be impacted by the Section 111 requirements and are a subset of all medical treatments that will be impacted by Section 111. It would be very speculative to suggest to scope of the potential additional losses accounted for the case illustrations.

Set-Aside Arrangements (MSAs), for reasons described in the report, Section 111 may decrease the incidence of CMS-approved MSAs for workers' compensation claims. To test the potential impact against the assumptions for the base scenario, we assumed a 50% reduction in the pre-Section 111 incidence of lump sum settlements and larger increases in the medical losses for lost-time claims. These assumptions were developed from discussions with actuaries, claims consultants, and other property-casualty practitioners. The lower incidence of lump sum settlements can be attributed to larger settlements being needed for CMS approval, which is causing a decrease in the willingness of insurers and self-insureds to enter into settlements. The higher amounts for the assumed increases in average medical losses would take into account a larger than expected capture of medical losses by the Section 111 reporting requirements. The results for the alternative scenario were increased total medical losses of 15.8% to 28.4% for injured workers 65 and over, and 0.8% to 1.4% when these losses are spread across all workers.

Aggregate Estimates: Private Passenger Automobile

We developed for private passenger automobile estimates for injuries under five separate coverages and for injuries under all coverages. We used information on the percentage of payments for medical care and the average medical payments. The assumptions and results are summarized in Table ES-4.

Our analyses indicates that the Section 111 reporting requirements may increase the average medical payments for individuals 65 and over by $842 to $1,685 (based on 2012 loss experience), or by 1.3% to 2.6% for this age group. The 1.3% to 2.6% estimated impact on medical payments for individuals 65 and over translates to an estimated increase of 0.2% to 0.4% in medical payments for all ages. For total losses, the estimated impact is for a 0.4% to 0.8% increase in total losses across injured individuals 65 and over, and an estimated increase of 0.07% to 0.13% for all ages.

Table ES-4 For Private Passenger Automobile Coverages, Estimated Impact on Total Medical Payments and Total Payments for Injured Individuals 65 and Over

Assumed Impact (Increase) on Medical Payments Due to Section 111 Reporting Requirements	All Types of Injuries	Bodily Injury	Personal Injury Protection	Medical Payments	Uninsured Motorist	Underinsured Motorist
	Estimated impact on average medical payments for injured individuals 65 and over					
10%	$842	$758	$912	$520	$904	$6,106
15%	$1,263	$1,138	$1,638	$780	$1,355	$9,159
20%	$1,685	$1,517	$1,824	$1,041	$1,807	$12,212
	Estimated impact as a percent of total medical payments					
10%	1.3%	1.0%	1.3%	1.7%	1.4%	2.8%
15%	2.0%	1.5%	2.0%	2.6%	2.0%	4.1%
20%	2.6%	2.0%	2.6%	3.5%	2.7%	5.5%
	Estimated impact as a percent of total payments					
10%	0.4%	0.4%	0.3%	1.7%	0.3%	0.7%
15%	0.6%	0.6%	0.5%	2.6%	0.5%	1.0%
20%	0.8%	0.8%	0.7%	3.5%	0.7%	1.4%

INTRODUCTION

Under Section 111 of the Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA), liability insurers, no-fault insurers, workers' compensation insurers, and entities self-insuring their property-casualty medical liabilities are required to report to the Centers of Medicare and Medicaid Services (CMS) certain information concerning claims with ongoing medical treatment, settlements, judgments, awards, or other one-time and lump sum settlements received by or on behalf of Medicare beneficiaries.[11] This information includes claimant and insurer identifiers and diagnostic information for the medical treatments. When a Medicare beneficiary receives medical treatment in the future, CMS will use this information to determine whether the medical treatment was related to a previous injury that was covered by the liability policy or self-insurance arrangement.

The reporting requirements concern claims for workers' compensation, automobile, homeowners, and other liability coverages.[12] For Medicare beneficiaries receiving ongoing medical treatment,

[11] CMS refers to "liability insurance (including self-insurance, no-fault insurance, and workers' compensation"). For simplicity, we will collectively refer to these arrangements as "insurance" or "insurance and self-insurance", and the parties providing these coverages as "insurers" or "insurers and self-insureds".

[12] See Centers for Medicare and Medicaid Services, MMSEA Section 111, Chapter I, Sections 4.2 and 4.3 for further information on covered incidents.

insurers and self-insureds were required to report claims with more than $750 of medical payments as of January 1, 2010. Thresholds for lump sum payments for workers' compensation became effective for payments made on or after October 1, 2010. Thresholds for reporting lump sum payments for liability insurance became effective for payments made on or after October 1, 2011. [13]

This study was undertaken to investigate the potential impacts of the Section 111 reporting requirements on property-casualty losses, and in particular to assist practicing casualty actuaries with the potential impacts of the reporting requirements. A short time has passed since Section 111 became effective and there have been delays in the full implementation of the reporting requirements. Consequently, there is little information with which to estimate the financial impact of the new reporting requirements. For this study, we show through case illustrations how losses may increase for insurers and self-insureds. With some very generalized assumptions, we present possible aggregate estimates for a hypothetical insurer for workers' compensation and private passenger automobile coverages. This study provides the practicing actuary with an approach for evaluating the impact of Section 111 claims where Medicare has been making payments and has not been reimbursed by the property-casualty insurer or self-insured.

At the outset, it is important to distinguish between the Section 111 reporting requirements and a Medicare Set-Aside Arrangement (MSA). Section 111 requires insurers and self-insureds to report to CMS personal identifier and diagnostic information for Medicare beneficiaries receiving medical treatments for an incident subject to a property-casualty insurance coverage (including incidents covered by self-insurance). A Medicare Set-Aside Arrangement is a voluntary financial agreement that allocates a portion of a settlement to pay for future medical services related to a claim.[14] Section 111 reporting is required by statute; Medicare Set-Aside Arrangements are voluntary. Also, as a practical matter Section 111 concerns all claims with medical payments over $750, including claims with ongoing medical treatment. By contrast, MSAs only concern large settlements. CMS will only review MSA submissions where the claimant is a Medicare beneficiary and the total settlement is greater than $25,000 or the claimant has a reasonable expectation of enrolling for Medicare within the next 30 months and the total settlement is greater than $250,000. The impact of the Section 111 reporting requirements, which may increases losses for cases where Medicare has been making payments that have not been reimbursed by the insurer or self-insured, is the focus of the present study.

---

[13] See Appendix A in this report and Centers for Medicare and Medicare Services, MMSEA Section 111, Chapter III, Sections 6.3 and 6.4 for further information on the reporting amount thresholds and phase-in dates for ongoing medical treatments and lump sum payments (referred to as "Total Payment Obligation to the Claimant," or TPOC, in the CMS materials).

[14] In the past, MSAs have been limited to workers' compensation settlements. Recently, MSAs have started to be considered for settlements involving Medicare beneficiaries for other types of property-casualty coverages.

Section II presents a very brief discussion of the current Section 111 reporting requirements with the focus on reporting thresholds. In Section III, we discuss potential impacts of Section 111 reporting on insurer and self-insured losses, as well as other potential financial impacts. Section IV provides the results from our interviews with claims consultants and actuaries with experience with claims and losses subject to the Section 111 reporting requirements. Section V presents 10 cases we developed to illustrate the types of situations in which Medicare is a secondary payer for injuries and illnesses covered by workers' compensation, automobile, or homeowners insurance, or a self-insured program. In Section VI, we review related past research and use summary-level data to estimate the potential impact of Section 111 on workers' compensation and automobile losses. We did not estimate an the impact for homeowners coverage due to the lack of information on medical payments. Concluding comments are provided in Section VII.

II. SECTION 111 REPORTING REQUIREMENTS

Section 111 requirements concern Medicare beneficiaries who are receiving medical treatment for a work-related injury or an injury where the incident is covered by an insurer or self-insurance arrangement. Under Section 111, insurers and self-insureds are required to report to CMS certain information on incidents where a Medicare beneficiary has received medical treatment or when a one-time payment (such as a lump sum, settlement, or judgment) is made to a Medicare beneficiary.[15] This information includes identifier information for the claimant and the insurer (or self-insured), and diagnostic information for the medical treatments (such as the International Classification of Diseases 9th (or 10th) Revision (ICD-9 or ICD-10) diagnosis codes). When a Medicare beneficiary receives medical treatment in the future for which payment is sought under Medicare, CMS will use this information to determine whether the medical treatment was related to a previous injury that was covered by an insurer or self-insured.

Section 111 distinguishes between two broad types of medical services.

- **Ongoing responsibility for medicals** (ORM) refers to the ongoing responsibility for payment of the injured party's medical treatment, including medical-only claims with more than $750 in payments and all indemnity claims.
- **Total payment obligation to the claimant** (TPOC) refers to the settlement, judgment, award, or other payment in addition to the ORM. A TPOC is generally a one-time or lump sum settlement, judgment, or award. Structured settlements are considered TPOCs.

The reporting requirements became effective May 1, 2009. Each class of medical services is subject to certain reporting thresholds, which in the case of the TPOC payments have been decreasing over the past several years.[16] There is no threshold for TPOC claims for no-fault insurance—all TPOC payments made under a no-fault coverage must be reported to CMS. Thresholds for reporting TPOC payments for liability insurance became effective for payments made on or after October 1, 2010, and thresholds for these types of payments for workers' compensation became effective for payments made on or after October 1, 2011.

Table 1 presents the recent reporting thresholds and effective dates for TPOC payments for

---

[15] The reference materials produced by the Centers for Medicare and Medicare Services (CMS) refers to "liability insurance (including self-insurance, no-fault insurance, and workers' compensation)". For simplicity, we will collectively refer to these arrangements as "insurance" or "insurance and self-insurance", and the parties providing these coverages as "insurers" or "insurers and self-insureds".

[16] See Appendix A for a very brief discussion of the legislative history of the Medicare program, coverages provided under the Medicare program, Medicare as a secondary payer, the enactment of the Medicare, Medicaid, and SCHIP Extension Act of 2007 (which included Section 111), and the reporting thresholds.

workers' compensation and liability insurance. As of January 1, 2014, an insurer or self-insured was required to report TPOC payments made on or after October 1, 2013, that were over $2,000. As of January 1, 2015, the threshold for workers' compensation and liability claims is $300 for payments made on or after October 1, 2014.

Table 1 Total Payment Obligation to the Claimant Reporting Dates and Thresholds for Workers' Compensation and Liability Insurance

Section 111 Reporting Required in the Quarter Beginning	TPOC Date on or After	TPOC Threshold
January 1, 2014	October 1, 2013	TPOC over $2,000
January 1, 2015	October 1, 2014	TPOC over $300

III. POTENTIAL IMPACTS: GENERAL DISCUSSION

We arrange our general discussion on the potential impacts into two areas: (1) impacts as measured through claim experience metrics, specifically claim frequency, claim severity, and claim settlements, and (2) financial impacts, specifically the impacts on reserves and pricing. Within these two broad areas, we expect the Section 111 to have the most impact on claim severity and case reserves.

A. Claim Experience Measures

The following discusses briefly the potential impacts of the Section 111 reporting on three broad claim experience measures: claim frequency, claim severity, and claim settlements. As will become evident in the next section, we expect most of the impact to be on claim severity, and particularly higher losses for known claims.

- **Claim frequency:** Insurers and self-insureds may experience an increase in the number of claims for individuals 65 and over.[17] The reporting thresholds for one-time and lump sum settlements have decreased over the past several years and the lower thresholds will increase the number of claims that must be reported to CMS.[18] Furthermore, given the ORM threshold is set at $750, medical inflation will cause more claims with ORM to exceed this threshold, and as a consequence more ORM claims will be reported to CMS. As more claims are reported to CMS, the increased surveillance by CMS may cause some amounts previously paid under Medicare to be shifted back to the liability and workers' compensation coverage.
- **Claim severity:** Insurers and self-insureds may experience an increase in the losses (and especially medical losses) for known claims. Section 111 reporting requirements for ORMs will provide CMS with the means for closer surveillance of the medical services administered to Medicare beneficiaries. With the ongoing reporting for ORMs, it will be easier for CMS to identify medical services previously considered part of the aging process (e.g., low back injuries, joint injuries) to have been caused by a work-related or other incident, such as an automobile accident or an incident on another person's property. With Section 111, CMS will have the personal identifier and diagnostic information for medical treatments paid by insurers and self-insureds. When an individual 65 or over receives medical treatment that is submitted to CMS for payment under Medicare, CMS will be able to tie the diagnostic

[17] To the extent there are Medicare beneficiaries under 65 (such as individuals receiving SSDI), insurers and self-insureds may see an increase in the number of claims for individuals under 65.

[18] See Table A-3 in Appendix A for the history of reporting thresholds for liability insurance and Table 33 for the history for workers' compensation.

information from the prior treatments to the diagnostic information for the recent treatments. CMS will consider the recent treatments to be a continuation of the prior treatments (same diagnosis) and seek reimbursement from the insurer or self-insured.

- **Claim settlements:** Claims severity may also increase if there is an increase in the size of claims settlements. Looking at the medical needs of a work-related condition over a Medicare beneficiary's remaining life expectancy, CMS may demand larger settlements than prior to the Section 111 reporting requirements. (See Case #1 in Section V.) Also, the rules that impose responsibility of exhausted settlements on claimants and claimants' attorneys could result in increased settlement demands. Insurers will need to ensure that settlement funds are being used for the claimant's medical expenses. An insurer may be responsible for the medical expenses even if the settlement funds are spent for other (nonmedical) uses.

B. Potential Financial Impacts

The most significant financial impacts are likely to be a need to increase case reserves for claims involving property-casualty claimants who are also Medicare beneficiaries. Any notable pricing impacts are likely to be limited to situations where Medicare beneficiaries comprise a notable share of the exposure.

- **Reserving impact (case reserves and IBNR reserves):** The cases in Section V are intended to illustrate the variety of situations that might arise under the increased reporting requirements for situations where Medicare is the secondary payer. Prior to the Section 111 reporting requirements, there were no reporting requirements, and consequently there was no process for CMS to identify and seek reimbursement from primary payers for payments for Medicare beneficiaries' medical treatments. Through the case illustrations, we will show how losses for insurers and self-insureds may increase now that CMS will have the information to seek reimbursement.
- **Pricing impact:**
    - There may be increases in the rates for classes of workers 65 and over that in the past may have had some medical expenses paid by Medicare. Examples may include certain retail and office-worker classes with a relatively older workforce for workers' compensation, and certain age groups for automobile coverages.
    - There may be increases in the rates for classes of workers who are more likely to receive serious injuries and who may seek coverage under the Social Security Disability Insurance (SSDI) program. With stricter reporting under Section 111,

these injured individuals will be directed back to an insurer or self-insured (and not the Social Security Administration) for payment.

There may be other areas where the increased reporting requirements are of concern to the practicing actuary but the overall impact is likely to be smaller than the impacts for the preceding points. These other points include reinsurance (and especially excess-loss considerations), financial statement reporting (e.g., 10-K statements), enterprise risk management, and capital-market volatility (e.g., changes in financial- or accounting-statement equity or market value).

C. Assumptions for Estimating the Impacts on Losses

For the case illustrations, broader financial impacts, and aggregate estimates, we relied on information that can be arranged into three broad areas, with differing implications as to the variability that may be observed in a particular book of business.

- First, we used reports from insurance industry and government agency sources for information on claim frequency and costs and worker demographics. This information was the starting point to illustrate the potential impacts for an average or typical book of business. Nevertheless, this injury and worker demographic information may need to be adjusted when calculating the impact for a specific book of business.
- Second, from discussions with actuaries and claims consultants, we developed estimates of case reserves for the case illustrations and the range of possible impacts for certain components of the aggregate estimates. To the extent injury severities and reserving practices differ across insurers and self-insureds, there will be differences across books of business. Also, the aggregate impacts that may be calculated in the future will reflect the differences in books of business and reserving practices, as well as the extent to which insurers and self-insureds may have been making medical payments for individuals 65 and over prior to Section 111.
- And third, from discussions with claim consultants and information from medical studies, we developed assumptions concerning the frequency and costs of medical services for certain low-frequency, high-cost medical treatments (such as a liver replacement or joint replacement). Injury severity and medical needs are likely to vary greatly across individuals needing these medical treatments, and these differences will have an impact on the cost estimates captured in our illustrations.

In sum, we used information from several types of sources and while we made efforts to use credible information for the illustrations, there will be departures in the actual experience and the extent of these departures is likely to be related to the general type of information.

IV. INTERVIEWS WITH CLAIMS CONSULTANTS AND ACTUARIES

Given little time has passed to accumulate enough experience to evaluate the financial impact of Section 111 reporting requirements for an insurer or self-insured, we interviewed several claims consultants and actuaries with recent experience performing claims reviews and actuarial analyses for books of business that include large numbers of claims for injured workers and individuals 65 and over. These interviews were intended to give insights into the financial impacts that may be observed in the next few years. For our interviews, we focused on the following six questions.

1. Since Section 111 was implemented are insurers settling fewer claims from Medicare beneficiaries (that is, are claims being kept open that would have normally settled prior to the reporting requirements)?
2. Since Section 111 was implemented, CMS appears to have become more vigilant in monitoring payments by primary payers and others that may be responsible for medical payments (such as claimants and claimants' attorneys). Have insurers seen an increase in the value of settlement demands from claimants and claimants' attorneys?
3. If insurers are seeing an increase in the value of settlement demands since Section 111 was implemented, what claims are most typically affected (e.g., claims with small, modest, or large payments)?
4. For insurers that have been reporting since Section 111 was implemented, is CMS disputing payments related to comorbidities that were paid by Medicare in the past?
5. Since Section 111 was implemented, have insurers changed their case reserving practices for Medicare beneficiaries?
6. Since Section 111 was implemented, have insurers changed their IBNR reserves for reasons that would be due to increased future payments for claims from Medicare beneficiaries?

The following points summarize the responses from our interviews.

- A Medicare Set-Aside Arrangement (MSA) is a voluntary financial agreement that allocates a portion of a settlement to pay for future medical services related to a claim.[19] CMS will only review MSA submissions where the claimant is a Medicare beneficiary and the total settlement is greater than $25,000 or the claimant has a reasonable expectation of enrolling for Medicare within the next 30 months and the total settlement is greater than $250,000. If a CMS-approved set-aside amount is exhausted, Medicare will pay primary for future Medicare-covered expenses related to the workers' compensation injury that exceed the

[19] In the past, MSAs have been limited to workers' compensation settlements. Recently, MSAs have started to be considered for settlements involving Medicare beneficiaries for other types of property-casualty coverages.

approved set-aside amount.[20] Insurers, self-insureds, and claimants used MSAs for workers' compensation for several years prior to the MMSEA legislation to establish some certainty to the payment of future medical treatments provided to Medicare beneficiaries. For claims prior to Section 111 covered by a CMS-approved MSA, the insurer or self-insured should be able to limit their losses to the CMS-approved MSA amount. However, if an insurer or self-insured did not use MSAs prior to Section 111, they may be more exposed to increased losses with the Section 111 reporting requirements. For claims without a MSA, CMS will be collecting information the agency can use to make demands for ongoing medical payments. Such ongoing payments may be for known treatments (for claims where the insurer or self-insured knew the injured worker was receiving medical care) or for unknown treatments (such as the case with a second knee replacement as described in Case #1 in Section V).

- The Workers' Compensation Medicare Set-Aside Arrangement (WCMSA) process is causing medical settlements for workers' compensation claims to be delayed, deferred, or forgone.[21] [22] (Also, because medical settlements are forgone, there are fewer indemnity settlements.) Generally, it is taking longer to achieve a medical settlement and in many (if not most) situations, multiple proposals are made to CMS before a WCMSA is accepted. In many situations, a submitted proposal that is not accepted is put aside by the insurer, revised at a later time with additional information gathered in the meantime, and then resubmitted to CMS.
- The increased oversight and claims monitoring that has been undertaken by CMS is overlaid on state insurance programs that are heavily influenced by state statutes and regulations. While CMS may be attempting to impose a consistent scheme for managing the federal Medicare program, state statutes and regulations concerning the handling of workers' compensation and liability claims are likely to lead to differences in the impact of the Section 111 reporting across states. In many states, the number of settlements has been significantly reduced, and in at least one state (Kentucky) there have been very few medical settlements in recent years.

[20] WCMSA Reference Guide, January 5, 2015, page 4.

[21] Although not directly part of the Section 111 reporting requirements, the set-aside process is a tool used by CMS to protect Medicare from payments that should be the responsibility of other liability coverages (such as workers' compensation, automobile, or homeowners). Medicare will review and approve a set-aside so the insurer or self-insured can proceed with a settlement that protects Medicare and resolves the primary payer from future exposure.

[22] The National Council on Compensation Insurance (NCCI) has reported that almost all MSAs are for claimants who are entitled to Medicare benefits at the time of settlement (NCCI, 2014, Slide 12).

- Another impact of the WCMSA process that is having an impact on Section 111 reporting is the increased use by insurers and self-insureds of third-party vendors to handle the filing and negotiations for the WCMSA with the CMS. While the services provided by these third-party vendors are helpful in obtaining a WCMSA (that is, if an arrangement is obtained), they are increasing loss adjustment expenses.
- For claims with settlements, there has been a lesser impact on small and mid-sized settlements from the period before Section 111 than on larger settlements. The large settlements as a group appear to be getting larger—that is, there is a longer tail to the distribution of settlement amounts.
- The preceding point notwithstanding, there are other factors that might influence the distribution of settlements, and these factors may have an offsetting effect. Treatment guidelines (including pharmaceutical formularies), as well as state statutes and regulations, may limit or control the amount of treatment, especially the use of opioid pain medications, provided to an injured worker. The implication is that the medical treatment administered to a Medicare beneficiary who experiences a work-related injury may be limited or controlled by the prevailing workers' compensation treatment guidelines or state regulations. Examples include limits and controls on the number of physical therapy treatments and the prior authorization requirements for certain types of treatment to ensure the medical necessity of the treatment.
- Under Section III, insurers and self-insureds are required to report the injury and illness diagnostic information for the medical care received by the injured individual. If an injured worker received medical treatment for a comorbidity that was reported to CMS as part of the treatment for the covered injury, the insurer or self-insured may be liable for future treatments for the comorbidity (even though the comorbidity was not caused by the covered incident). For example, suppose a worker with an injured back received treatment for obesity. If the insurer reports both the low back and obesity diagnoses, then CMS is likely to consider the treatment for obesity as due to a work-related condition and require reimbursement for future treatments the individual receives for obesity.[23] The issue with comorbidities becoming the responsibility of insurers and self-insureds has been observed in a small number of states and is a significant problem in California. Recently in California there has been an increased practice of listing multiple body parts as part of the injury

[23] An insurer can avoid this problem by limiting reports to CMS to the diagnoses for the covered injuries and illnesses. See Swedlow 2011 for additional examples.

description, with the range of listed body parts creating some suspicion. Because the insurer or self-insured may reject certain body parts that CMS accepts, this creates further uncertainty as to which party pays what costs.

- Although the claims specialists are not seeing an increase in case reserves for claimants 65 and over, they suspect it is because the reserve specialists do not have enough experience with the Section 111 reporting or the WCMSAs. In particular, there is not enough experience with the approved WCMSA settlements to form a basis to change reserving practices. The most typical situation is a reserve specialist leaving a claim open with no change in reserving practice, and then changing the reserve after a settlement is reached.
- Although the Medicare Set-Aside (MSA) process has been around since the 1990s, it was not available to liability coverages until after Section 111 went into effect. Also, different regional CMS offices have had different procedures for handling liability MSAs, so the ability of a primary payer to get an MSA has varied from region to region. To date, there have been very few MSAs for liability coverages other than workers' compensation.

V. CASE STUDIES

A. Introduction

In this section, we present 10 cases that may arise due to the Section 111 reporting requirements and require special attention from a casualty actuary. We developed the cases with the intention of showing a variety of situations across several lines of liability coverage, including workers' compensation, automobile, and homeowners, and to illustrate situations where the insurer or self-insurer had no knowledge of the medical treatment and the payments are for treatments that were not expected.

Each claim in the case illustrations satisfies the Section 111 reporting requirements.

Where appropriate (and for most cases), we address the following.

- **Profile:** The demographics of the individual (usually an individual 65 or over), line of insurance, and the nature and seriousness of the injury.
- **Medicare secondary payer:** The reasons an insurer or self-insured is likely to be responsible for paying the medical services, and in some cases why the insurer or self-insured may not be responsible for certain medical services.
- **Section 111 reporting implications:** The reason(s) the insurer or self-insured will be required to report the claim under the Section 111 provisions.
- **Significance for a casualty actuary:** The most prominent implications for a casualty actuary. In most instances, the implications concern reserving considerations.
- **Financial illustration:** Past and future (expected) information on the medical and disability payments for the injury, and in some cases a breakdown for the type of medical services.
- **Broader considerations:** For the workers' compensation cases, the case illustrations were extended to other similarly situated cases. For example, for the case concerning a work-related knee replacement, the discussion is extended to other joint replacements. For the case concerning lung cancer, the discussion is extended to claims with other types of cancer that might be attributed to a workplace exposure.

In the discussion of the case illustrations, we present two types of financial impacts.

1. The "financial illustration" concerns the case reserves that might have been expected prior to the Section 111 reporting requirements and the potential losses that might be expected given the new reporting requirements. The reserves are for a single case and presume the insurer was not making payments on the Medicare beneficiary's tail experience. The financial illustrations include the impact of tail costs. The case-specific financial illustrations are

intended to provide information concerning the potential magnitude of a special set of circumstances (i.e., the specific case). Care is needed when extrapolating the financial impacts of a specific case to all claims with the same injury or medical condition.

2. The "broader financial impacts" present a framework for developing the potential losses for a group of similarly situated claims. For the broader financial impacts, we take into consideration the frequency of the particular injury or medical condition, the representation of Medicare-eligible claims among all workers' compensation claims, the frequency of a particular injury or medical condition among all Medicare-eligible injured workers with the injury or medical condition, estimates for the case reserves before Section 111 reporting requirements, and potential losses with them in place now. These considerations are presented in templates in the case illustrations in which a casualty actuary can insert their own assumptions or experience to estimate the potential financial impacts of the Section 111 reporting requirements.

We made the following considerations to develop the broader financial impacts for the case illustrations for workers' compensation claims (Cases #1-#6 in this section).

1. We developed baseline case incurred losses for an injured population. We started with Unit Stat Plan data for California that provided incurred losses by body party, nature of injury, and cause of accident and converted the first-report incurred losses to U.S. ultimate losses. The purpose of the conversion from California to U.S. was to have U.S. ultimate losses by body part, nature of injury, and cause of accident for the case illustrations.
   We started with first-report, incurred losses from Unit Stat Plan data for California claims broken down by body part, nature of injury, and cause of accident. Although the California workers' compensation system is often regarded to have unusually high costs, present interest is with the distribution of injuries, distribution of costs, and relative costs across different categories of injuries, such as body part, nature of injury, and cause of accident.[24] The distribution of injuries by body part, nature of injury, and cause of accident were used for columns (1) and (2) for Cases #1-#4 and #6.
2. We used first-to-ultimate factors for the U.S. and California to convert the first-report, incurred losses for California claims to first-report, incurred losses for U.S. claims. We then used a first-to-ultimate factor for the U.S. to convert the first-report, incurred losses for the

[24] California has a large, diverse economy. We assumed that the distribution of injuries and relative costs between types of injuries in California can be generalized to the United States. Nevertheless, in the financial illustrations described later in this section, a user could adjust the distribution or relative costs of the injuries.

U.S. to an ultimate basis. These ultimate losses were used for the average incurred loss in column (3) for Cases #1-#4 and #6.

3. In developing the broader financial impacts, we made several assumptions concerning the incidence of Medicare-eligible workers that may be altered in the template depending on the book of business. We assumed that all injured workers 65 and over were Medicare-eligible and that injured workers 65 and over account for approximately 5% of all employed persons. (Column (5) for Cases #1-#4.)[25] The 65-and-over assumption permitted us to estimate the impact on an easily identified cohort of injured workers—65 and over. While there may be exceptions—in particular, workers receiving SSDI—we assumed most of the impact will be on the injured workers who are 65 and over.
4. In consultation with claims consultants and various data sources, we developed case estimates that would have been typical prior to the Section 111 reporting requirements (that is, without the tail experience). These pre-Section 111 case estimates appear in Column (8) for Cases #1-#4 and #6.
5. The potential losses include the additional losses that might have been missed (and consequently paid for by Medicare) prior to the Section 111 requirements. For some cases, these additional losses concern medical care likely to occur several years in the future and other losses may have been leakages in the system (such as when an injured worker relocated to a different state). These potential losses appear in Column (9) for Cases #1-#4 and #6.

The potential losses from the broader financial impact calculations are related to:

- Medicare-eligible injured workers with the injury or medical condition,
- All Medicare-eligible injured workers, and
- All injured workers.

When reviewing the broader financial impacts discussed below and working with this template, it is important to keep in mind that the potential losses will be sensitive to several points in the calculations.

- Frequency of claims with an injury to a particular body part, nature of injury, or cause of injury (Column (2) in Tables 4, 6, 8, 10, and 14),
- Average incurred costs (Column (3)),
- Percentage of injured workers who are eligible for Medicare (Column (5)),

[25] Discussion of the 5% assumption for workers 65 and over is provided in Part B and Table 21 in the next section.

- Percentage and number of Medicare-eligible who experience the injury or medical condition (Columns (6) and (7)),
- Pre-Section 111 case estimate (Column (8)), and
- Potential loss (Column (9)).

The assumptions for claim frequency, average incurred costs, and the percentage of injured workers who are Medicare-eligible were developed from government agency and insurance industry sources. These assumptions are generally market averages and likely to need adjusting for a particular book of business. Someone using these illustrations as templates for their own analysis should review these assumptions in light of the frequency, cost, and demographics for their book of business.

The assumptions concerning the incidence of Medicare-eligible with a particular injury or medical condition, case estimates, and potential losses were developed from based on information from property-casualty claim consultants and medical literature. While we worked to make these assumptions realistic, actual incidence and loss experience may be very different across different books of business. Someone using these templates for their own analysis should consult claim adjusters and medical professionals for information on the book of business under review.

Finally, while in the near term we expect the significant impacts will be on case reserves and IBNR reserves, actuaries should expect over time to see higher case reserves from claims adjusters for injured workers close to or over 65. However, it may take several years before case reserves are higher because (1) claims adjusters will need to become more familiar with CMS's procedures and (2) claims adjusters will need to gain experience with the tail of medical treatments for injured workers 65 and over.

B. 10 Case Studies

We developed 10 case studies to describe a sampling of the special circumstances that might come up with the Section 111 reporting requirements. The cases are summarized in Table 2.

Table 2 Summary of Case Studies

Case	Line of Business	Abstract	Relevance for Medicare Secondary Payer Status and Section 111 Reporting
1	Workers' compensation	Workers' compensation claimant with knee replacement	Future medical expenses that may be several years in the future.
2	Workers' compensation	Workers' compensation claimant with a needle-stick injury	Medical expenses for a slow-developing illness (hepatitis C with potential liver transplant).
3	Workers' compensation	Workers' compensation claimant with lung cancer	CMS may challenge settlement as inadequate for the life expectancy of a 66-year-old claimant.
4	Workers' compensation	Medicare beneficiary with a work-related injury relocates	Treating physicians at new location unaware of the workers' compensation claim submit bills directly to Medicare rather than to the workers' compensation insurer.
5	Workers' compensation	Workers' compensation claimant with long-term pharmaceutical prescription needs	Medicare Part D (pharmaceutical prescriptions) coverage is secondary to workers' compensation.
6	Workers' compensation	Workers' compensation claimant with a shortened life expectancy	CMS is challenging the settlement for not providing hospice care.
7	Automobile no-fault	Passenger in automobile accident covered by driver's no-fault automobile coverage	ORM for automobile insurer.
8	Automobile liability (other driver)	Medicare makes conditional payments for a 67-year-old automobile accident claimant	Conditional payments for TPOC claim.
9	Automobile	Automobile accident claimant with a traumatic brain injury	Case complicated by a preexisting Alzheimer condition.
10	Homeowners	Medicare beneficiary injured on neighbor's property	Primary care provider misreports injury as covered by Medicare.

Case #1: Workers' compensation claimant with knee replacement

Starting considerations

Case #1 concerns a Medicare beneficiary with a work-related injury that requires a joint replacement. Given the injured worker's age, the years of service that can be expected from a joint replacement, and the injured worker's life expectancy, it can be expected the joint replacement will require replacing in the future. Prior to Section 111 reporting requirements, the likely scenario was that a reserve was established and losses were paid for the first replacement and Medicare paid for subsequent replacements. Reporting procedures were not in place to associate the future replacements back to the work-related injury. The challenge with Section 111 reporting is that the casualty actuary will need to determine whether the present case reserves include amounts for future replacements or whether IBNR reserves will be needed for the additional losses. While this specific case concerns a knee replacement, it can be extended to include hip, shoulder, and ankle replacements, and more generally other types of durable medical equipment where the injured worker's life expectancy is longer than the expected years of service from the equipment.

Case profile

John is 66 years old with a work-related injury that requires a knee replacement. The injury is likely to be a permanent partial disability covered by workers' compensation. Given his life expectancy and the expected life of a knee replacement, it is likely the first knee replacement may require replacing in the future. Although several years will pass between the medical care treatments for the knee replacements, the workers' compensation insurer will be responsible for future knee replacements. While the claim was open, the insurer will have ORM and the claim will need to be reported to CMS per Section 111 reporting requirements. The claim is likely to settle and therefore there will be a TPOC. The insurer will be responsible for future knee replacements.

Financial illustration

Table 3 presents assumptions for the medical and disability payments that may occur with the present case. The first knee replacement is estimated to cost $56,550. Given the injured worker's life expectancy and expected years of service from a knee replacement, the workers' compensation insurer may also need to reserve for two additional replacements, for a total estimated cost of $169,650. Adding the expected disability payment of $125,000, the total estimated cost for this claim is $294,650, and consequently this claim would need to be reported under the Section 111 TPOC reporting requirements.

Broader considerations

The principal consideration with the present case is the need to consider future medical payments

for the knee replacements after the first replacement. [26] While the case describes a knee replacement, it can also relate to other cases in which a joint replacement is likely to require future replacements. In particular, an ankle, hip, or shoulder replaced because of a work-related incident may require additional replacements in the future.

Broader financial impact

Table 4 extends the financial illustration for a knee replacement to replacements for a shoulder, ankle, or hip. Column (1) presents the number of claims for the injured body part, column (2) presents the frequency distribution of claims across injured body parts, column (3) presents the average incurred loss (that is, case reserve), and column (4) presents the distribution of case-incurred losses. Column (5) presents the assumptions for the percentage of claims that are Medicare-eligible, column (6) presents the percentage of Medicare-eligible claims that will receive a joint replacement, and column (7) presents the number of Medicare-eligible claimants with a joint replacement. Column (8) presents current case reserves and column (9) presents new case reserves with Section 111 reporting.

The following points summarize the estimated financial impacts given the assumptions in Table 4.

- The increase in costs for Medicare-eligible beneficiaries with a knee, shoulder, ankle or hip injury is 18.8%.
- The increase in costs for all Medicare-eligible beneficiaries is 3.8%.
- The increase in costs across all injured workers is 0.1%.

[26] From a study by the American Academy of Orthopaedic Surgeons, the American Association of Retired Persons reported a 61% increase in total knee replacements (TKR) between 2004 and 2008 for men and women 45-64 years (American Association of Retired Persons). A study concerning the prevalence of TKRs in 2012 found that 4.1% of men and 4.9% of women 60-69 years have had a TKR, and 7.1% of men and 8.2% of women 70-79 years have had a TKR (Weinstein, et. al. 2012).

Table 3 Case #1: Workers' Compensation Claimant With Knee Replacement

Consideration	Commentary
Profile	66 years old, male, with a permanent partial workers' compensation (WC) injury that calls for 250 weeks of indemnity benefits, no home health aide or painkiller pharmaceutical products, but with a knee replacement that is likely to require two subsequent replacements in eight and 16 years.
Medicare secondary payer	Because the knee injury was caused by a work-related incident, the WC insurer will be responsible for the knee replacement and the rehabilitation care. The WC insurer will also be responsible for future knee replacements because the need for the replacements relates to the work-related injury.
Section 111 reporting implications	The injured worker is 66 years old, eligible for Medicare, and the medical costs are expected to exceed the reporting thresholds. Prior to the Section 111 reporting requirements, the knee replacement would likely have been paid for by the WC insurer but the follow-up rehabilitation care and future knee replacements may have been paid for by Medicare because there was not a systematic process for relating the future medical care back to the work-related injury.
Significance for a casualty actuary	Case reserves are likely to have been established for one knee replacement without taking into consideration the likelihood of future knee replacements.
Financial illustration	Assumed case reserves: Medical: • Knee replacement: $50,000 • Rehabilitation: $4,000 • Physical therapy: $2,550 Disability: $125,000 ($500/week, for 250 weeks) Total assumed case reserves: $181,550 Potential losses: Medical: • Two additional replacements in the future (every eight years) • Total: $169,650 ($56,550 x 3 replacements) Disability: $125,000 ($500/week, for 250 weeks) Total estimated loss: $294,650
Broader considerations	Although this case concerns a knee replacement, similar impacts can be considered for other types of joint replacements, including hip, shoulder, and ankle. As with the case described above, attention should be given to the distribution of injuries, frequency of future joint replacements, and costs associated with the future replacements.
Broader financial impacts	Potential impacts for Medicare-eligible beneficiaries with a joint replacement: • Increase in costs for all Medicare-eligible beneficiaries: 3.8% • Increase in costs across all injured workers: 0.1%

Table 4 Case #1: Workers' Compensation Claimants With Joint Replacements: Broader Financial Impacts

Part A: Development of the Potential Loss Under Section 111 Reporting

Injured Body Part	(1) # of Claims for a Book of 100,000 Claims	(2) % of Claims	(3) Average Incurred Loss	(4) % of Losses	(5) % of Claims Medicare-Eligible	(6) % of Medicare-Eligibles With Replacement	(7) # of Joint Replacements for Medicare-Eligible	(8) Pre-Section 111 Case Reserve	(9) Potential Loss
Lower extremities, knee	5,951	6.0%	19,449	8.8%	5.0%	6.0%	18	181,550	294,650
Upper extremities, shoulder	4,476	4.5%	22,540	7.6%	5.0%	1.0%	2	100,000	200,000
Lower extremities, ankle	3,406	3.4%	10,824	2.8%	5.0%	1.0%	2	100,000	200,000
Lower extremities, hip	746	0.7%	20,574	1.2%	5.0%	3.0%	1	100,000	200,000
Total, selected injured body parts	14,579	14.6%		20.4%			23	3,746,965	6,271,993
Total, all injured body parts	100,000		1,320,363,949		5.0%				
Change in case reserves									2,525,028

Part B: Potential Losses as a Percentage of Medicare-Eligible and All Workers

Impact	Change in Case Reserves	Total Incurred Losses	% Impact on Incurred Losses
Medicare-eligible with selected body parts	2,525,028	13,442,031	18.8%
All Medicare-eligible		66,018,197	3.8%
All injured workers		1,320,363,949	0.2%

Case #2: Workers' compensation claimant with a needle-stick injury

Starting considerations

Case #2 concerns a Medicare beneficiary who experienced a workplace injury that did not produce a serious medical condition until several years later. The case concerns a needle-stick injury which caused a hepatitis C exposure that did not develop into a chronic liver condition until several years after the injury. This case can be expected to be similar to other workplace injuries with a long-latency medical condition, including cumulative trauma and loss of hearing. (Work-related cancers caused by extended exposures to hazardous conditions or materials are covered in Case #3.)

Case profile

Ann is a 65-year-old healthcare worker who filed a workers' compensation claim two years ago following a needle-stick injury. Other than the initial and recurring tests for hepatitis, there was no significant medical treatment. However, shortly after becoming a Medicare beneficiary, Ann developed the early symptoms for hepatitis C, a condition that could lead to a liver transplant. Because this condition can be traced back to the needle-stick injury, CMS may seek payment from the workers' compensation insurer (or self-insured).

Financial illustration

Table 5 presents the assumptions for the medical and disability payments that may occur with the present case. Estimated medical costs for the needle-stick injury can be between $20,000 and $577,100, depending on whether Ann needs a liver transplant.[27] This uncertainty translates to a considerable uncertainty over the indemnity benefits, which have been estimated to be between $39,000 and $570,000. Consequently, total losses have been estimated to be between $59,000 and $1,147,100.

The insurer will need to monitor the medical services administered to Ann so that payment is limited to services related to the needle-stick injury. The insurer should not be responsible for medical services for other conditions (such as tests for comorbidity conditions, e.g., diabetes, hypertension), even if these tests were administered during visits when medical services were provided for treatment related to the needle-stick injury.

Broader considerations

Although there have been significant improvements in workplace safety procedures, workers in healthcare and correctional healthcare occupations, dental workers, and first responders (e.g., firefighters, police officers, and emergency medical technicians) continue to be exposed to needle-

[27] Bentley and Hanson 2011 reported that the estimated U.S. average billed charges for a liver transplant during 2011 was $577,100.

stick injuries. The Centers for Disease Control, the Food and Drug Administration, and the National Institute for Occupational Safety and Health have published information identifying several occupations with exposures to blood or other bodily fluids.[28] According to a report from the Canadian Public Health Association, 80% of those infected with the hepatitis C virus will develop lifelong symptoms, and about 20% who have lifelong symptoms will develop liver cirrhosis.[29]

Broader financial impact

For the broader financial impact, we included causes of injury that could give rise to needle-stick injuries (and puncture injuries, in general) and other causes that might include a penetration to the body that could lead to an organ transplant. We assumed Medicare eligible workers make up 5% of the injured worker population (column (5)) and that 0.5% of the needle-stick cases will require an organ transplant.[30] Finally, we used the case reserve and potential loss amount from the financial illustration for this case.

The following points summarize the estimated financial impacts given the assumptions in Table 6.

- The increase in costs for Medicare-eligible beneficiaries with a long-latency condition is 78.5%.
- The increase in costs for all Medicare-eligible beneficiaries is 1.4%.
- The increase in costs across all injured workers is 0.1%.

[28] Centers for Disease Control 2011, Food and Drug Administration 2012, National Institute for Occupational Safety and Health 2010.

[29] Canadian Public Health Association undated.

[30] Data from the US Bureau of Labor Statistics finds that, in 2014, 5.4% of employed persons were 65 years and over (see Table 21 in this report). The 0.5% assumption for organ transplants was made for illustrating the calculation of the potential financial impact.

Table 5 Case #2: Workers' Compensation Claimant With a Needle-Stick Injury That May Require a Liver Transplant in the Future

Consideration	Commentary
Profile	65 years old, female, healthcare worker who filed a claim following a needle-stick. Injured worker receiving recurring tests for the possibility that the needle-stick injury could lead to a hepatitis C condition. Initially, a medical-only claim with recurring treatments for the needle-stick tests and the possibility of a liver transplant in the future.
Medicare secondary payer	Medicare is the secondary payer for all medical treatments concerning the needle-stick injury, including all recurring tests and the liver transplant, if necessary.
Section 111 reporting requirements	The individual may be receiving Medicare benefits for treatments not associated with the needle-stick injury; however, the workers' compensation insurer (or self-insured) will be responsible for the ongoing medical treatments and would be responsible for the liver transplant that might occur in the future. The insurer or self-insured may seek a WCMSA; however, given the possibility of a liver transplant, CMS may expect an amount over $1,100,000, and the insurer may decide to keep the claim open and process under ORM.
Significance for a casualty actuary	If the individual later receives a liver transplant and it is not identified to the medical providers as caused by a work-related injury, then payments will be processed through Medicare. Prior to the Section 111 reporting requirements, this probably would have gone unnoticed by Medicare. The transplant would have been paid for by Medicare because CMS did not know the cause was a work-related injury from several years past. With the Section 111 reporting requirements, because of the insurer's obligation to report the claim CMS is aware that this is a work-related injury and payment for the subsequent transplant will be the responsibility of the workers' compensation insurer. Before Section 111 reporting requirements, the case reserve might have been $369,000. After the Section 111 reporting requirements, the case reserve may need to be over $1,100,000.
Financial illustration	Medical: $20,000 - $577,100 Disability: $39,000 - $570,000 Total estimated loss: $59,000 - $1,147,100
Broader considerations	Workers in healthcare and correctional healthcare occupations, dental workers, and first responders (e.g., firefighters, police officers, and emergency medical technicians) continue to be exposed to needle-stick injuries.
Broader financial considerations	Potential impacts for Medicare-eligible beneficiaries with a latent cause: • Increase in costs for all Medicare-eligible beneficiaries: 2.1% • Increase in costs across all injured workers: 0.1%

Table 6 Case #2: Workers' Compensation Claimants With a Needle-Stick Injury That May Require a Liver Transplant: Broader Financial Impacts

Part A: Development of the Potential Loss Under Section 111 Reporting

Cause of Injury	(1) # of Claims for a Book of 100,000 Claims	(2) % of Claims	(3) Average Incurred Loss	(4) % of Losses	(5) % of Claims Medicare-Eligible	(6) % of Medicare-Eligible Requiring a Liver Transplant	(7) # of Medicare-Eligible Requiring a Liver Transplant	(8) Pre-Section 111 Case Reserve	(9) Potential Loss
Cut, Puncture, Scrape or Injury By, NOC	3,335	3.3%	3,214	0.8%	5.0%	0.5%	0.8	59,000	1,147,100
Struck or Inj by - Fellow Workers, Patient or Oth Person	940	0.9%	10,182	0.7%	5.0%	0.5%	0.2	59,000	1,147,100
Absorption, Ingestion or Inhalation, NOC	646	0.6%	4,203	0.2%	5.0%	0.5%	0.2	59,000	1,147,100
Burn or Scald - Dusts, Gases, Fumes, Vapors or Radiation	228	0.2%	5,751	0.1%	5.0%	0.5%	0.1	59,000	1,147,100
Total, selected causes of injury	5,149	5.1%		1.8%			1.3	75,946	1,476,569
Total, all causes of injury	100,000		1,320,272,232		5.0%				
Change in case reserves									1,400,623

Part B: Potential Losses as a Percentage of Medicare-Eligible and All Workers

Impact	Change in Case Reserves	Total Incurred Losses	% Impact on Incurred Losses
Medicare-eligible with selected causes of injury	1,400,623	1,215,645	115.2%
All Medicare-eligible		66,013,612	2.1%
All injured workers		1,320,272,232	0.1%

Case #3: Workers' compensation claimant with lung cancer

Starting considerations

Case #3 concerns a Medicare beneficiary who developed a cancerous condition several years after being exposed to a cancer-causing agent. With closer tracking of medical treatments associated with workplace incidents, there will be greater opportunities for CMS to identify Medicare beneficiaries whose cancer may have been caused by a workplace exposure.

Case profile

Kevin, who is 66 years old, retired two years ago after working 20 years in the asbestos removal industry. At his last employer, where he worked for three years, Kevin held an inside supervisory position. After turning 65, Kevin was diagnosed with lung cancer, which his physician attributed to his 17 years of working in jobs where he was exposed to asbestos (the last exposure being over five years ago).

Financial illustration

Although he is a Medicare beneficiary, the workers' compensation insurer at the last exposure (Kevin's next-to-last employer) will be responsible for the medical payments. Kevin, his attorney, and the workers' compensation insurer have agreed to a $170,000 settlement, of which $118,000 is for medical expenses and $52,000 is for disability payments. CMS, however, is disputing that the medical provision is sufficient to cover Kevin's future medical expenses. Whether or not the insurer accepts the settlement, it will be required to report under Section 111 requirements. If the insurer does not agree to the $170,000 settlement, the insurer will be required to report this claim because the claim exceeds the $750 threshold for ORM payments. If the insurer agrees to the settlement, the insurer will be required to report this claim to CMS because the claim exceeds the TPOC threshold.

Broader considerations

Although the principal consideration with the present case is an exposure to asbestos, the circumstances can be extended to other workers exposed to cancer-causing agents. Examples include exposures to certain gases and fumes in the workplace and to large amounts of secondhand smoke and pollution, as well as to arsenic, paint or dyeing products, and radiation.[31,32]

It has been reported that approximately 20,000 cancer deaths and 40,000 new cases of cancer each year in the United States are attributable to a workplace exposure,[33] and 4% to 10% of all U.S. cancer cases are caused by occupational exposures.[34] The median age of cancer patients at diagnosis is

[31] American Cancer Society, 2007.
[32] National Institutes of Health, 2014.
[33] Centers for Disease Control and Prevention, 2013.
[34] Centers for Disease Control and Prevention, 2012.

66 years and 50% of all cancer patients are between the ages of 55 and 74 years when diagnosed with cancer.[35] Furthermore, exposures to carcinogens in the workplace may not result in cancer until 15 to 40 years after the exposure.[36] Finally, with additional testing, it can be expected that more chemicals will be identified as cancer-causing agents, which could increase the incidence of new cases in the future.[37]

Broader financial impact

For the broader financial impact illustration in Table 8, we assumed a pre-Section 111 case reserve of $20,000 and a potential loss of $200,000 for each of the cases that may become cancer claims. The columns and calculations in Table 8 are the same as described for Table 4 above. Briefly, column (1) presents the nature of injury conditions likely to be associated with a cancer claim, column (6) presents the assumptions for the incidence among Medicare beneficiaries, column (8) presents the case reserves before Section 111, and column (9) presents the potential losses with the Section 111 reporting requirements.

The following points summarize the estimated financial impacts given the assumptions in Table 8.

The increase in costs for Medicare-eligible beneficiaries with a long-latency condition is 81.0%

The increase in costs for all Medicare-eligible beneficiaries is 5.1%

The increase in costs across all injured workers is 0.3%

[35] Howlander, et. al, Tables 1-11 and 1-12.
[36] U.S. Department of Health and Human Services, Publication No. 2010-145.
[37] Centers for Disease Control and Prevention, 2013.

Table 7 Case #3: Workers' Compensation Claimant With Lung Cancer

Consideration	Commentary
Profile	66 years old, male, with a permanent total injury that is due to lung cancer, which was attributed to a workplace asbestosis exposure.
Medicare secondary payer	The workers' compensation insurer will be responsible for all medical expenses related to the asbestos exposure, even if the medical expenses exceed $118,000.
Section 111 reporting requirements	Whether or not the workers' compensation insurer settles, the insurer will be required to report the claim under Section 111. The claim exceeds the thresholds for both ORM and TPOC.
Significance for a casualty actuary	Although a typical case reserving workup may be performed for this case, attention will need to be given to the possibility that CMS considers the settlement inadequate to cover future medical expenses.
Financial illustration	Medical: $118,000 ▪ Surgery: $40,000 ▪ Chemotherapy: $30,000 ▪ Radiation: $48,000 ($2,000 per month) Disability: $52,000 over two years ($500 per week) Total estimated losses: $170,000 Complication: Although the injured worker, his attorney, and the WC insurer have agreed to a $170,000 settlement, CMS is not willing to agree to this amount.
Broader considerations	The circumstances in this case can be extended to other workers exposed to cancer-causing agents. Examples include exposures to certain gases and fumes in the workplace and to large amounts of secondhand smoke and pollution, as well as to arsenic, paint or dyeing products, and radiation.
Broader financial considerations	Potential impacts for Medicare-eligible beneficiaries with a long-latency condition: • Increase in costs for all Medicare-eligible beneficiaries: 5.1% • Increase in costs across all injured workers: 0.3%

Table 8 Case #3: Workers' Compensation Claimants With Cancer Attributable to Workplace Exposures: Broader Financial Impact

Part A: Development of the Potential Loss Under Section 111 Reporting

Nature of Injury	(1) # of Claims for a Book of 100,000 Claims	(2) % of Claims	(3) Average Incurred Loss	(4) % of Losses	(5) % of Claims Medicare-Eligible	(6) % of Medicare-Eligible With Slow-Developing Diseases	(7) # of Medicare-Eligible With Slow-Developing Diseases	(8) Pre-Section 111 Case Reserve	(9) Potential Loss
Asbestosis, Silicosis, Byssinosis, Black Lung	8	0.0%	4,301	0.0%	5.0%	50.0%	0.2	20,000	200,000
Cancer (incl Hepatitis Losses)	4	0.0%	17,772	0.0%	5.0%	50.0%	0.1	20,000	200,000
Carpal Tunnel Syndrome	652	0.7%	26,044	1.3%	5.0%	10.0%	3.3	20,000	200,000
Contagious Disease	142	0.1%	3,335	0.0%	5.0%	20.0%	1.4	20,000	200,000
Hearing Loss or Impairment	43	0.0%	10,332	0.0%	5.0%	5.0%	0.1	20,000	200,000
Mental Disorder, Psychiatric	150	0.1%	14,051	0.2%	5.0%	10.0%	0.7	20,000	200,000
Respiratory Disorders and Dust Disease, NOC	17	0.0%	8,976	0.0%	5.0%	10.0%	0.1	20,000	200,000
All Other Occ Dis Inj, NOC (incl VDT-Related)	178	0.2%	9,650	0.1%	5.0%	10.0%	0.9	20,000	200,000
All Other Cumulative Injury, NOC	2,388	2.4%	25,670	4.6%	5.0%	10.0%	11.9	20,000	200,000
Total, selected natures of injury	3,581	3.6%		6.3%			18.7	374,894	3,748,941
Total, all natures of injury	100,000		1,320,363,949		5.0%				
Change in case reserves									3,374,047

Part B: Potential Losses as a Percentage of Medicare-Eligible and All Workers

Impact	Change in Case Reserves	Total Incurred Losses	% Impact on Incurred Losses
Medicare-eligible with selected natures of inj	3,374,047	4,163,896	81.0%
All Medicare-eligible		66,018,197	5.1%
All injured workers		1,320,363,949	0.3%

Case #4: Medicare beneficiary with a work-related injury relocates to a different state

Starting considerations

Case #4 concerns a Medicare beneficiary who has been receiving medical treatment for a work-related injury and relocates to a different state (or to a different area within a state and changes treating physicians). While the injury was related to a workplace incident, it was a common, soft-tissue injury (e.g., back sprain) that was easily presumed to be a condition brought on by the aging process. When starting treatment in the new state, the Medicare beneficiary did not indicate the injury was the result of a work-related incident and the treating physician presumed Medicare coverage. Under Section 111 reporting requirements, the insurer will have to report the injury and CMS will be able to associate the medical treatment received in the relocation state to the workplace injury. This easier tracking is due to the ability of CMS to associate an individual's Social Security number (SSN) and diagnosis in the original state to the medical treatment received under the same SSN and diagnosis in the relocation state.

Case profile

Dan is 67 years old with a permanent partial workers' compensation injury for a back injury caused by a workplace fall from a ladder that occurred in 2010. His condition has stabilized but he continues to suffer periodic back pain that is lessened through physical therapy. Dan had been living in a Northern state but relocated to Florida six months ago. Shortly after relocating, Dan started receiving medical treatment for conditions not related to the back injury or the back pain. For those treatments, Dan identified himself as a Medicare beneficiary, the physician submitted the bills to Medicare, and Medicare paid for the treatment.[38]

Financial illustration

Recently, the back pain returned and Dan's physician prescribed a series of x-rays, a two-week course of painkillers, and three weeks of physical therapy. The physician bills Medicare. The Medicare benefits coordinator identifies the treatments for the back pain as related to the 2010 workplace injury, classifies the payments to the physician as conditional payments, and contacts the workers' compensation insurer in 2010 for payment.

[38] When a worker relocates, medical care continues to be subject to the regulations in the jurisdiction states, which is usually the state the injured worker resided in. Provisions such as the medical fee schedule for reimbursement, treatment guidelines, and prior authorization do not change with the relocation to a different state.

Broader considerations

Data from the U.S. Census Bureau report (2013, Table 2) indicates that 1% of not-employed persons 65 and over lived in a different county in 2013 than had been their residence in 2012. The 4% assumption takes into account that an individual may move over period of years.[39]

Broader financial impact

For the broader financial impact analysis, we selected injuries that often occur outside the workplace and where there is little likelihood of it being reported as a workplace injury. We assumed that 4% of the Medicare-eligible injured workers would relocate after being injured, case reserves for movers were $10,000 before Section 111, and that on average there could be an additional $5,000 in medical expenses after relocation, and consequently the potential medical losses were $15,000 for injured workers that relocated.[40]

The following points summarize the estimated financial impacts given the assumptions in Table 10.

- The increase in costs for Medicare-eligible beneficiaries who relocated to a different state and had work-related injuries that might have been paid by Medicare prior to Section 111 is 2.2%.
- The increase in costs for all Medicare-eligible beneficiaries is 0.9%.
- The increase in costs across all injured workers is 0.05%.

[39] U.S. Census Bureau (November 2013). Current Population Survey, 2013 Annual Social and Economic Supplement, Table 2.

[40] In a January 2010 NCCI report, for 2000-2006 claims, the average medical payment per claim for injured workers 65 and over was approximately $12,000 (not adjusted for inflation).

Table 9 Case #4: Medicare Beneficiary With a Work-Related Injury Relocates to a Different State

Consideration	Commentary
Profile	67 years old, male, with a permanent partial workers' compensation injury that causes periodic back pain, relocates to a different state. In the new location, the physician initially treats the individual for conditions not related to the back injury, but subsequently the individual needs treatment for back pain that can be attributed to the back injury.
Medicare secondary payer	The workers' compensation insurer will be responsible for the after-relocation medical treatments for the back pain that can be attributed to the back injury.
Section 111 reporting requirements	Given that the claim occurred after Section 111 reporting requirements became effective and that medical payments are greater than $750, this claim should be reported as an ORM.
Significance for a casualty actuary	Prior to the Section 111 reporting requirements, the workers' compensation insurer probably would not have known about the after-relocation medical treatments. Given the closer tracking with the Section 111 reporting requirements, the actuary can expect that CMS will be able to identify these claims but it may be difficult to establish case reserves for claims where an individual relocates. It may be prudent to establish an IBNR reserve that can be used for these types of cases.
Financial illustration	Medical (attributed to the workplace injury): Prior to relocating: $10,000 After relocating: $5,000 Total: Without the after-relocation medical: $10,000 With the after-relocation medical: $15,000
Broader considerations	This case can be extended to other cases where soft-tissue medical conditions (e.g., sprains and strains) are presumed to have been brought on by the aging process but can also be associated with a prior work-related incident. Prior to Section 111, medical providers in the new location may have presumed the soft-tissue condition was age-related. With Section 111 reporting, these medical treatments will be passed back to the workers' compensation insurer.
Broader financial considerations	Potential impacts for Medicare-eligible beneficiaries who relocate to a different state: Increase in costs for all Medicare-eligible beneficiaries: 0.9% Increase in costs across all injured workers: 0.05%

Table 10 Case #4: Medicare Beneficiaries With Work-Related Injuries Relocating to a Different State: Broader Financial Impact

Part A: Development of the Potential Loss Under Section 111 Reporting

Nature of Injury	(1) # of Claims	(2) % of Claims	(3) Average Incurred Loss	(4) % of Incurred Losses	(5) % of Claims Medicare-Eligible	(6) % Relocating With Further Medical Treatment	(7) # of Medicare-Eligible	(8) Pre-Section 111 Case Reserve	(9) Potential Loss
Strain or tear	25,757	25.8%	11,772	28.1%	5.0%	4.0%	52	10,000	15,000
Sprain or tear	12,188	12.2%	10,649	12.0%	5.0%	4.0%	24	10,000	15,000
Contusion	10,043	10.0%	6,430	6.0%	5.0%	4.0%	20	10,000	15,000
Laceration	11,918	11.9%	3,003	3.3%	5.0%	4.0%	24	10,000	15,000
Inflammation	2,705	2.7%	10,525	2.6%	5.0%	4.0%	5	10,000	15,000
Total, selected nature of injury	62,611	62.6%		52.1%			125	1,252,217	1,878,326
Total, all claims	100,000		1,320,595,999		5.0%				
Change in case reserves									626,109

Part B: Potential Losses as a Percentage of Medicare-Eligible and All Workers

Impact	Change in Case Reserves	Total Incurred Losses	% Impact on Incurred Losses
Medicare-eligible with selected natures of injury	626,109	28,091,662	2.2%
All Medicare-eligible		66,029,800	0.9%
All injured workers		1,320,595,999	0.05%

Case #5: Workers' compensation claimant with long-term pharmaceutical prescription needs

Starting considerations

Case #5 concerns a severely injured Medicare beneficiary who is expected to receive painkilling pharmaceutical prescriptions for the remainder of his life. Beginning January 1, 2006, Medicare drug coverage became available to anyone eligible for the Medicare program. Given that the Section 111 reporting requirements will include the identity of the Medicare beneficiary and the diagnosis, CMS will be able to associate payments submitted under Medicare Part D back to a work-related injury.

Case profile

Ken, who is 65 years old, has a work-related permanent total injury that is due to severe nerve damage to his upper and lower extremities. He does not require home healthcare services but will require painkilling pharmaceutical prescriptions for the remainder of his life. The insurer intends to close this claim with a lump sum settlement, which will exceed the TPOC threshold and thus subject it to the Section 111 reporting requirements.

The injured worker elected to purchase the additional coverage under Medicare Part D. The workers' compensation insurer will be responsible for the pain medication associated with the work-related injury but will not be responsible for pharmaceutical prescriptions for other conditions (such as diabetes or hypertension). The workers' compensation insurer can also expect to be responsible for medical treatments associated with the nerve damage to the injured worker's extremities.

Financial illustration

For the financial illustration, we assume there will be a physician visit semiannually, along with magnetic resonance imaging (MRI) and transcutaneous electrical nerve stimulation (TENS) sessions. We also assume weekly pharmaceutical prescriptions, indemnity payments, and a 20-year life expectancy. Prior to the Section 111 reporting requirements, if the pharmaceutical prescriptions were not fully reflected in the case reserves (because the injured worker might have made submissions for payment under Medicare Part D), the actuary would have been working with understated reserves. Under the Section 111 reporting requirements, the tracking system will inform CMS to monitor the pain-medication prescriptions associated with the workplace injury for the life of the injured worker.

Broader considerations

Payments for Part D coverage will be monitored in the same manner as payments for hospital and medical treatments covered by Medicare. For the broader financial impact calculations, we developed a pharmaceutical prescriptions payout pattern and assumed that, prior to Section 111, all prescription payments three or more years after the injury were paid by Medicare. The calculations

in Table 12 permit altering the payout pattern and share of the prescriptions paid by Medicare.

Broader financial impact

For the broader financial impact, we began with an ultimate medical payment amount and used medical development factors to develop the medical payment amounts in Part A, column (1) of Table 12 and the incremental medical payments in column (2). We used information on Rx payments by service year to develop the Rx payout shares of medical costs in column (3).[41]

The pharmaceutical prescription payments in Part A, column (4) are supported by two recent publications on pharmaceutical prescription payment experience for workers' compensation. First, from a study of 17 large states, the Workers Compensation Research Institute (WCRI) has reported that for claims with an average of 24 months of experience, pharmaceutical prescriptions account for between 1% and 7% of medical costs (where the median state payout was 3%).[42] Second, for accident years 2009 to 2011, NCCI has reported that pharmaceutical prescriptions account for 18% to 19% of total medical costs, which compares to the 17% share in the calculations in Part A (1,256 / 7,430 = 0.17).[43]

We assumed that, prior to the Section 111 reporting, the workers' compensation insurer paid for all pharmaceutical prescriptions through three years after the injury and for 70% of the prescriptions more than three years after the injury, and that Medicare paid for 30% of the pharmaceutical prescriptions more than three years after the injury. The 70% paid by the insurer can be attributed to lump sum arrangements (including Medicare Set-Aside Arrangements) that included amounts for long-term pharmaceutical prescriptions and claims where the insurer continued to make payments for prescriptions more than three years after the injury. The 30% paid by Medicare can be for workers' compensation claimants 65 and over who, more than three years after the injury, were receiving reimbursements from Medicare.

The following points summarize the estimated financial impacts given the assumptions in Table 12.

- The increase in costs for all Medicare-eligible beneficiaries is 5.7%
- The increase in costs across all injured workers is 0.3%

[41] NCCI, September 2013, Exhibits 2-3.
[42] WCRI, July 2011, Table L1.
[43] NCCI, September 2013, Exhibit 1.

Table 11 Case #5: Workers' Compensation Claimant With Long-Term Pharmaceutical Prescription Needs

Consideration	Commentary
Profile	65 years old, male, with a permanent total workers' compensation injury that does not require home health aide but will require pain medication for the remainder of his life. (Disability is severe nerve damage to the individual's upper and lower extremities.)
Medicare secondary payer	As with hospital and medical treatments covered by Parts A and B under Medicare, pharmaceutical prescriptions covered by Part D are secondary to workers' compensation coverage.
Section 111 reporting requirements	The insurer intends to settle the claim and, because the amount is expected to be greater than the TPOC threshold, the insurer will be required to report the claims under Section 111 reporting requirements.
Significance for a casualty actuary	After the initial years following an injury, payments for pharmaceutical prescriptions account for a considerable amount of medical payments. Prior to Section 111, over time the pain medication needs for the injury might have been included in the individual's other medications (e.g., for diabetes, hypertension) and inadvertently paid for by Medicare. Based on historical experience, case reserves might have only provided for only a few years of prescriptions.
Financial illustration	Medical: ▪ Semiannually: 1 physical visit, 1 MRI treatment, 1 TENS treatment ▪ Weekly: pharmaceutical products ($150/week x 52 weeks = $7,800 annually) ▪ Total: $279,600 over 20 years ($13,980 annually) Disability: $520,000 over 20 years ($500 per week) Total settlement: $799,600
Broader considerations	Payments for Part D coverage will be monitored in the same manner as payments for hospital and medical treatments covered by Medicare. The broader considerations concern all claims with pharmaceutical prescriptions, regardless of the injured body part or nature of injury. The impacts are likely to concern the timing of prescription payments from the date of injury.
Broader financial considerations	Potential impacts for Medicare-eligible beneficiaries with long-term pharmaceutical prescription needs: • Increase in costs for all Medicare-eligible beneficiaries: 5.7% • Increase in costs across all injured workers: 0.3%

Table 12 Case #5: Workers' Compensation Claimants With Long-Term Pharmaceutical Prescription Needs: Broader Financial Impact

Part A: Development of Prescription Payments by Service Year

Service Year	(1) Medical Costs	(2) Incremental Medical Costs	(3) Rx as a Share of Incremental Medical Costs	(4) Rx Amount
1	2,283	2,283	3%	68
2	4,283	2,000	5%	100
3	4,917	634	10%	63
4	5,241	325	16%	52
5	5,446	204	22%	45
6	5,598	152	29%	44
7	5,716	118	34%	40
8	5,818	103	36%	37
ultimate	7,430	1,612	50%	806
Total				1,256

Part B: Development of the Potential Loss Under Section 111 Reporting

Type of Claim	(1) # of Claims	(2) Total Ultimate	(3) Medical Ultimate	(4) Rx Ultimate	(5) Rx Through 3 Years plus 70% of Rx After 3 Years	(6) % of Claims Medicare-Eligible	(7) # of Medicare-Eligible	(8) Pre-Section 111 Rx	(9) Potential Loss
All claims	100,000	12,678	7,431	1,256	539	5%	5,000	2,695,000	6,279,214
Change in reserves									3,584,214

Part C: Potential Losses as a Percentage of Medicare-Eligible and All Workers

Impact	Change in Case Reserves	Total Incurred Losses	% Impact on Incurred Losses
All Medicare-eligible	3,584,214	63,390,000	5.7%
All injured workers		1,267,800,000	0.3%

Case #6: Workers' compensation claimant receiving SSDI with a shortened life expectancy

Starting considerations

In some cases, the injured worker or claimant need not be 65 in order to be a Medicare beneficiary. People younger than 65 with certain disabilities or kidney failure can also apply for Medicare. Moreover, for purposes of determining future medical cost estimates, the life expectancy of the individual is taken into consideration.

Case profile

Ron, who is 45 years old, suffered an extensive third-degree burn in an industrial accident that has significantly shortened his life expectancy and he will require hospice care. He has applied for and expects approval for SSDI for at least 24 months; however, SSDI is a secondary payer to the workers' compensation coverage. If he is approved and becomes a Medicare beneficiary, the primary payer will need to report this claim to CMS under Section 111 reporting requirements.

The injured worker and the workers' compensation insurer have reached a settlement agreement that includes an amount expected to cover future medical costs and disability payments. However, Medicare may reject the settlement because there is no provision for hospice care, and Medicare pays for certain types of hospice care.

Financial illustration

Assuming that all past surgeries have been paid for by the primary payer (e.g., surgical skin grafts, etc.) and that the injured worker is now in "medical maintenance" mode, the future medical projections should include all Medicare-eligible medical treatment costs, including covered hospice care. The age of the claimant should be adjusted to reflect a reduced life expectancy.

Broader considerations

It is not uncommon for casualty insurance professionals to think of Medicare as benefits for the elderly. However, it is important to be familiar with the eligibility requirements with respect to end-stage renal disease and particularly with respect to SSDI as they can also trigger Medicare and in turn the Section 111 reporting requirements. When settling the future medical aspects of a claim, the life expectancy of the claimant should be taken into account if preparing a life care plan. Remember to include all components of future care that are covered by Medicare, including hospice care.

Broader financial impact

For the broader financial impact, we started with causes of injury that may be associated with injured workers who also are receiving or may apply for SSDI. We assumed that 2% of these workers are eligible for SSDI and that 10% of the workers eligible for SSDI filed a workers' compensation claim.

The following points summarize the estimated financial impacts given the assumptions in Table 14.

- The increase in costs for all Medicare-eligible beneficiaries is 2.9%.
- The increase in costs across all injured workers is 0.1%.

Table 13 Case #6: Workers' Compensation Claimant Receiving SSDI With a Shortened Life Expectancy

Consideration	Commentary
Profile	45 years old, male, with a permanent total injury that is due to a third-degree burn that will require recurring monitoring and hospice care. Given the severity of the injury, the injured worker applied for and is eligible for SSDI payments.
Medicare secondary payer	Workers' compensation insurer will be responsible for the initial treatments and potential complications. Also, the workers' compensation insurer may be responsible for the hospice care.
Section 111 reporting requirements	Because the settlement is for a one-time payment, the Section 111 reporting requirements for TPOC apply. The one-time payment exceeds the threshold, and consequently the workers' compensation insurer will be required to report. However, as indicated above, CMS may not accept the proposed settlement because it is perceived to be inadequate.
Significance for a casualty actuary	Although a typical case reserving workup may be performed for this case, attention will need to be given to the possibility that the workers' compensation insurer will be responsible for the hospice care.
Financial illustration	Medical: Without complications, $1,617,000. ▪ Five potential complications: – Disfigurement, scarring: $28,000 - $35,000 – Psychological: $16,000 - $75,000 – Fragile skin or skin breakdown: $38,000 - $107,000 – Infections, including pneumonia or organ failure: $58,000 - $120,000 – Delayed wound healing or skin graft failure: $37,000 - $110,000 – Total: $1,929,000 (without complications) Disability: $650,000 over 25 years ($500 per week) Total estimated losses: $2,267,000 (which is challenged by Medicare for not providing for hospice care)
Broader considerations	It is important to be familiar with the eligibility requirements with respect to end-stage renal disease and particularly with respect to SSDI as they can also trigger Medicare and in turn the Section 111 reporting requirements. When settling the future medical aspects of a claim, the life expectancy of the claimant should be taken into account if preparing a life care plan, including hospice care.
Broader financial considerations	Potential impacts to consider: • Frequency of workers' compensation claims with SSDI • Life expectancy for workers' compensation claims with SSDI

Table 14 Case #6: Workers' Compensation Claimant Receiving SSDI With a Shortened Life Expectancy

Part A: Development of the Potential Loss Under Section 111 Reporting

Cause of Injury	(1) # of Claims	(2) % of Claims	(3) Average Incurred Loss	(4) % of Incurred Losses	(5) % of Workers SSDI-Eligible	(6) % of SSDI-Eligible With WC Claim	(7) # of Medicare-Eligible	(8) Pre-Section 111 Case Reserve	(9) Potential Loss
Burn or Scald - Electrical Current	126	0.1%	11,194	0.1%	2.0%	10.0%	0.3	100,000	225,000
Burn or Scald - Fire or Flame, Hot Objects, Radiation	773	0.8%	5,946	0.3%	2.0%	10.0%	1.5	100,000	225,000
Caught In - Machine or Machinery	723	0.7%	20,200	1.1%	2.0%	10.0%	1.4	100,000	225,000
Fall - From Ladder or Scaffolding	1,252	1.3%	32,187	3.1%	2.0%	10.0%	2.5	100,000	225,000
Struck or Injured By - Moving Parts of Machine	219	0.2%	12,477	0.2%	2.0%	10.0%	0.4	100,000	225,000
Total, selected cause of injury	3,093	3.1%		4.8%			6.2	618,533	1,391,699
Total, all claims	100,000		1,319,772,191		2.0%				
Change in case reserves									773,166

Part B: Potential Losses as a Percentage of Medicare-Eligible and All Workers

Impact	Change in Case Reserves	Total Incurred Losses	% Impact on Incurred Losses
Medicare-eligible with selected causes of injury	773,166	1,272,737	60.7%
All Medicare-eligible		26,395,444	2.9%
All injured workers		1,319,772,191	0.1%

Case #7: Passenger in automobile accident covered by driver's no-fault automobile coverage

On March 1, 2014, Nancy, who is 65, was a passenger in her daughter's vehicle when they were involved in an accident in which Nancy's daughter was driving the vehicle. Nancy's injuries required emergency room medical treatment at a local hospital. The daughter has personal injury protection/medical payments (Med Pay) coverage as part of her automobile insurance. The hospital bill for Nancy was $1,500, of which $900 was covered by the no-fault automobile insurance policy. Although there is ongoing medical and the TPOC threshold for automobile liability insurance was $2,000 at the time of the accident, Nancy's automobile insurer is required to report this claim under Section 111 because there is no threshold for TPOC claims for no-fault coverages.

Table 15 Case #7: Passenger in Automobile Accident Covered by Driver's No-Fault Automobile Coverage

Consideration	Commentary
Profile	Nancy, who is 65, was injured in an accident on March 1, 2014 while a passenger in her daughter's car, which the daughter was driving. Nancy's injuries required emergency room medical treatment at a local hospital. The daughter has personal injury protection/medical payments (Med Pay) coverage as part of her automobile insurance.
Medicare secondary payer	While at the hospital emergency room, the mother is asked about available coverage related to the accident and tells the hospital that her daughter has Med Pay coverage. Because this coverage pays regardless of fault, it is considered no-fault insurance. The hospital bills the no-fault insurance for the emergency room services, and only bills Medicare if any Medicare-covered services are not paid for by the no-fault insurance.
Section 111 reporting requirements	Because this was no-fault coverage, the daughter's automobile insurer is required to report the claim under the no-threshold provision for TPOC claims of Section 111. For claims occurring between October 1, 2013, and October 1, 2014, the TPOC threshold is $2,000 for liability and workers' compensation claims. However, there is no threshold for payments covered by no-fault insurance.
Significance for a casualty actuary	Assuming there are no further complications to the mother, there are no ultimate loss implications.
Financial illustration	The hospital bill was for $1,500, of which $900 was covered by the automobile insurer.

Case #8: Medicare makes conditional payments for a 67-year-old automobile accident claimant

Joan is 67 years old and is driving her car when someone in another car hits her. Joan is taken to the hospital for treatment.[44] The hospital tries to bill the other driver's liability insurer for $30,000 but the insurer disputes liability and does not pay the claim. Medicare makes a conditional payment of $20,000.

The claim is settled with the other driver's liability insurer for $200,000. Joan, her attorney, and the liability insurer will be responsible for making sure that Medicare receives the $20,000 conditional payment made to the hospital.

[44] This case was developed from an example in Centers for Medicare and Medicaid Services (April 2014), Medicare & Other Health Benefits: Your Guide to Who Pays First, p. 18.

Table 16 Case #8: Medicare Makes Conditional Payment for a 67-year-old Automobile Accident Claimant

Consideration	Commentary
Profile	Joan is driving her car when someone in another car hits her and she has to go to the hospital.
Medicare secondary payer	The hospital tries to bill the other driver's liability insurer but the insurance company disputes liability and does not pay the claim right away. The hospital bills Medicare $30,000, and Medicare makes a conditional payment to the hospital of $20,000 for healthcare services received by Joan.
Section 111 reporting requirements	Prior to Section 111, the $20,000 paid by Medicare had a decent chance of not being repaid by the liability insurer because CMS would not have known there was an insurance settlement. With Section 111 reporting requirements in effect, the liability insurer is required to report the settlement. CMS will track the claim and identify that a conditional payment was made and demand repayment.
Significance for a casualty actuary	If all of the $20,000 that CMS paid was related to the accident, then the entire $20,000 needs to be paid back to Medicare. If some of the $20,000 was for treatment unrelated to the accident, then only the part related to the accident gets paid back. The insurer should set up a reserve for this claim when the insurer knew about the exposure. The insurer should expect to be responsible for the conditional payment and the additional amounts related to the accident.
Financial illustration	The claim is settled for $200,000, of which $20,000 will need to be paid to Medicare for the conditional payment made for medical treatment in the hospital. Joan, her attorney, and the liability insurer will be responsible for making sure that Medicare receives its money for the conditional payment.

Case #9: Automobile accident claimant with a traumatic brain injury that aggravated an existing Alzheimer condition

Kate is 70 years old and suffered a traumatic brain injury caused by an automobile accident. Kate was receiving medical care for the early stages of Alzheimer prior to the accident. Since the accident, Kate's Alzheimer condition has accelerated and she will require home health care in the near future.

As the liable party, the automobile insurer will be responsible for the hospitalization and medical treatments directly related to the automobile accident. Medicare should pay for the medical treatments related to the Alzheimer condition but does not cover all types of home healthcare services. Medicare covers services such as intermittent skilled nursing care and physical therapy but does not cover 24-hour-a-day care or meals delivered to the home.[45] Given the uncertainties concerning the apportionment for the acceleration of the Alzheimer condition, the insurer may need to establish a case reserve or increase IBNR reserves.

[45] Centers for Medicare and Medicaid Services, Your Medicare Coverage.

Table 17 Case #9: Automobile Accident Claimant With a Traumatic Brain Injury That Aggravated an Existing Alzheimer Condition

Consideration	Commentary
Profile	70 years old, female, with a traumatic brain injury (TBI) caused by an automobile accident. Prior to the accident she was receiving medical care for the early stages of Alzheimer, paid for by Medicare. The TBI from the automobile accident accelerated the Alzheimer condition and the woman will require home health care in the near future.
Medicare secondary payer	As the liable party, the automobile insurer will be responsible for the hospitalization and medical treatments directly related to the automobile accident. Medicare should pay for the medical treatments related to the Alzheimer condition but does not cover all types of home healthcare services.
Section 111 reporting requirements	Given the uncertainty with a settlement, this claim will be reported under Section 111 as an ORM. If there is a settlement, the claim will become a TPOC.
Significance for a casualty actuary	Given the uncertainties concerning the apportionment for the acceleration of the Alzheimer condition, a case reserve or an increase in IBNR reserves may be needed.
Financial illustration	Medical: • Hospitalization and medical treatments that are due to the accident: $70,000 • Home healthcare: $15,000 per year • Medical treatments related to the Alzheimer condition: $12,000 per year

Case #10: Medicare beneficiary injured on neighbor's property

Mary, who is 72 years old, falls and twists her ankle while visiting a neighbor's yard sale. Mary goes to her primary care provider, who has a series of x-rays performed, prescribes a two-week course of painkillers, and then refers Mary to a physical therapist. The primary care provider, radiology laboratory, and physical therapist submit the medical bills to the neighbor's homeowner insurer, which pays for the treatments. Mary submits her pharmaceutical prescriptions to Medicare for payment under Part D coverage.

The medical bills for the primary care provider, radiology laboratory, and physical therapy are $950, and consequently the homeowner insurer will need to report the claim to CMS because the payment exceeds the ORM threshold. Furthermore, with the information reported to CMS, the agency will be able to associate Mary's pharmaceutical prescriptions with the treatments paid to the medical providers. CMS will consider the payment for the prescriptions to be a conditional payment and pursue the homeowner insurer for reimbursement.

Table 18 Case #10: Medicare Beneficiary Injured on Neighbor's Property

Consideration	Commentary
Profile	72 years old, female, twists her ankle while on her neighbor's property. The injury requires medical attention, radiology tests, pain medication, and physical therapy.
Medicare secondary payer	The neighbor's homeowner insurance policy covers medical expenses for individuals injured on the neighbor's property.
Section 111 reporting requirements	The claim must be reported under Section 111 because, as an ORM claim, the total medical payments are greater than $750.
Significance for a casualty actuary	Prior to Section 111, it is likely that the homeowner's insurer would not have known about the payment for the pharmaceutical prescriptions With the reporting under Section 111, CMS will consider this payment to be a conditional payment and pursue the homeowner's insurer for reimbursement.
Financial illustration	Medical: ▪ Primary care provider: $350 ▪ Radiology tests: $300 ▪ Prescription painkillers: $175 ▪ Physical therapy: $300 Disability: $0 Total estimated costs: $1,025

C. Summary

For the six workers' compensation illustrations above, we presented a template for estimating the impact of the Section 111 reporting requirements on losses where Medicare has been making payments and has not been reimbursed by the property-casualty insurer or self-insured. While the case illustrations are not exhaustive, the cases captured situations that should produce the largest impacts on losses. The cases include medical conditions with unusually adverse experience after age 65, the tail for pharmaceutical prescription costs, and cases where a Medicare beneficiary relocated to a different state. Nevertheless, the present set of cases does not exhaust all possibilities, and consequently the total impacts of Section 111 are likely to be greater than the sum of the broader financial impacts in the case illustrations.

Table 19 presents the estimated impacts on losses for the six scenarios. For example, for joint replacements (Case Number 1), we estimated that approximately 15% of all Medicare beneficiaries incur a knee, shoulder, ankle, or hip injury that could lead to a joint replacement and injuries to these four body parts account for approximately 20% of all incurred losses for claims from Medicare beneficiaries.[46] For the small number of such injuries that result in a joint replacement, we estimated that CMS's ability to associate the joint replacement back to a primary payer could increase losses for injured workers 65 and over with a knee, shoulder, ankle, or hip injury by approximately 18.8%, by approximately 3.8% for all workers 65 and over, and by approximately 0.2% for workers of all ages.[47] Depending on the condition or type of injury addressed by the case illustration, we estimated the impact to be an increase of total losses between 0.9% and 5.7% for workers 65 and over, which translated into increases of 0.1% to 0.3% for all workers of all ages. These scenarios assume Medicare has been making payments and has not been reimbursed by the insurer or self-insured.

The total impacts of Section 111 could be greater than the sum of the broader financial impacts in the case illustrations. First, the present set of cases does not exhaust all possibilities and the estimated impacts are very sensitive to the underlying assumptions, particularly the assumptions concerning the covered conditions, percentage of Medicare-eligible claimants, and the case reserves prior to and after the Section 111 reporting requirements. Also, the primary purpose of the case illustrations and broader financial impact discussions was to present a set of cases with special circumstances that might come up under Section 111 and a template for evaluating the potential impacts on Medicare-eligible and all injured-worker losses. Finally, the case illustrations focused on

[46] The share of and average costs of knee, shoulder, ankle, and hip injuries were from unit statistical plan data.

[47] The presumption here (as with the other estimated impacts) is that prior to Section 111 CMS paid for the medical services and did not receive reimbursement from the primary payer. This presumption is because CMS did not have the tracking system for medical payments (and particularly for diagnoses) that was created to support the reporting requirements in Section 111.

situations where the insurer or self-insurer was not likely to be aware of the medical treatment. There will be situations where medical treatment was known but payment was made under Medicare and CMS did not have the means to identify the primary payer.

Table 19 Summary of Broader Financial Impacts From Case Illustrations for Workers' Compensation

Case Number	Type of Injury/Condition	% of Medicare-Eligible Claims	% of Incurred Losses for Medicare-Eligible Claims (prior to Section 111)	Impact on Incurred Losses for -		
				Medicare-Eligible With Condition/Type of Injury	All Medicare-Eligible	All Workers
1	Knee, shoulder, ankle, hip injury leading to a Joint replacement	14.6%	20.4%	18.8%	3.8%	0.2%
2	Long latency	5.1%	1.8%	115.2%	2.1%	0.1%
3	Lung cancer	3.6%	6.3%	81.0%	5.1%	0.3%
4	Medicare beneficiary relocates	62.6%	52.1%	2.2%	0.9%	0.05%
5	Pharmaceutical	100.0%	9.9%	N/A	5.7%	0.3%
6	SSDI	3.1%	4.8%	60.7%	2.9%	0.1%

VI. ESTIMATES FOR AGGREGATE IMPACTS ON LOSSES

A. Background

In the two preceding sections, we looked into specific issues and situations where the Section 111 reporting requirements might have an impact on an insurer's or self-insured's costs. The industry experts indicated that Section 111 could decrease the use of lump sum settlements, increase the time to reach a lump sum settlement, and increase the size of settlements (partially due to the Medicare Set-Aside Arrangements). With the case illustrations, we described ten situations likely to increase the liabilities for an insurer or self-insured. The results for the six workers' compensation cases for which we developed estimated impacts are summarized in Table 19. Assuming these cases are generally mutually exclusive, the summed impact would be an approximately 21% increase in total losses (medical and indemnity) for Medicare-eligible workers, which could translate into a 37% increase in incurred medical losses.

These results were background for aggregate estimates we developed for workers' compensation for a hypothetical insurer or self-insured. We present in this section a base case where there is no change in prior settlement practices. We started with claims classified as medical-only, lost-time with no lump sum, and lost-time with lump sum. For each claim type, we developed assumptions for low, moderate, and high impacts on average medical losses. For the medical-only claims, we assumed increases of 5%, 10%, and 15% for average medical losses. For lost-time claims with no lump sum, we assumed increases of 10%, 15%, and 20%, and for lost-time claims with lump sum we assumed increases of 15%, 25%, and 40%.

We developed a second set of aggregate estimates assuming a 50% decrease in the incidence of lump sum claims – that is, we assumed that some claims that might have settled as low or medium range lump sums would stay open as lost-time claims with no lump sum. We also assumed a larger impact on the incurred medical losses. For lost-time claims with no lump sum, we assumed low, moderate, and high impact increases of 15%, 20%, and 25%, respectively. For lost-time claims with lump sum, we assumed increases of 25%, 40%, and 50%.

In this section, we describe related research and the underlying assumptions using information on the population, labor market, and loss experience for the workers' compensation and automobile lines.

B. Future Exposure Considerations: Population and Employment Trends

For the present discussion, the bulge of the Baby Boom that followed World War II is important because it creates increasing shares of individuals 65 and over in the population and among employed persons, and this could increase payments in Medicare Secondary Payer (MSP) situations.

An increase in the number of persons 65 and over could increase the number of automobile and liability insurance claimants in this age group. Further, while workers 65 and over are considered to account for only 5% of all workers' compensation losses in Accident Year 2013, this share could increase as relatively more workers enter the 65 and over group. On a calendar year basis, this percentage will also increase as workers who were injured at earlier ages reach age 65.

Table 20 presents the population totals for all ages and persons 65 and over for 1965 through 2050. While persons 65 and over accounted for approximately 10% of the U.S. population when Medicare was enacted, this age group accounted for 13% of the U.S. population in 2010 and is projected to increase to 16% of the U.S. population by the end of this decade. The significance of these trends is that larger shares of automobile claims and claims for other liability coverages are likely to involve MSP situations.

Table 20 Number of Persons, All Ages and 65 and Over: 1965-2050

	(1)	(2)	(3)	(4)	(5)
	U.S. Population				
	All Ages		65 and Over		
Year	# of Persons	Change From Prior Period	# of Persons	Change From Prior Period	% of All Ages
1965	191.3	---	18.3	---	10%
1970	203.2	6%	20.1	10%	10%
1980	226.5	11%	25.5	27%	11%
1990	248.7	10%	31.2	22%	13%
2000	281.4	13%	35.0	12%	12%
2010	310.2	10%	40.2	15%	13%
2020	341.4	10%	54.8	36%	16%
2030	373.5	9%	72.1	32%	19%
2040	405.7	9%	81.2	13%	20%
2050	439.0	8%	88.5	9%	20%

Note: Number of persons in millions.
Source: U.S. Census Bureau.

Table 21 presents the number of employed persons 16 and over and 65 and over for 1965 through 2014. Since Medicare was enacted, the number of employed persons 65 and over has more than doubled—from 3.0 million in 1965 to 8.0 million in 2014, with most of this increase occurring in the last decade. When Medicare was enacted, 4.2% of employed persons were 65 and over, and this share remained below 4% until the middle of the last decade. As of 2010, the share of employed persons 65 and over increased to 4.5%, and has increased in each of the past four years. In 2014, 5.4% of U.S. employment was 65 and over.

Table 21 Number of Employed Persons, 16 and Over and 65 and Over: 1965-2014

	(1)	(2)	(3)	(4)	(5)	(6)
	Employment					
	16 and over		65 and over			
Year	# Employed	Change From Prior Period	# Employed	Change From Prior Period	% of 16 and Over Employment	Employment-Population Ratio
1965	71.1		3.0		4.2%	16.4
1970	78.7	11%	3.1	4%	4.0%	15.5
1980	99.3	26%	3.0	-5%	3.0%	11.6
1990	118.9	20%	3.4	14%	2.8%	10.8
2000	136.9	15%	4.2	24%	3.1%	11.9
2010	139.1	2%	6.3	50%	4.5%	15.6
2011	139.9	1%	6.6	6%	4.8%	----
2012	142.5	2%	7.2	9%	5.1%	----
2013	143.9	1%	7.7	6%	5.3%	----
2014	146.3	2%	8.0	4%	5.4%	----

Note: Number of persons in millions.
Source: U.S. Bureau of Labor Statistics.

C. Comorbidities and the Reporting of Diagnoses Under Section 111

Comorbidities, such as obesity, hypertension, and diabetes, can add significant costs to work-related injuries. In a study using a nationwide sample of medical payment transactions, NCCI reported that the share of workers' compensation claims with a comorbidity diagnosis nearly tripled between Accident Year 2000 and Accident Year 2009 (from 2.4% to 6.6%).[48] This study also reported that injured workers with a comorbidity diagnosis are typically older than other injured workers and the initial comorbidity diagnosis tends to occur early in the life of a claim. Finally, injured workers with a comorbidity diagnosis have about twice the medical costs of otherwise comparable claims. In a recent study of claims in California with dates of injury between January 2002 and September 2013, CWCI found that the obesity comorbidity was among the top 10 factors causing the increase in medical costs since the second quarter of 2007.[49]

Diagnoses not related to the work-related injury may have implications on a workers' compensation payer's liabilities under the Section 111 reporting requirements. In the preceding section on case illustrations, we described situations where the present work-related injury may have future medical expenses that may have gone undetected prior to Section 111 reporting requirements.

[48] NCCI 2012.
[49] CWCI 2014.

However, Section 111 may also have implications associated with the scope of diagnoses reported by the workers' compensation payer. If the scope of reported diagnoses extends beyond the diagnoses specific to the work-related injury, CMS may consider the payer responsible for the future medical treatments for all reported diagnoses.

In a study of the potential impacts of Section 111 reporting, CWCI arranged diagnoses for a work-related injury into three groups according to the appropriateness of the diagnosis for the nature of the injury: appropriate, unacceptable, and potentially inappropriate.[50] "Appropriate" diagnoses included diagnoses that pertained to the primary diagnosis and that Medicare would reimburse. "Unacceptable" diagnoses were diagnoses that Medicare would not reimburse.[51] "Potentially inappropriate" diagnoses were diagnoses not directly related to the primary diagnosis.[52] For example, in one situation, CWCI described how treatment for a back injury included treatment for a hypothyroid condition (ICD-9 244.9) and a stress disorder (ICD-9 308.0).

The illustrations in the CWCI study were intended to point out that a payer reporting unacceptable or potentially inappropriate diagnoses under the Section 111 reporting process may become liable for the future medical services for these diagnoses because CMS will associate the medical treatments back to the work-related injury. In the preceding example, although the workers' compensation payer was reporting for a low back injury, CMS will not consider the unacceptable diagnoses covered by Medicare and will associate the potentially inappropriate diagnoses as treatment for the work-related injury.

To test the potential impact, CWCI reviewed the ICD-9 diagnoses and medical payments for 50 randomly selected indemnity claims. CWCI found that on average 44.3% of the medical paid amounts were for medical treatments outside the appropriate diagnosis (that is, for unacceptable or potentially inappropriate diagnoses). For 7 of the 50 cases, 75% of the medical payments were for unacceptable or potentially inappropriate diagnoses.

D. Workers' Compensation

1. Estimated Impact: Base Case

Table 22 presents the assumptions and results for the base case, which is the scenario where there is no change in the frequency of settlements. The following points describe the assumptions and calculations.

[50] Swedlow 2011.
[51] Medicare will not reimburse for certain non-specified diagnoses, such as ICD-9 959 (Injury Other and Unspecified).
[52] CWCI used MSP clinical grouper software to identify the "potentially inappropriate" diagnoses.

- **Share of estimated medical losses for injured workers 65 and over:** Reports from the U.S. Bureau of Labor Statistics indicate that workers 65 and over account for approximately 3.5% of all workplace injuries and illnesses and the number of lost workdays is greater than for workers under 65. Taken together, we calculated that workers 65 and over accounted for approximately 5% of medical losses.[53]
- **Distribution of claims by claim type:** We are assuming that all claims for injured workers 65 and over are either claims that can be considered as ongoing responsibility for medicals (ORM) claims by CMS (generally, open claims or claims closed without a one-time payment) or TPOC claims (claims with a one-time or lump sum settlement, judgment, award, or other payment intended to resolve or partially resolve a claim). We assumed an 80/20 medical-only/indemnity distribution of claims, and that one-half of the medical-only claims would fall below the reporting threshold for ongoing responsibility for medicals.[54] We also assumed that 20% of indemnity claims were resolved with a lump sum settlement.[55]
- **Average incurred medical:** The average incurred for medical-only claims is based on removing low-cost medical-only claims.[56] The average medical incurred for lost-time claims with no lump sum was derived using an average medical for all indemnity claims, assuming medical losses of $40,000 for lump sum settlements per the California Workers' Compensation Institute (CWCI) study on submitted MSAs, and the assumption that 20% of lost-time claims were resolved with a lump sum settlement.[57] [58] The average incurred medical for all types of claims is the weighted average of the distribution of claims by claim type and the average incurred medical amounts for the ORM and TPOC claims.
- **Estimated impact, ORMs/TPOC:** We assumed a percentage change in medical losses for low-, moderate-, and high-impact scenarios. The first percentage is the assumed impact on the average costs of medical-only ORM claims, the second is the assumed impact on lost-

[53] Although we used 5% for the share of losses for workers 65 and over, it would also be reasonable to use a slightly higher share. According to the NCCI, average severity is higher for workers 65 and over. Also, in a series of studies for eight states, WCRI reported that injured workers 65 and over accounted for 4% to 5% of workers with seven or more days of lost work time (WCRI 2014).

[54] The 80/20 distribution is based on information from National Council on Compensation Insurance, 2013, Exhibit 12, and Workers' Compensation Research Institute, October 2013, Table 2.

[55] In a study of 11 large states, WCRI found the median experience was for 21.6% of claims with more than seven days of lost work time to be resolved with a lump sum settlement. Workers Compensation Research Institute, October 2013, Table 2.

[56] Claims with less than $750 in medical payments are not reportable under Section 111.

[57] For the CWCI study, see Swedlow 2011.

[58] The starting average medical for all indemnity claims was $26,575 (NCCI, Annual Statistical Bulletin, 2013). In Table 22, the weighted average for the lost-time claims without and with lump sum is $26,659.

time ORM claims that have resolved as a lump sum, and the third is the impact on lump sum TPOC claims. The dollar amounts are the product of the assumed impact multiplied by the average incurred medical.

- **Estimated impact as a percent of total estimated medical losses, 65 and over:** The percentages are the estimated impacts of ORMs/TPOC divided by the average incurred medical.
- **Estimated impact as a percent of total estimated medical losses, all injured workers:** The percentages are the estimated impacts of ORMs/TPOC multiplied by the percentage of workers 65 and over.

The results indicate an increase in medical payments of between 10.9% to 25.1% for injured workers 65 and over, and an increase between 0.5% and 1.3% for all workers (that is, when the increase for injured workers 65 and over is related to all injured workers). Recent countrywide workers' compensation experience indicates that medical payments are 57% total workers' compensation losses, and consequently, the estimates are for an increase in total losses of 6.2% to 14.3% for injured workers 65 and over, and an increase between 0.3% and 0.7% when the increase in medical payments for these workers is related to all workers.[59]

[59] Medical payments as a percent of workers' compensation losses are from NCCI Annual Statistical Bulletin 2013.

Table 22 Estimated Impact of Section 111 Reporting Requirements: Workers' Compensation Losses, Base Case

Number	Consideration	Ongoing Responsibility for Medicals		Total Payment Obligation to the Claimant (TPOC)	All Types of Losses
		Large Medical-Only Claims (ORM-MO)	Lost-Time Claims Without Lump Sum (ORM-LT)	Lump Sum	
1	Share of estimated medical losses for injured workers 65 and over	5%	5%	5%	5%
2	Distribution of claims (excluding small medical-only claims)	66%	27%	7%	100%
3	Average incurred medical	$1,500	$23,200	$40,000	$10,054
4	Estimated impact on average incurred medical: ORM-MO / ORM-LT / TPOC				
	Low: 5% / 10% / 15%	$75	$2,320	$6,000	$1,096
	Moderate: 10% / 15% / 25%	150	3,480	10,000	1,739
	High: 15% / 20% / 40%	225	4,640	16,000	2,521
5	Estimated impact as a percent of total estimated medical losses, 65 and over				
	Low				10.9%
	Moderate				17.3%
	High				25.1%
6	Estimated impact as a percent of total estimated medical losses, all injured workers				
	Low				0.5%
	Moderate				0.9%
	High				1.3%

Sources: U.S. Bureau of Labor Statistics; WCRI; Milliman analysis.

2. Estimated Impact with a Decrease in One-Time Payments to Claimants (Settlements)

The time needed to get an MSA approved by CMS and the prospect that approved MSAs may be higher than amounts acceptable to insurers and self-insureds may cause a decrease in the frequency

of lump sum settlements for workers 65 and over. To test the impact of a reduced frequency of lump sum settlements, we assumed that one-half of the lump sum claims would be lost-time claims without a lump sum (that is, shift from TPOC claims to ORM claims). This shift is reflected in (2) in Table 23. We also assumed that the average incurred medical would be 25% higher for the claims that resolved as lump sum settlements and that the average incurred medical for the lost-time claims without lump sum increases to reflect the inclusion of the shifted lump sum claims.[60] These adjustments to the average incurred medicals are shown in (3) in Table 23. Finally, we also increased the low, moderate, and high estimated impacts in (4) for the lost-time claims.[61]

Using the same calculation steps as for the base case, the results for the shift in lump sum claims and higher estimated impacts are shown in (5) and (6) in Table 23. The results are similar to the base case. The results indicate an increase in medical payments of between 15.8% to 28.4% for injured workers 65 and over, and an increase between 0.8% to 1.4% for all workers. Again assuming that medical payments are 57% of total workers' compensation losses, the estimates are for an increase in total losses of 9.0% to 16.2% for injured workers 65 and over, and an increase between 0.4% and 0.8% when the increase in medical payments is related to all workers.

[60] These adjustments were performed so that the starting average incurred medical losses were approximately the same for the base case ($10,054 in Table 22) and the alternative case ($10,060 in Table 23).

[61] These assumptions were developed from discussions with actuaries, claim consultants, and other property-casualty insurance industry practitioners.

Table 23 Estimated Impact of Section 111 Reporting Requirements: Workers' Compensation Losses, With Decrease in One-Time Payments (settlements)

Number	Consideration	Ongoing Responsibility for Medicals		Total Payment Obligation to the Claimant (TPOC)	All Types of Losses
		Large Medical-Only Claims (ORM-MO)	Lost-Time Claims Without Lump Sum (ORM-LT)	Lump Sum	
1	Share of estimated medical losses for injured workers 65 and over	5%	5%	5%	5%
2	Distribution of claims (excluding small medical-only claims)	66%	30.5%	3.5%	100%
3	Average incurred medical	$1,500	$24,000	$50,000	$10,060
4	Estimated impact on average incurred medical: ORM-MO / ORM-LT / TPOC				
	Low: 5% / 15% / 25%	$ 75	$3,600	$12,500	$1,585
	Moderate: 10% / 20% / 40%	150	4,800	20,000	2,263
	High: 15% / 25% / 50%	225	6,000	25,000	2,854
5	Estimated impact as a percent of total estimated medical losses, 65 and over				
	Low				15.8%
	Moderate				22.5%
	High				28.4%
6	Estimated impact as a percent of total estimated medical losses, all injured workers				
	Low				0.8%
	Moderate				1.1%
	High				1.4%

Sources: U.S. Bureau of Labor Statistics' WCRI; Milliman analysis.

E. Automobile Coverages

1. Related Research

The Insurance Research Council (IRC) has compiled databases for automobile injury insurance claims closed during 2007 and 2012.[62] This database includes information on the age of the injured individual, type of automobile insurance coverage, and the amount of medical payments.

The following points summarize the results from the IRC data, which indicate that the costs of medical care for individuals 65 and over are higher than the costs for individuals under 65. The following summary points hold for the all-coverages experience, and generally hold for the five individual coverages.

- The percentage of claims accounted for by individuals 65 and over increased between 2007 and 2012.
- The average payments of medical care are higher for individuals 65 and over, and the age-related medical payment differences increased between 2007 and 2012.
- The distribution of medical payments has been longer for individuals 65 and over, and became longer between 2007 and 2012.

Table 24 presents the average medical payments for claims closed during 2007 and 2012, by age of the injured individual and automobile insurance coverage.

- For all automobile injury insurance claims, the percentages of claims and total medical payments accounted for by individuals 65 and over increased between 2007 and 2012. In 2007, individuals 65 and over accounted for 8.5% of all claims and 10.4% of all medical payments. In 2012, these percentages increased to 9.3% and 13.0%, respectively.
- Between 2007 and 2012, for all claims and for four of the five coverages, the average medical payments for injured individuals 65 and over increased more than the average medical payments for individuals under 65. For all claims, the average medical payment increased by 37% for individuals 65 and over, compared to an increase of 24% for individuals under 65.
- For claims closed in 2007 and 2012, the average medical payment was higher for injured individuals 65 and over than for injured individuals under 65, and the larger increases in medical payments for injured individuals 65 and over increased the differences in average medical payments between these two age groups. For 2007, the average medical payment was $6,160 for individuals 65 and over and $4,669 for individuals under 65 (a 32% difference).

[62] For the latest report summarizing information in the database, see Insurance Research Council, 2014.

For 2012, the average medical payment was $8,423 for individuals 65 and over and $5,782 for individuals under 65 (a 46% difference).

Table 24 Distribution of Claims, Medical Payments, and Mean Medical Payments, by Type of Automobile Coverage and Age of Injured Individual

	2007			2012			% Change in Mean Medical Payment: 2007-2012
Age at Date of Final Payment/Automobile Coverage	% of Claims	% of Total Medical Payments	Mean Medical Payment	% of Claims	% of Total Medical Payments	Mean Medical Payment	
Under 65							
All injury claims	91.5%	89.6%	$4,669	90.7%	87.0%	$5,782	23.8%
Bodily injury	93.7%	92.4%	$4,740	92.1%	90.1%	$5,662	19.5%
Personal injury protection	90.0%	87.7%	$5,116	90.5%	86.8%	$6,395	25.0%
Medical payments	88.1%	87.1%	$3,023	86.5%	82.6%	$3,886	28.5%
Uninsured motorist	92.0%	87.4%	$5,278	89.6%	86.5%	$6,486	22.9%
Underinsured motorist	87.5%	84.7%	$18,900	86.8%	72.5%	$23,743	25.6%
65 and over							
All injury claims	8.5%	10.4%	$6,160	9.3%	13.0%	$8,423	36.7%
Bodily injury	6.3%	7.6%	$6,210	7.9%	9.9%	$7,584	22.1%
Personal injury protection	10.0%	12.3%	$6,996	9.5%	13.2%	$9,122	30.4%
Medical payments	11.9%	12.9%	$3,666	13.5%	17.4%	$5,203	41.9%
Uninsured motorist	8.0%	12.6%	$9,282	10.4%	13.5%	$9,035	-2.7%
Underinsured motorist	12.5%	15.3%	$20,920	13.2%	27.5%	$61,058	191.9%

Source: Insurance Research Council.

For all coverages and the individual coverages, Table 25 presents the medical payments at four percentiles for the 2007 and 2012 claims broken down into age groups under and over 65. The medical payments in Table 25 indicate a lengthening of the tail for the two age groups, with the shift greater for individuals 65 and over. For all coverages, the median medical payment for individuals under 65 was $2,145 for claims closed in 2007 and $2,627 for claims closed in 2012—an increase of 22%. For individuals over 65, the median medical payments were $2,500 and $3,711—an increase of 48%.

Table 25 Mean and Percentile Medical Payments: 2007 and 2012, by Automobile Insurance Coverage and Age of Injured Individual (**Source:** Insurance Research Council.)

	Age Under 65		Age 65 and Over		% Change: 2007-2012	
	2007	2012	2007	2012		
Automobile Coverage	Medical Payment (mean and percentile)	Medical Payment (mean and percentile)	Medical Payment (mean and percentile)	Medical Payment (mean and percentile)	Age Under 65	Age 65 and Over
All injury claims	$4,669	$5,782	$6,160	$8,423	23.8%	36.7%
Percentile 25	$814	$1,000	$995	$1,451	22.9%	45.8%
Percentile 50	$2,145	$2,627	$2,500	$3,711	22.5%	48.4%
Percentile 75	$5,000	$5,597	$5,000	$8,148	11.9%	63.0%
Percentile 95	$15,000	$19,713	$20,154	$27,124	31.4%	34.6%
Bodily injury	$4,740	$5,662	$6,210	$7,584	19.5%	22.1%
Percentile 25	$857	$969	$1,000	$1,352	13.1%	35.2%
Percentile 50	$2,253	$2,619	$2,653	$3,415	16.2%	28.7%
Percentile 75	$4,579	$5,557	$5,471	$8,283	21.4%	51.4%
Percentile 95	$16,658	$18,985	$25,000	$29,000	14.0%	16.0%
Personal injury protection	$5,116	$6,395	$6,996	$9,122	25.0%	30.4%
Percentile 25	$746	$1,298	$855	$1,517	74.0%	77.4%
Percentile 50	$2,500	$2,693	$2,500	$3,956	7.7%	58.2%
Percentile 75	$5,940	$8,062	$6,667	$10,000	35.7%	50.0%
Percentile 95	$14,298	$20,000	$18,467	$29,612	39.9%	60.4%
Medical payments	$3,023	$3,886	$3,666	$5,203	28.5%	41.9%
Percentile 25	$732	$1,000	$974	$1,487	36.6%	52.7%
Percentile 50	$1,487	$2,113	$2,000	$3,756	42.1%	87.8%
Percentile 75	$3,895	$5,000	$5,000	$5,000	28.4%	0.0%
Percentile 95	$9,217	$10,000	$10,000	$20,000	8.5%	100.0%
Uninsured motorist	$5,278	$6,486	$9,282	$9,035	22.9%	-2.7%
Percentile 25	$900	$1,265	$1,333	$1,594	40.6%	19.6%
Percentile 50	$2,530	$3,194	$3,020	$3,740	26.2%	23.8%
Percentile 75	$5,000	$6,590	$6,642	$11,007	31.8%	65.7%
Percentile 95	$20,123	$25,000	$50,000	$32,420	24.2%	-35.2%
Underinsured motorist	$18,900	$23,743	$20,920	$61,058	25.6%	191.9%
Percentile 25	$5,000	$6,533	$5,000	$9,000	30.7%	80.0%
Percentile 50	$10,000	$15,000	$10,045	$15,927	50.0%	58.6%
Percentile 75	$22,644	$30,303	$25,000	$50,000	33.8%	100.0%
Percentile 95	$56,202	$75,000	$90,157	$222,276	33.4%	146.5%

2. Estimated Impact

Table 26 presents the assumptions and results for the estimated impact of the Section 111 reporting requirements on the medical and total payments for automobile liability coverages. The following points describe the assumptions and calculations.

- For injured individuals 65 and over, the percent of claims and percent of medical payments and the average medical payment for claims closed in 2012 were obtained from the IRC—(1), (2), and (3) in Table 26.
- The assumed impact on medical payments due to Section 111 reporting requirements were developed from interviews with Milliman's claims consultants—(4) in Table 26. The assumed impacts were for low (10%), moderate (15%), and high (20%) increases on average medical payments.
- The estimated impact on the average medical payments for injured individuals 65 and over— (5) in Table 26—is the product of the average medical payment for claims closed in 2012 multiplied by the estimated impact in (4).
- The assumptions for medical payments as a share of total liability payments for all coverages and the individual coverages are found in (6) in Table 26. The estimated impacts on total payments for injured individuals 65 and over in (7) is the product of the estimated impact in (5) times the assumption for medical as a percent of total payments in (6).[63]

This rather simple analysis indicates that Section 111 reporting requirements may increase the average medical payments across all injured individuals 65 and over by $842 to $1,685 for the 2012 loss experience, or by 1.3% to 2.6% for this age group. The estimated impact is for a 0.4% to 0.8% increase in total losses across injured individuals 65 and over.

The Federal Highway Administration has reported that in 2012 drivers 65 and over accounted for 17% of all drivers.[64] Assuming that medical and total payments are proportional to the age distribution of drivers, the 1.3% to 2.6% estimated impact on medical payments for individuals 65 and over translates to an estimated increase of 0.2% to 0.4% in medical payments for all ages, and the 0.4% to 0.8% estimated impact on total payments for individuals 65 and over translates to an estimated increase of 0.07% to 0.13% for all ages.

[63] The results in (6) can also be produced by dividing the estimated impact on average medical payments in (5) by the average medical payment in (3), and then multiplying by the assumption for medical as a share of total payments in (6).
[64] Federal Highway Administration 2012.

Table 26 Estimated Impact of Section 111 Reporting Requirements: Automobile Injury Insurance Claims Closed in 2012

Number	Consideration	All Types of Injuries	Bodily Injury	Personal Injury Protection	Medical Payments	Uninsured Motorist	Underinsured Motorist
	Injured individual 65 and over						
1	Percent of claims	9.3%	7.9%	9.5%	13.5%	10.4%	13.2%
2	Percent of medical payments	13.0%	9.9%	13.2%	17.4%	13.5%	27.5%
3	Average medical payment for claims closed in 2012	$8,423	$7,584	$9,122	$5,203	$9,035	$61,058
4	Assumed impact on medical payments that is due to Section 111 reporting requirements	**Estimated impact on average medical payments for injured individuals 65 and over**					
	10%	$842	$758	$912	$520	$904	$6,106
	15%	$1,263	$1,138	$1,368	$780	$1,355	$9,159
	20%	$1,685	$1,517	$1,824	$1,041	$1,807	$12,212
5	Assumed impact on medical payments that is due to Section 111 reporting requirements	**Estimated impact as a percent of total medical payments for injured individuals 65 and over**					
	10%	1.3%	1.0%	1.3%	1.7%	1.4%	2.8%
	15%	2.0%	1.5%	2.0%	2.6%	2.0%	4.1%
	20%	2.6%	2.0%	2.6%	3.5%	2.7%	5.5%
6	Medical payments as a percent of total payments	30%	40%	25%	100%	25%	25%
7	Assumed impact on medical payments that is due to Section 111 reporting requirements	**Estimated impact as a percent of total payments for injured individuals 65 and over**					
	10%	0.4%	0.4%	0.3%	1.7%	0.3%	0.7%
	15%	0.6%	0.6%	0.5%	2.6%	0.5%	1.0%
	20%	0.8%	0.8%	0.7%	3.5%	0.7%	1.4%

Source: Insurance Research Council, Milliman analysis.

F. Homeowners

We did not find adequate information on medical payments covered by homeowners insurance to develop an estimated impact that is due to Section 111 reporting. We suspect the paucity of data on medical payments covered by homeowners insurance is because of the small share of total incurred losses and of liability losses attributed to payments for medical services.

Table 27 presents the distribution of incurred losses by cause of loss for physical and liability causes and for the different types of liability causes for accident years 2005 to 2007. Across all types

of causes, medical payments accounted for 0.2%. When the attention is limited to liability losses, medical payments accounted for 3.6% of all liability losses when catastrophes are included and 2.9% when catastrophes are excluded.

In our interviews with claim consultants, they expect there will be a notable increase in the number of claims with medical payments and an increase in the amounts of medical payments covered by homeowners policies. They expect there will be an increase in the situations illustrated by Case #10 above (where a Medicare beneficiary's injury can be attributed to an incident covered by a homeowners policy).

In sum, while there is the expectation that claims frequency and total medical payments will increase for homeowners insurance, there is not a sufficient amount of information to calculate an estimated impact. While the impact may be material for individual claims, the overall impact for the homeowners line of business is likely to be de minimis.

Table 27 Distribution of Incurred Losses Covered by Homeowners Insurance: Accident Years 2005-2007

Cause of Loss	Including Catastrophes	Excluding Catastrophes
TOTAL, ALL LOSSES	100.0%	100.0%
Property Causes of Loss		
Total, Property Losses	94.5%	93.0%
Liability Causes of Loss		
Bodily Injury	2.7%	3.4%
Property Damage	1.1%	1.4%
Medical Payments	0.2%	0.2%
All Other Liability	1.6%	2.0%
Total, Liability Losses	5.5%	7.0%
TOTAL, LIABILITY LOSSES	100.0%	100.0%
Liability Causes of Loss		
Bodily Injury	48.2%	48.6%
Property Damage	19.6%	20.0%
Medical Payments	3.6%	2.9%
All Other Liability	28.6%	28.6%

Source: American Association of Insurance Services, 2009.

VI. CONCLUDING COMMENT

We relied on a variety of information and data concerning Section 111 reporting requirements, population and employment trends, and insurance losses. We did not audit or verify these data and other information. If the underlying data or information we have relied on is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete. In that event, the results of our analysis may not be suitable for the intended purpose.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and did not find material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment. The estimates contained herein are intended to be illustrative. The actual impact for any payer will depend on a variety of factors including their mix of claims, classes of business and states of operations.

This paper was prepared solely for the benefit of the Casualty Actuarial Society's Committee on Healthcare Issues. Milliman does not intend to legally benefit any third-party recipient of this paper. The Casualty Actuarial Society may publicly distribute the final, non-draft version of the paper to third parties provided the paper is distributed in its entirety.

APPENDIX A
LEGISLATIVE SUMMARY: MEDICARE, MEDICARE SECONDARY PAYER, AND SECTION 111 REPORTING

A. Historical Background

In 1965, under Title XVIII of the Social Security Act, Congress created the Medicare program to provide health insurance to individuals 65 and over, regardless of income or medical history. Since 1965, Congress has expanded Medicare to include individuals under 65 who have permanent disabilities and receive Social Security Disability Insurance (SSDI) payments and individuals of any age with end-stage renal disease (ESRD)—permanent kidney failure requiring dialysis or kidney transplant.

Under the present program, individuals who are eligible for Medicare benefits can receive payment under several coverages:

- **Hospital insurance (Part A)**, which covers inpatient care in hospitals and skilled nursing facilities, but no custodial or long-term care. This coverage also applies to hospice care and some home healthcare. There is no premium for Part A coverage.
- **Medical insurance (Part B)**, which covers physician and other supplier items and services, as well as hospital outpatient care. Part B also covers some medical services not covered by Part A, such as some physical and occupational therapy and some home healthcare. There is a premium for Part B coverage.
- **Medicare Advantage Plan coverage (Part C)**, which pay for services under certain health plan options—such as health maintenance organizations (HMOs) and preferred provider organizations (PPOs)—approved by Medicare. Part C is an alternative to the fee-for-service Part A and Part B coverage, and often provides extra coverage for services such as vision or dental care.
- **Prescription drug coverage (Part D)**, provides prescription drug coverage to Medicare beneficiaries. Most beneficiaries pay a monthly premium.

The preceding points notwithstanding, Medicare does not cover every medical service and uses a fee schedule to establish the payments to medical providers.

At the time Medicare was created in 1965, workers' compensation remained the primary payer for work-related injuries and Medicare was the secondary payer for these injuries. Beginning in 1980, Congress enacted a series of provisions that has made Medicare the secondary payer for certain types of other insurance plans and self-insured programs. The liability insurance coverages include, but are not limited to, homeowners liability, malpractice, product liability, and general casualty

liability. Medicare is secondary to payments under state wrongful death statutes that provide payment for medical damages. Medicare is also secondary to no-fault insurance coverages, including all forms of automobile no-fault insurance, automobile medical payments, and non-automobile no-fault insurance.[65]

B. Section 111 Provisions for Reporting Medical Services Provided to Medicare Beneficiaries

Under Section 111 of the Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA), liability insurers (including self-insureds), no-fault insurers, and workers' compensation insurers are obligated to notify Medicare about claims involving ongoing medical responsibility, settlements, judgments, awards, or other one-time and lump sum settlements received by or on behalf of Medicare beneficiaries. The reporting requirements for Section 111 concern Medicare beneficiaries (that is, individuals who are eligible for and may be receiving treatment covered by Medicare) who also are receiving medical treatment for a work-related injury or an injury where the incident was covered by a liability policy or self-insurance arrangement.[66]

CMS defines a responsible reporting entity (RRE) to be an entity that provides or administers liability, no-fault, or workers' compensation insurance coverage, including self-insureds, and as a consequence is responsible for complying with Section 111 reporting requirements.[67,68] Liability insurance includes, but is not limited to, homeowners, automobile, product, malpractice, uninsured motorist, and underinsured motorist. No-fault insurance includes, but is not limited to, certain forms of automobile insurance, certain homeowners insurance, commercial insurance plans, and medical payments coverage/personal injury protection/medical expense coverage. Workers' compensation includes the statutory plans in the 50 states, the District of Columbia, U.S. territories, the Federal Employees' Compensation Act, and the Longshore and Harbor Workers' Compensation Act.[69]

Section 111 reporting distinguishes between two broad types of medical services. Each class of medical services is subject to certain reporting thresholds, which in the case of the TPOC payments have been decreasing over the past several years. The reporting requirements became effective May 1,

[65] The Medicare secondary payer provisions can be found at Section 1862(b) of the Social Security Act and in Chapter 1 of the Medicare Secondary Payer Manual.

[66] Claims that must be reported under Section 111 are slightly different from claims that can be covered by Medicare Set-Aside Arrangements (MSAs). Section 111 is limited to Medicare beneficiaries. MSAs are for individuals who are "Medicare-eligible," which is defined to include individuals who are within 30 months of being eligible for Medicare.

[67] CMS, User Guide, Chapter III: Policy Guidance, Chapter 6: Responsible Reporting Entities.

[68] For a primer on Section 111 reporting requirements, see MMSEA Section 111 Liability Insurance (Including Self-Insurance), No-Fault Insurance, and Workers' Compensation User Guide: Reportable Claims, Version 3.4, January 13, 2014.

[69] CMS, User Guide, Chapter 1: Introduction and Overview, Chapter 4: MSP Overview.

2009.

- **Ongoing responsibility for medicals (ORM)** refers to the ongoing responsibility for payment of the injured party's medical treatment, including medical-only claims with more than $750 in payments and all indemnity claims.[70]
- **Total Payment Obligation to the Claimant (TPOC)** refers to the settlement, judgment, award, or other payment in addition to the ORM. A TPOC is generally a one-time or lump sum settlement, judgment, or award. Structured settlements are considered TPOCs.[71]

RREs are responsible for complying with the Section 111 reporting requirements. RREs can report payments through either an electronic file exchange or a manual direct data exchange. The report must include the identity of the Medicare beneficiary and other information to enable an appropriate determination for the coordination of benefits between Medicare and the primary payer.

1. Ongoing Responsibility for Medicals (ORM)

Ongoing responsibility for medicals concerns the recurring, ongoing payments for medical treatments received by individuals with a work-related injury or covered by a liability policy.

An RRE is required to report to CMS all medical payments received by a Medicare beneficiary that exceed $750. For each type of insurance (no-fault, liability, and workers' compensation), an RRE is required to report ORM payments that were made on or after January 1, 2010.

2. Total Payment Obligation to Claimant (TPOC)

The initial reportable dates for TPOCs differed across the three types of insurance (see Table A-1). RREs were required to report TPOCs for no-fault and workers' compensation insurance for payments made on or after January 1, 2010. For liability insurance, reporting was required for TPOC payments made on or after January 1, 2011.

Another difference across the three types of insurance concerns the thresholds for reporting to CMS. There is no threshold for no-fault insurance—all TPOC payments made under a no-fault coverage must be reported to CMS. By contrast, thresholds for reporting TPOC payments for liability insurance became effective for payments made on or after October 1, 2010, and thresholds for these types of payments for workers' compensation became effective for payments made on or after October 1, 2011.

[70] For a primer on ORM, see MMSEA, ibid., Ongoing Responsibility for Medicals (ORM), Version 3.4, January 13, 2014.

[71] For a primer on Total Payment Obligation to the Claimant, see MMSEA, ibid., Total Payment Obligation to Claimant (TPOC), Version 3.4, January 13, 2014.

Table A-1 Reportable Dates for Total Payment Obligation to Claimant (TPOC)

Insurance Type	Reportable TPOC Dates	Reportable Amounts	Threshold Applicable
No-fault	October 1, 2010 & subsequent	Any amount	No
Liability insurance (including self-insurance)	October 1, 2011 & subsequent	Cumulative TPOC amount that exceeds threshold	Yes
Workers' compensation	October 1, 2010 & subsequent	Cumulative TPOC amount that exceeds threshold	Yes

Table A-2 presents the reporting thresholds and effective dates for TPOC payments for liability insurance. For liability insurance TPOC payments made on or after October 1, 2011, the RRE was required to report payments over $100,000 beginning January 1, 2012. Since then, the thresholds have been reduced. As of January 1, 2015, the threshold for liability claims is $300 for payments made on or after October 1, 2014.

Table A-2 TPOC Thresholds and Reporting Dates for Liability Insurance

Section 111 Reporting Required in the Quarter Beginning	TPOC Date on or After	Total TPOC Amount
January 1, 2012	October 1, 2011	TPOCs over $100,000
July 1, 2012	April 1, 2012	TPOCs over $50,000
October 1, 2012	July 1, 2012	TPOCs over $25,000
January 1, 2013	October 1, 2012	TPOCs over $5,000
January 1, 2014	October 1, 2013	TPOCs over $2,000
January 1, 2015	October 1, 2014	TPOCs over $300

The reporting requirements for workers' compensation started earlier and have had lower thresholds over time. Table A-3 presents the reporting thresholds and effective dates for TPOC payments for workers' compensation insurance. For workers' compensation TPOC payments made on or after October 1, 2010, the RRE was required to report payments over $5,000. As of January 1, 2015, the threshold was $300 for payments made on or after October 1, 2014.

Table A-3 TPOC Thresholds and Reporting Dates for Workers' Compensation

Section 111 Reporting Required in the Quarter Beginning	TPOC Date on or After	Total TPOC Amount
January 1, 2011	October 1, 2010	TPOCs over $5,000
January 1, 2014	October 1, 2013	TPOCs over $2,000
January 1, 2015	October 1, 2014	TPOCs over $300

REFERENCES

- American Association of Insurance Services (January 13, 2009). AAIS issues expanded 'Cause of Loss Report' for homeowners insurance. Press release. Retrieved August 1, 2014, from http://www.aaisonline.com/AAISFrame/ConnectFrame/PressReleasesFrame/tabid/165/ArticleID/137/AAIS-Issues-Expanded-Cause-of-Loss-Report-for-Homeowners-Insurance.aspx.
- American Association of Retired Persons (Beth Levine), "8 Key Facts About Knee Replacement Surgery," from the AARP Bulletin print edition, March 1, 2011. Retrieved January 27, 2015, from http://www.aarp.org/health/conditions-treatments/info-03-2011/knee-replacement-surgery.html.
- American Cancer Society (2007). Occupation and Cancer. Information sheet. Retrieved August 1, 2014, from http://www.cancer.org/acs/groups/content/@nho/documents/document/occupationandcancerpdf.pdf
- Bartelt, R., Sperling, J.W., Schleck, C.D., Colfield, R.H., "Shoulder Arthroplasty in Patients Aged Fifty-Five Years or Younger with Osteoartritis," Journal of Shoulder and Elbow Surgery, 2011 (20, 123-130). Retrieved January 27, 2015, from http://www.jshoulderelbow.org/article/S1058-2746(10)00209-0/abstract.
- Bentley, T. Scott and Steven G. Hanson, "2011 U.S. Organ and Tissue Transplant Cost Estimates and Discussion," Milliman Research Report, April 2011. Retrieved August 18, 2014, from http://publications.milliman.com/research/health-rr/pdfs/2011-us-organ-tissue.pdf.
- California Workers' Compensation Institute (July 2014), Claim Monitoring Report: Analysis of Medical and Indemnity Benefit Payments, Medical Treatment and Pharmaceutical Cost Trends in the California Workers' Compensation System. Oakland, California.
- Canadian Public Health Association, Hepatitis C in the Workplace. Retrieved January 27, 2015 from http://www.bccdc.ca/NR/rdonlyres/3246DF1F-AC21-4B72-AFE1-4C93F8AC0AE4/0/HepC_Intheworkplace.pdf.
- Centers for Disease Control and Prevention:
    - "Bloodborne Infectious Diseases: HIV/AIDS, Hepatitis B, Hepatitis C" (December 29, 2011). Retrieved July 21, 2014 from http://www.cdc.gov/niosh/topics/bbp/occupations.html.
    - "Cancer, Reproductive, and Cardiovascular Diseases" (August 22, 2013). NIOSH Program Portfolio. Retrieved August 1, 2014, from http://www.cdc.gov/niosh/programs/crcd/.
    - Occupational Cancer (May 2, 2012). Workplace Safety and Health Topics. Retrieved August 1, 2014, from http://www.cdc.gov/niosh/topics/cancer/.
    - Table 1.11: Age Distribution (%) of Incidence Cases by Site, 2007-2011, All Races,

Both Sexes (2011). *SEER Cancer Statistics Review* 1975-2011, National Cancer Institute. Retrieved August 1, 2014, from http://seer.cancer.gov/csr/1975_2011/results_merged/topic_age_dist.pdf.

- Centers for Medicare and Medicaid Services:
  - "Medicare and Other Health Benefits: Your Guide to Who Pays First" (April 2014). CMS Product No. 02179. Retrieved August 1, 2014, from http://www.medicare.gov/Pubs/pdf/02179.pdf.
  - *Medicare Secondary Payer Manual* (August 3, 2012). Publication 100-05, Revision R87MSP. Retrieved August 1, 2014, from http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Internet-Only-Manuals-IOMs-Items/CMS019017.html.
  - MMSEA Section 111, Liability Insurance (Including Self-Insurance), No-Fault Insurance and Workers' Compensation User Guide, Chapter I: Introduction and Overview, Version 4.5 (February 2, 2015). Retrieved March 23, 2015, from http://www.cms.gov/Medicare/Coordination-of-Benefits-and-Recovery/Mandatory-Insurer-Reporting-For-Non-Group-Health-Plans/Downloads/New-Downloads/NGHPUserGuideVer45Ch1IntroAndOverview.pdf
  - MMSEA Section 111, Liability Insurance (Including Self-Insurance), No-Fault Insurance and Workers' Compensation User Guide, Chapter III: Policy and Guidance, Version 4.5 (February 2, 2015). Retrieved March 23, 2015, from http://www.cms.gov/Medicare/Coordination-of-Benefits-and-Recovery/Mandatory-Insurer-Reporting-For-Non-Group-Health-Plans/Downloads/New-Downloads/NGHPUserGuideVer45Ch3Policy.pdf
  - MMSEA Section 111 Mandatory Insurer Reporting – Quick Reference Guide," Version 1.1 (May 1, 2013).
  - Workers' Compensation Medicare Set Aside Arrangements (June 3, 2014). Retrieved August 1, 2014, from http://go.cms.gov/wcmsa.
  - Workers' Compensation Medicare Set-Aside Arrangement (WCMSA) Reference Guide (January 5, 2015). COBR-Q1-2015-v2.3. Retrieved March 26, 2015, from http://www.cms.gov/Medicare/Coordination-of-Benefits-and-Recovery/Workers-Compensation-Medicare-Set-Aside-Arrangements/Downloads/WCMSA-Reference-Guide-Version-2-3.pdf
  - Your Medicare Coverage: Home Health Services. Retrieved August 18, 2014 from http://www.medicare.gov/coverage/home-health-services.html.
- Congressional Research Service (March 22, 2013). Medicare Secondary Payer: Coordination of Benefits. RL33587. (accessed May 27, 2014).
- Federal Highway Administration, Department of Transportation (US). Highway Statistics 2012. Washington DC: FWWA Retrieved August 18, 2014, from http://www.fhwa.dot.gov/policyinformation/statistics/2012/dl22.cfm.

- Food and Drug Administration, "Blunt-Tip Surgical Suture Needles Reduce Needlestick Injuries and the Risk of Subsequent Bloodborne Pathogen Transmission to Surgical Personnel," a FDA, NIOSH, & OSHA Joint Safety Communication, May 30, 2012. Retrieved January 27, 2015 from http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/ucm305757.htm
- Fraser, Crystal (2011). The complexity of the mandatory Medicare Section 111 reporting rules and its practical legal affects – is there a break in sight? *Connecticut Law Journal*, Volume 17:2. Retrieved August 1, 2014, from http://insurance journal.org/wp-content/uploads/2011/12/Fraser.pdf.
- Government Accountability Office (March 2012). Medicare Secondary Payer: Additional Steps Are Need to Improve Program Effectiveness for Non-Group Health Plans. GAO-12-333. (accessed May 27, 2014).
- Howlader, N., Noone, A.M., Krapcho, M. et al., eds. (April 2014). SEER Cancer Statistics Review, 1975-2011. National Cancer Institute. Bethesda, Maryland. Retrieved August 3, 2014, from http://seer.cancer.gov/csr/1975_2011/. See, specifically, Table 1.11, http://seer.cancer.gov/csr/1975_2011/results_merged/topic_age_dist.pdf and Table 1.12, http://seer.cancer.gov/csr/1975_2011/results_merged/topic_med_age.pdf.
- Insurance Research Council (February 2014) *Auto Injury Insurance Claims: Countrywide Patterns in Treatment, Cost and Compensation*. Insurance Research Council. Malvern, Pennsylvania.
- Mäkelä, K.T., Eskelinen, A., Pulkkinen, P., Paavolainen, P., Remes, V., "Total Hip Arthroplasty for Primary Osteoarthritis in Patients Fifty-Five Years of Age or Older. An Analysis of the Finnish Arthroplasty Registry," Journal of Bone and Joint Surgery (American Version), October 2008. Retrieved January 27, 2015 from http://www.ncbi.nlm.nih.gov/pubmed/18829914.
- MedlinePlus (July 9, 2014). Chronic Obstructive Pulmonary Disease. National Institutes of Health. Retrieved August 3, 2014, from http://www.nlm.nih.gov/medlineplus/ency/article/000091.htm.
- National Institute for Occupational Safety and Health, "Preventing Exposures to Bloodborne Pathogens among Paramedics," April 2010, DHHS (NIOSH) Publication No. 2010-139. Retrieved January 27, 2015 from http://www.cdc.gov/niosh/docs/wp-solutions/2010-139/.
- National Council on Compensation Insurance:
    - Annual Statistical Bulletin, 2013 edition.
    - Laws. C. & Colón, D. (October 2012). Comorbidities in Workers Compensation. NCCI Research Brief. Retrieved September 26, 2014, from https://www.ncci.com/documents/Research-Brief-Comorbidities-in-Workers-Compensation-2012.pdf.
    - Lipton, B., Colón, D., & Robertson, J. (September 2013). Workers Compensation

Prescription Drug Study: 2013 Update. NCCI Research Brief. Retrieved August 3, 2014, from https://www.ncci.com/documents/Prescription_Drugs-2013.pdf.

- Lipton, B. (May 9, 2014). Medicare Set-Asides and Workers Compensation. 2014 Annual Issues Symposium. Retrieved August 3, 2014, from https://www.ncci.com/Documents/AIS2014-Lipton.pdf.
- Restrepo, T. & Shuford, H. (December 2011). Workers Compensation and the Aging Workforce.

- Sengupta, I., Baldwin, M., & Reno, V. (August 2013). Workers' Compensation: Benefits, Coverage, and Costs, 2011. National Academy of Social Insurance.
- Swedlow, A. (2011). Intersections and Uncertainties Between Medicare and Workers' Compensation. California Workers' Compensation Research Institute. Presented at the November 2011 NCCI Actuarial Meeting and the March 2011 CWCI Annual Meeting.
- U.S. Census Bureau (November 2013). Geographical Mobility/Migration. Current Population Survey, 2013 Annual Social and Economic Supplement. Retrieved August 3, 2014, from https://www.census.gov/hhes/migration/data/cps/cps2013.html.
- U.S. Department of Health and Human Services. Work-Related Cancer. Publication No. 2010-145. Retrieved August 3, 2014, from http://www.cdc.gov/niosh/docs/2010-145/pdfs/2010-145.pdf.
- Weinstein, A.M. et. al (February 2012), "How Many Americans are Currently Living with Total Knee Replacement?" presented at the 2012 Annual Meeting of the American Academy of Orthopaedic Surgeons. Retrieved January 27, 2015, from http://www.abstractsonline.com/Plan/ViewAbstract.aspx?sKey=65a71ec2-6fba-429b-b9a0-97db92e78fba&cKey=8e9d5320-3ca0-403e-8e73-c682c9240961
- Workers Compensation Research Institute:
  - Belton, S.E. (October 2013). *CompScope Benchmarks for Wisconsin, 14th Edition*. Workers Compensation Research Institute, WC-13-38: Cambridge, Massachusetts.
  - Tanabe, R.P. (March 2012). Workers Compensation Laws (as of January 2012). Workers Compensation Research Institute, WC-12-18: Cambridge, Massachusetts.
  - Tanabe, R.P. (February 2013). Workers Compensation Medical Cost Containment: A National Inventory, 2013 (as of January 1, 2013). Workers Compensation Research Institute, WC-13-02: Cambridge, Massachusetts.
  - Thumula, V., Savych, B., & Victor, R.A. (June 2014). Predictors of Worker Outcomes in Wisconsin. Workers Compensation Research Institute. WC-14-27: Cambridge, Massachusetts. **Note:** These authors also produced reports for Indiana, WC-14-20; Massachusetts, WC-14-21; Michigan, WC-14-22; Minnesota, WC-14-23; North Carolina, WC-14-24; Pennsylvania, WC-14-25; and Virginia, WC-14-26.
  - Wang, D. & Liu, T. (July 2011). *Prescription Benchmarks, 2nd Edition: Trends and Interstate Comparisons*. Workers Compensation Research Institute, WC-11-31:

Cambridge, Massachusetts.