SUN LIFE STOP-LOSS RESEARCH REPORT

Top ten catastrophic claims conditions

SPRING 2016

Sun Life Financial®

Table of contents

Did you know?

Sun Life is the #1 independent stop-loss carrier in the United States.[1] Every day, we dedicate our expertise to helping the self-funded community. Sun Life Stop-Loss customers receive practical services that can contain costs and support improved patient outcomes. For example, customers get a customized Sun Life Stop-Loss Benchmark marketplace report, access to quality medical vendor networks with discounted pricing through SunResources® and SunExcel®, a customized SunElite℠ plan document review service, and more.

1. The #1 ranking is based on the 2014 year-end Sun Life Stop-Loss premium of $1.03 billion and on our analysis of publicly available financial information and third-party market share data.

Executive summary

In the fourth annual stop-loss catastrophic claims report, Sun Life analyzed its stop-loss catastrophic claims data spanning four years from 2012 to 2015. The study included claims data from Sun Life Stop-Loss policyholders that range in size from approximately 50 to over 100,000 employees, located across the United States.

This report presents the top ten catastrophic claims conditions, announces a new top ten condition (as predicted in last year's report), further examines the leading catastrophic claims conditions, and provides more information on the critical factors that impact employer costs. The total of all stop-loss claims reimbursements during the four-year study was $2.3 billion. If those stop-loss claims reimbursements are added to first-dollar (the amount that employers pay before reaching the stop-loss deductible) claims costs for catastrophic conditions, the overall cost for catastrophic conditions was $5.3 billion.

Here are the key findings:

- The new top ten costliest claims conditions comprised over half (53%) of the $2.3 billion in claims that Sun Life reimbursed to stop-loss policyholders between 2012 and 2015.
- Cancer was the most costly catastrophic illness. Costs increased and represented over one-quarter (26.6%) of all stop-loss claims reimbursements during the four-year period. (Intravenous medications are a key driver in the cost of cancer. In 2015, 45% of the top 20 intravenous medications were used to treat cancer.)
- Although treatment costs declined, chronic/end-stage renal disease maintained its #3 position due to its high rate of incidence.
- Transplants moved into the #6 position, and the previous #10 condition, "complications of surgical and medical care, not elsewhere classified," was displaced by septicemia (infection).
- Just 1.7% of claimants produced claims over $1 million, but those claimants accounted for a disproportionate 18.5% of the overall stop-loss claims reimbursements.
- Employers experienced a range of catastrophic claims costs based on geographic location, plan member demographics, and stop-loss deductible selection.

TOP 10 CATASTROPHIC claims conditions

The top ten catastrophic claims conditions represented 53% of all stop-loss claims reimbursements. Compared to last year's study, conditions remained generally consistent and ranged from various cancers to congestive heart failure to infection. Cancer continued its dominance as the leading catastrophic claims condition, accounting for 26.6% of all the total stop-loss claims with $618 million in stop-loss reimbursements. Chronic/end-stage renal disease retained its #3 position. As predicted in last year's report, transplants did trend upward. That condition moved into the #6 position. In addition, last year's #10 condition "complications of surgical and medical care, not elsewhere classified" was displaced by septicemia (infection).

Total payments

33% Top 3 conditions

53% of all catastrophic claims were top 10 conditions

Rank	Medical condition	Value of stop-loss claims reimbursements 2012–2015	Percentage of total stop-loss claims reimbursements 2012–2015	Increase/ decrease compared to 2011–2014
1	**Malignant neoplasm** (cancer)	$429.5M	18.5%	↑ 0.9%
2	**Leukemia/lymphoma/ multiple myeloma** (cancers)	$188.6M	8.1%	No material change
3	**Chronic/end-stage renal disease** (kidneys)	$156.6M	6.7%	↓ 1.0%
4	**Congenital anomalies** (conditions present at birth)	$96.3M	4.1%	↓ 0.1%
5	**Disorders relating to short gestation and low birth weight** (premature birth)	$75.2M	3.2%	No material change
6	**Transplant**	$62.2M	2.7%	↑ 0.7%
7	**Congestive heart failure**	$57.8M	2.5%	↓ 0.1%
8	**Cerebrovascular disease** (brain blood vessels)	$57.4M	2.5%	No material change
9	**Pulmonary collapse/ respiratory failure** (lungs)	$55.0M	2.4%	No material change
10	**Septicemia** (infection)	$54.7M	2.4%	↑ 0.2%
✓	**All other conditions**	$1.09B	47%	↓ 0.5%

Figure 1

Cancer continued to dominate

Cancer was still the leading catastrophic claims condition. Compared to last year's report, the top two conditions remained the same, with malignant neoplasm in the #1 position and leukemia/lymphoma/multiple myeloma in the #2 position. In total, cancer-related stop-loss reimbursements represented 26.6% of the total stop-loss reimbursements that Sun Life provided. From 2012 to 2015, there was a steady year-over-year increase in cancer claims reimbursements, going from 24.3% of total stop-loss claims reimbursements in 2012 to 28% in 2015.

The most costly cancers were:

- malignant neoplasm (breast),
- myeloid leukemia (red blood cells),
- malignant neoplasm (brain),
- lymphoid leukemia (white blood cells), and
- multiple myeloma (plasma cells).

As shown in figure 2, malignant neoplasm of the breast occurred frequently but was relatively lower cost compared to other malignant neoplasm conditions. In contrast, malignant neoplasm of the brain occurred much less frequently, but was higher cost.

A variety of factors contribute to the cost of treating cancer. During the initial phases, treatments can include chemotherapy regimens, radiation therapy, surgical intervention, bone marrow transplants, or drug therapy. Over time, changes in treatment course, ongoing treatment, side effects, and complications can also add to costs.

Overall, the data showed that costs of treatment and new treatment options both increased from 2012 to 2015. This trend may continue. According to the National Cancer Institute, an estimated 1,685,210 new cancer cases will be diagnosed in the United States in 2016, and national expenditures for cancer care in the United States could reach $156 billion in 2020.[2]

Sun Life continues to anticipate that cancer will remain the leading medical condition that results in stop-loss claims reimbursements.

Cancer claims increase

Steady year-over-year increase in cancer claims, going from 24.3% of total stop-loss claims in 2012 to 28% in 2015.

Paid charges for the most costly cancer conditions

Medical condition	Percentage of total paid cancer charges	Average paid charge
Malignant neoplasm (breast)	13.6%	$145,834
Myeloid leukemia (red blood cells)	5.6%	$275,807
Malignant neoplasm (brain)	4.6%	$176,242
Lymphoid leukemia (white blood cells)	4.3%	$309,902
Multiple myeloma (plasma cells)	4.0%	$186,289

32.1% of total cancer claims

Figure 2

This table shows cancers included in the #1 condition (malignant neoplasm) and the #2 condition (leukemia/lymphoma/multiple myeloma).

2. National Cancer Institute, Cancer Statistics, http://www.cancer.gov/about-cancer/what-is-cancer/statistics.

Kidney disease maintained solid #3 position

The third condition in the top three was chronic/end-stage renal disease (kidneys). The high treatment costs and common occurrence of this disease created over $369 million in combined first-dollar and stop-loss claims reimbursements. As in the 2011–2014 time range, there was a relatively steady trend of claimants and reimbursements. From 2012 to 2015, claimant counts within an individual year ranged from 384 to 460. For claims that exceeded the stop-loss deductible, average treatment cost for chronic/end-stage renal disease was approximately $224,000. Our data showed that there was a 21% decrease in average treatment costs in 2015, compared to 2012.

Key risk factors for kidney disease include:

- the presence of diabetes, which is "[t]he leading cause of kidney disease"[3] and
- the presence of hypertension (high blood pressure), which is the second-leading cause of kidney disease.[4]

Currently, common treatment options for kidney disease include dialysis and kidney transplant—and costs for each are in flux.

Costs for dialysis treatment vary widely. When dialysis becomes necessary, the medical plan is the primary payor for at least the first 33 months of treatment. Within that timeframe, it is common for dialysis to cost between $2,600 and $61,000 per month,[5] but monthly charges can reach $200,000 or more.[6] After 33 months, Medicare typically becomes the primary payor when a claimant or patient is a member of a group medical plan. Medicare uses a base rate and several additional factors—such as co-morbidities, age, and gender—to determine the payment amount. It is common for Medicare reimbursements to range from $3,600 to $9,000 per month.[7]

Kidney transplants—which can be performed before or after dialysis—are becoming more common and can lead to better medical outcomes and lower cost, compared to dialysis. According to the National Kidney Foundation, "Medicare spends about a third less on patients who go straight to transplant."[8]

Chronic/end-stage renal disease has been in the top three catastrophic conditions since before Sun Life published its first catastrophic claims report in 2013. Because a significant portion of the American population is at risk for this disease—one in three[9]—it seems likely that it will continue to produce a high number of claims. Over time, improvements in dialysis cost management and increased use of transplant treatment could reduce cost associated with chronic/end-stage renal disease.

Costs going down?

Yes, even though kidney disease remains common—the average treatment cost has gone down by 21% over the last four years.

Average kidney disease treatment costs from 2012 to 2015

Includes first-dollar claims and stop-loss claims reimbursements

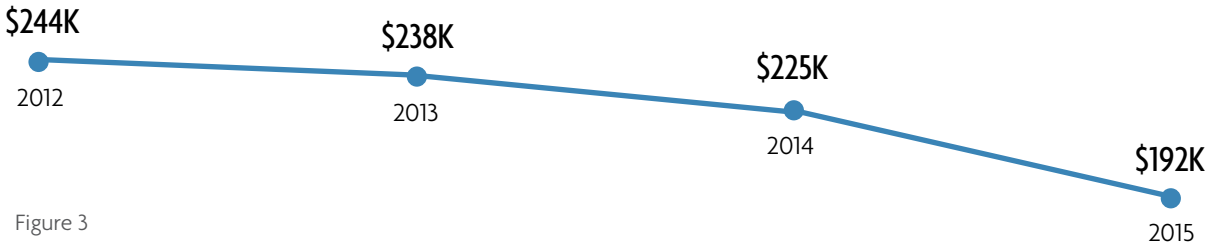


Figure 3

3. National Kidney Foundation, "Fast Facts," referencing United States Renal Data System 2015 Annual Report, https://www.kidney.org/news/newsroom/factsheets/FastFacts.
4. National Institute of Diabetes and Digestive and Kidney Disease, High Blood Pressure and Kidney Disease, http://www.niddk.nih.gov/health-information/health-topics/kidney-disease/high-blood-pressure-and-kidney-disease/Pages/facts.aspx.
5. According to Sun Life Stop-Loss reimbursements that Sun Life paid from 2012 to 2015.
6. According to an internal analysis of information provided to Sun Life by Renalogic in 2016. Renalogic is a comprehensive provider of data-driven chronic kidney disease care and cost-management programs for the self-insured industry. For a complimentary comprehensive dialyisis risk analysis of a plan document, visit http://www.renalogic.com/sunlife or send an e-mail to SunLifeKidneys@renalogic.com.
7. According to an internal analysis of information provided to Sun Life by Renalogic in 2016.
8. National Kidney Foundation, October 26, 2009, press release, https://www.kidney.org/news/newsroom/nr/avoiding_dialysis.
9. National Kidney Foundation, "Fast Facts," referencing the Centers for Disease Control and Prevention, https://www.kidney.org/news/newsroom/factsheets/FastFacts.

Transplants moved into the #6 position

In the 2012–2015 study period, transplants were the sixth-highest catastrophic claims condition, representing over $62.2 million in stop-loss claims payments and 2.7% of total reimbursements. Over the last few years, transplants—including kidney, liver, lung, and bone marrow/stem cell—have increased. Transplants moved from the #17 position in 2012 (representing $6.7M in stop-loss claims reimbursements) to the #4 position in 2015 (representing $27.7M in stop-loss claims reimbursements). The average paid charge for a transplant during 2012–2015 was over $253,000.

From 2012 to 2013, the number of transplants was relatively flat at approximately 90 claimants. In 2014, it jumped to 135 claimants and again jumped in 2015 to 185 claimants. For example, compared to 2012–2013, in 2014–2015 bone marrow/stem cell transplants quadrupled.

The 2012–2015 study data (adding first-dollar costs to stop-loss reimbursements), compared to data from last year's study, which covered 2011–2014, showed a 29% increase in bone marrow/stem cell transplants, the majority of which are used for cancer therapy. There was also a 79% increase in bone marrow/stem cell transplant costs and a 55% increase in associated transplant costs that can occur before and after the bone marrow/stem cell procedure. During 2012–2015, the average cost of paid charge for bone marrow/stem cell transplant was just over $351,000. When associated transplant costs were added, the average cost rose to more than $511,000.

It's important to note that all transplants—no matter what type—can include additional expenses such as:

- evaluation in order to be listed to receive a transplant,

All transplants average cost

Based on the year that the stop-loss claim was reimbursed

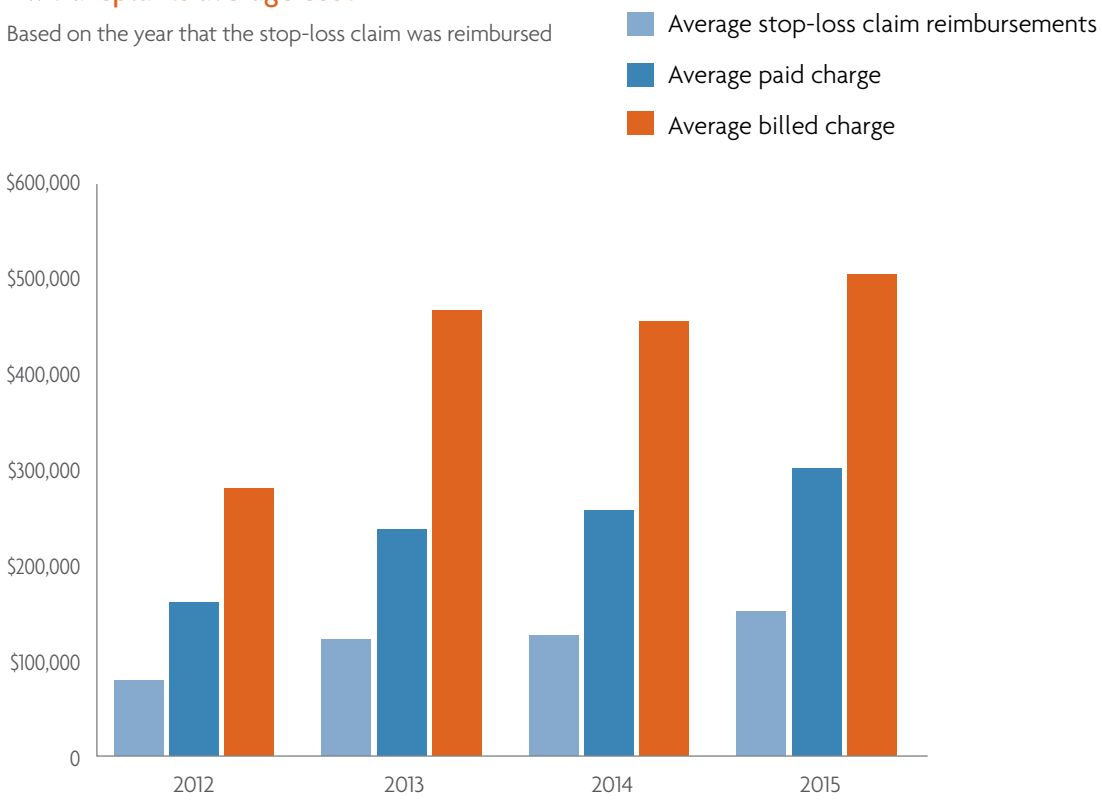


Figure 4

- pre-transplant care and monitoring,
- unplanned pre-transplant hospitalization for acute care needs,
- post-transplant monitoring (such as diagnostic workups and additional office visits), and
- complications.

There are a few reasons that might expain why transplants are up:

1. Increased organ donations,
2. Better and safer procedures (which in turn can increase the pool of potential transplant candidates), and
3. More uses for transplants (such as bone marrow/stem cell transplants for sickle cell anemia and Parkinson's disease).

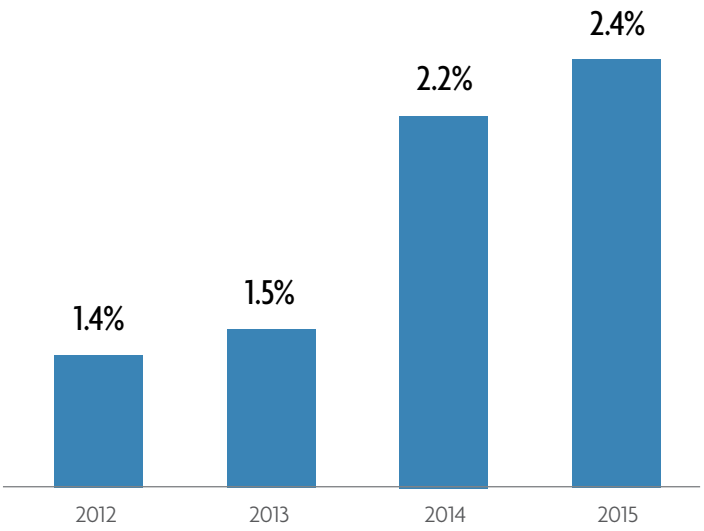
In general, the study data reflected the increase in transplants in the U.S. overall. For example, based on statistics provided by the Organ Procurement and Transplantation Network (OPTN), in a *USA Today* article, the number of organ transplants in general has been increasing.[10] The article reports that in 2015, the U.S. hit an all-time high of 30,973 transplants.

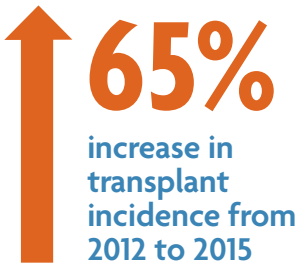
It's reasonable to project that two levers—the number of donated organs and the expanded uses of transplants—will continue to impact the increase in transplants on a short- and long-term basis.

Transplants way up

There was a 65% incidence increase in transplants, driven in part by bone marrow/stem cell transplants, which quadrupled in 2015.

Transplant claimants as a percentage of total claimants





Data based on Sun Life Stop-Loss claims as of year-end 2015.

Figure 5

10. Kim Painter, "U.S. Organ Transplants Reach 30K Milestone, Thanks to Increased Donations," *USA TODAY*, January 13, 2016, http://www.usatoday.com/story/news/2016/01/13/us-organ-transplants-reach-30k-milestone-thanks-increased-donations/78695138/.

High-cost intravenous medications

Intravenous medications have a significant impact on catastrophic claims costs. The top 20 intravenous medications in 2015 accounted for over 60% of all intravenous medications and represented $54.5 million, or 7.6%, of the total stop-loss claims reimbursements. The relative costs associated with the medical conditions were cancer at 50%, hemophilia (a hereditary blood-clotting disorder) at 19%, and paroxysmal nocturnal hemoglobinuria (a rare blood disease)[11] at 15%. (To see a list of the 2015 top 20 intravenous medications, see Appendix 3 on page 23.)

One cancer medication, Perjeta, reflected a significant increase in costs over time. In 2014, it held the #25 position in intravenous medications for catastrophic claims conditions, with approximately $629,000 in stop-loss claims reimbursements. By 2015, that number had increased by 138.5% to $1.5M, and the medication had moved up to #14.

Why the increase? It could be due to use of the medication beyond its original purpose. For example, when Perjeta was first released in 2012, the U.S. Food and Drug Administration (FDA) defined it as a new therapy "[t]o treat patients with HER2-positive late-stage (metastatic) breast cancer."[12] Then, in 2013, the FDA approved an additional use for Perjeta for "[e]arly stage breast cancer before surgery (neoadjuvant setting)."[13] By expanding approved uses for the medication, it follows that the medication's overall use increased.

2015 associated medical conditions for the top 20 intravenous medications

By percentage

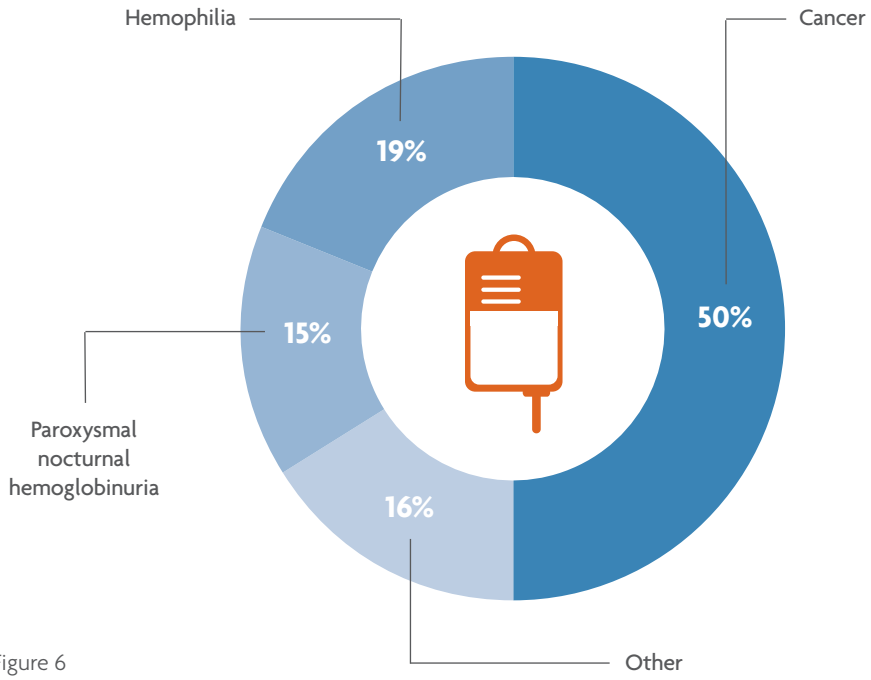


Figure 6

11. Johns Hopkins website, accessed on April 13, 2016, http://www.hopkinsmedicine.org/kimmel_cancer_center/types_cancer/paroxysmal_nocturnal_hemoglobinuria_pnh.html.
12. U.S. Food and Drug Administration, June 8, 2012, press release, http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm307549.htm.
13. U.S. Food and Drug Administration, September 30, 2013, press release, http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm370393.htm.

Another intravenous medication, Soliris, which was used to treat paroxysmal nocturnal hemoglobinuria, generated the highest costs. In 2015, the average stop-loss claims reimbursement for that medication was about $673,000.

The cost of specialty medications is a common topic in the media. There are a variety of definitions for "specialty medications," but usually these refer to medications that require special conditions (such as temperature control) or special delivery methods (such as an intravenous application) or that are viewed as particularly high cost. Whether any given intravenous medication tracked in the study may be considered a "specialty medication" depends on which definition of "specialty" is used.

Overall, U.S. prescription costs continue to increase.[14] Express Scripts reports, "Despite accounting for only 1% of all U.S. prescriptions, these [specialty] medications represented 31.8% of all 2014 drug spend—an increase from 27.7% in 2013."[15]

It seems likely that intravenous medication costs will continue to increase.

Intravenous medications

Intravenous medications have a significant impact on catastrophic claims costs.

2015 top five intravenous medications

Rank	Medication (trade name example)	Associated condition	Condition type	Paid charges
1	**Soliris**	Paroxysmal nocturnal hemoglobinuria (blood disorder)	Blood	$8.1M
2	**Avastin**	Cancer (multiple cancer types)	Cancer	$6.4M
3	**Herceptin**	Cancer (breast, metastatic gastric cancer, HER2+)	Cancer	$5.0M
4	**Neulasta**	Cancer (chemotherapy induced neutropenia)	Cancer	$5.0M
5	**Rituxan**	Cancer (lymphoma, leukemia, others)	Cancer	$3.1M

Figure 7

14. U.S. Department of Health and Human Services, ASPE (Office of the Assistant Secretary for Planning and Evaluation), "Observations on Trends in Prescription Drug Spending," March 8, 2016, https://aspe.hhs.gov/pdf-report/observations-trends-prescription-drug-spending.
15. Express Scripts, "Insights: U.S. Rx Spending Increased 13.1% in 2014," http://lab.express-scripts.com/insights/industry-updates/us-rxspending-increased-13-percent-in-2014. Note: Express Scripts uses the CVS/Caremark definition of "specialty" medications.

Million-dollar+ claimants

Highest-cost million-dollar conditions

The top two highest-cost million-dollar claimant conditions were 1) premature infant and liveborn complications and 2) cancers, which represented 36.6% of paid claims associated with million dollar claimant conditions.

To find the million-dollar claimants, we calculated total paid charges, which included the cost of first-dollar claims (claims that were below the stop-loss deductible) and stop-loss claims reimbursements.

High-cost claimants continued to trend up

The data showed an increase of 25% in million-dollar claimants compared to last year's report (covering 2011–2014). Less than 2% of stop-loss claimants produced million-dollar reimbursements, but accounted for a disproportionate 18.5% of the total stop-loss claims reimbursements. During 2012–2015, there were 448 million-dollar claimants, representing $431.2M. This is a reflection of what we see in the U.S. population at large, where 5% of the population spends 50% of health care dollars.[16]

Million-dollar claimant conditions

The higher frequencies associated with cancers, chronic/end-stage renal disease, and transplants increased the overall likelihood that these conditions would produce million-dollar+ reimbursements. In addition, lower frequency, higher-cost conditions (such as hemophilia) produced million-dollar+ stop-loss claims reimbursements. During 2012–2015, the top two highest-cost million-dollar claimant conditions were 1) premature infant and liveborn complications[17] and 2) cancers. The top two conditions represented over one-third (36.3%) of all million-dollar claimant conditions and over $236 million in paid charges. Of those paid charges, the average first-dollar costs were over $1.45M, and the average stop-loss claims reimbursement was approximately $962,000 per claimant, leaving an average net payment by employers of $491,000 per million-dollar claimant.

Factors that influence million-dollar claims

Particular factors can influence the cost of a claim rising to a million dollars and beyond. Some are specific to the plan member's medical care, such as extended hospital stays, highly specialized treatments, or high-cost medications. Other broader factors include the number of members on the plan. For example, the data revealed that the larger the population an employer has, the greater the probability that there would be more million-dollar claimants. Smaller employers do experience million-dollar claims, but less so than larger employers. For example, from 2012 to 2015, approximately one-third of employers with 5,000+ employees experienced a million-dollar+ claimant in a policy year, while less than 1% of employers with under 200 employees experienced a million-dollar+ claimant.

Sun Life affirms its belief that the million-dollar claimants will remain a key contributor to stop-loss claims reimbursements.

Claimants with $1 million+ claims

	2012	2013	2014	2015
$1–$1.5M	61	71	80	107
$1.5–$2M	10	17	13	25
$2–$3M	2	20	10	16
$3M+	4	6	1	5
Total	**77**	**114**	**104**	**153**
% of total claimants	1.3%	1.9%	1.7%	1.9%
Paid stop-loss claims	**$71.5M**	**$129.8M**	**$83.5M**	**$146.3M**
% of total paid stop-loss claims	14.1%	23.6%	15.3%	20.3%

Figure 8

16. NIHCM Foundation, "Health Care's Big Spenders: The Characteristics Behind the Curve," January 1, 2016, http://www.nihcm.org/categories/article/health-care-s-big-spenders-the-characteristics-behind-the-curve.
17. This represents three categories: congenital anomalies (conditions present at birth), disorders relating to short gestation and low birth weight (premature birth), and liveborn complications.

Total million-dollar+ claims costs

Provider charges for services

Discounts are applied to billed charges

Employer pays amount below the stop-loss deductible; stop-loss reimburses for amounts above it

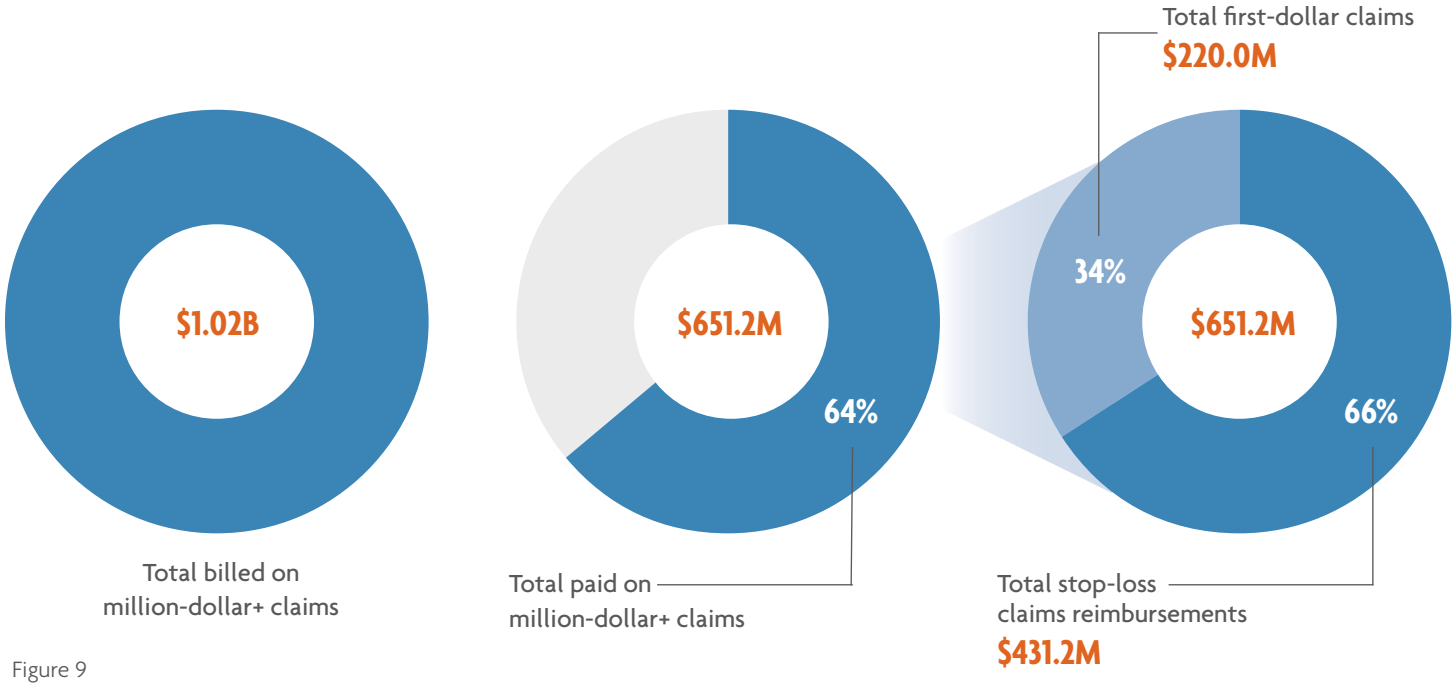


Figure 9

Average million-dollar+ claim costs

Provider charges for services

Discounts are applied to billed charges

Employer pays amount below the stop-loss deductible; stop-loss reimburses for amounts above it

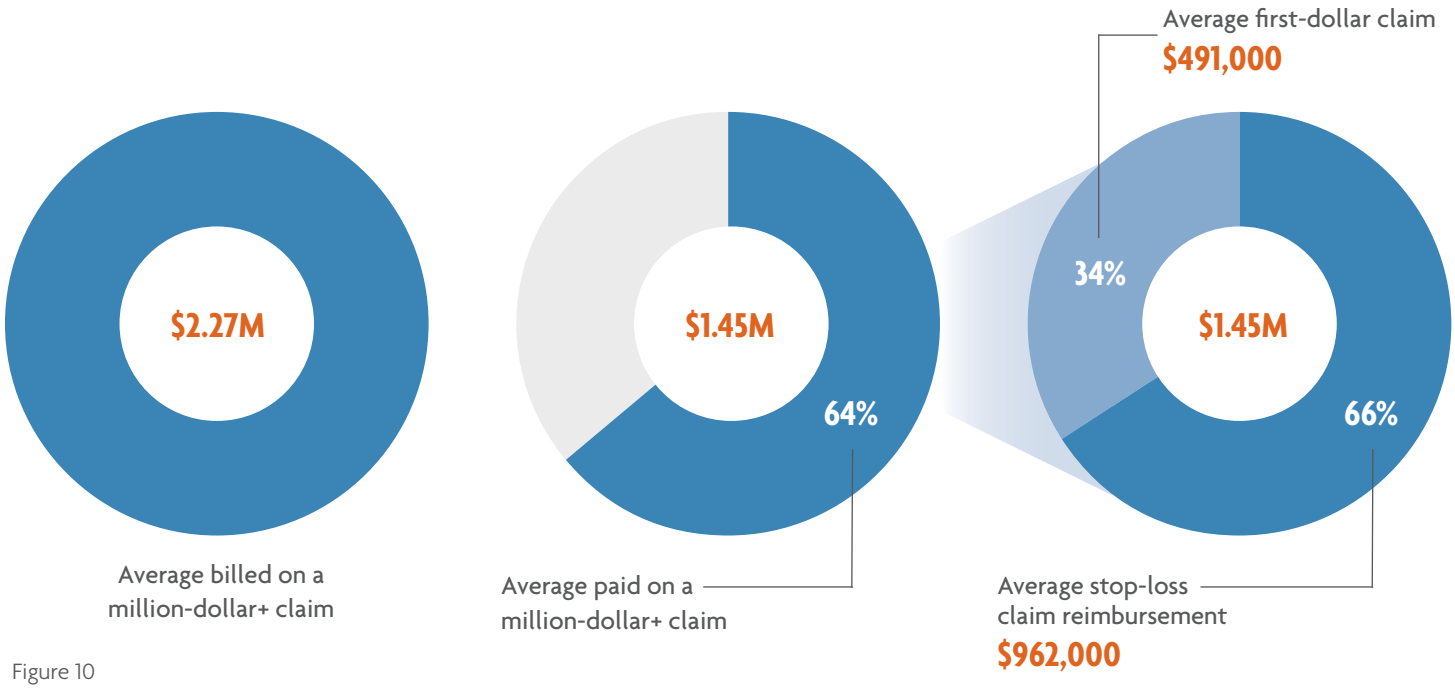


Figure 10

Employer costs

The cost of what, where, and who

Billed and paid charges, location demographics, and stop-loss deductibles all influence net employer costs.

A variety of factors impact catastrophic claims costs for employers. To examine those in depth, we reviewed billed and paid charges, geographic location, employee demographics, and stop-loss deductibles. It's important to note that average costs are influenced by severity (the total cost of the claims) and frequency (the rate at which the conditions appear).

Billed and paid charges

Average billed and paid charges varied by condition. For example, transplants had the highest average paid charge at approximately $243,000, while the lowest was for respiratory failure/pulmonary collapse (lungs) at about $123,000. In addition, certain conditions showed a higher level of volatility in billed and paid charges. Specifically, the billed charge for chronic/end-stage renal disease was at least twice as much as the paid charge for 40% of claims for that condition. In addition, the average paid charge for chronic/end-stage renal disease was approximately $227,000 with a 45% average discount—which was one of the highest average discounts among the top ten catastrophic claims conditions.

Geographic location

Costs for medical care varied based on location. The most expensive regions to experience a catastrophic condition, showing figures above the national average, were East South Central at +27%, Mid-Atlantic at +22%, and Pacific at +19%. The regions closest to the overall national average were Mountain and New England. The least expensive region to experience a catastrophic condition was East North Central, where costs were 20% below the national average.

The costs for particular top ten catastrophic claims conditions also showed regional differences. The region with the highest average costs for transplants was East South Central at about $450,000, while the lowest was South Atlantic at approximately $169,000.

Average medical charges across the U.S.

Rank	Condition	Average discount %	% of billed charges that were 200%+ of paid charges	Average paid charge
1	**Malignant neoplasm** (cancer)	37%	27%	$139,843
2	**Leukemia/lymphoma/multiple myeloma** (cancers)	36%	23%	$229,568
3	**Chronic/end-stage renal disease** (kidneys)	45%	40%	$227,546
4	**Congenital anomalies** (conditions present at birth)	36%	23%	$183,275
5	**Disorders relating to short gestations and low birthweight** (premature birth)	34%	19%	$235,245
6	**Transplant**	41%	27%	$242,578
7	**Congestive heart failure**	40%	28%	$181,320
8	**Cerebrovascular diseases** (brain blood vessels)	41%	30%	$129,024
9	**Pulmonary collapse/respiratory failure** (lungs)	45%	30%	$122,721
10	**Septicemia** (infection)	39%	31%	$173,912

Figure 11

Average paid charges across the nation

This map shows how each region compares to the national average

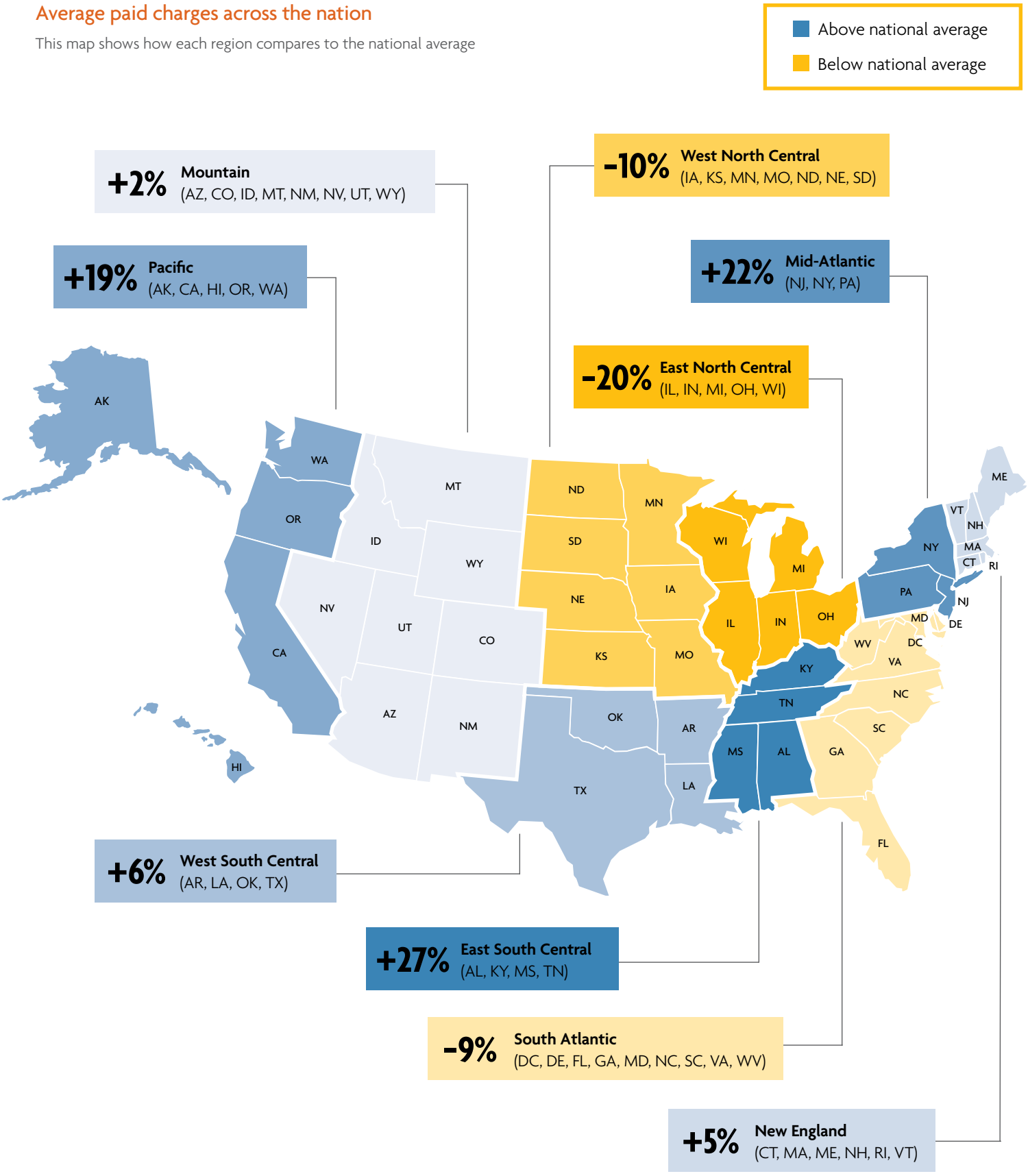


Figure 12

Source: Average national catastrophic claims charge based on an internal analysis of 2012–2015 catastrophic claims charges associated with claims reimbursements that Sun Life paid. Regional average paid charges were compared to the national average. The regions were determined based on state divisions defined by the U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau.

Employee demographics

In addition to geographic location, member population demographics help determine claims costs. (A member is an employee or dependent in a self-funded medical plan.)

The study found that during 2012–2015, gender influenced the top ten catastrophic conditions costs. Male claimants generated 59% of first-dollar employer-paid claims combined with stop-loss reimbursements for all top ten catastrophic claims conditions except malignant neoplasm. Female claimants generated 52% of malignant neoplasm first-dollar and stop-loss reimbursement costs.

Next, the study examined claimants' ages. More than two-thirds of the top ten catastrophic claims total paid dollars were generated by claimants over 40 years of age. Those categories were malignant neoplasm (cancer), chronic/end-stage renal disease (kidneys), and congestive heart failure. In each of those three categories, claimants who were over 40 years of age generated more than 80% of the total paid claims.

Only two categories were dominated by claimants under 40—congenital anomalies (conditions present at birth) and disorders relating to short gestation and low birthweight (premature birth). Dependent infant claimants—the primary source of claims in these two categories—also produced 32% of the costs of the million-dollar+ claims, making them the largest driver of million-dollar stop-loss claims reimbursements.

Percentage of employers with at least one stop-loss claim

By deductible

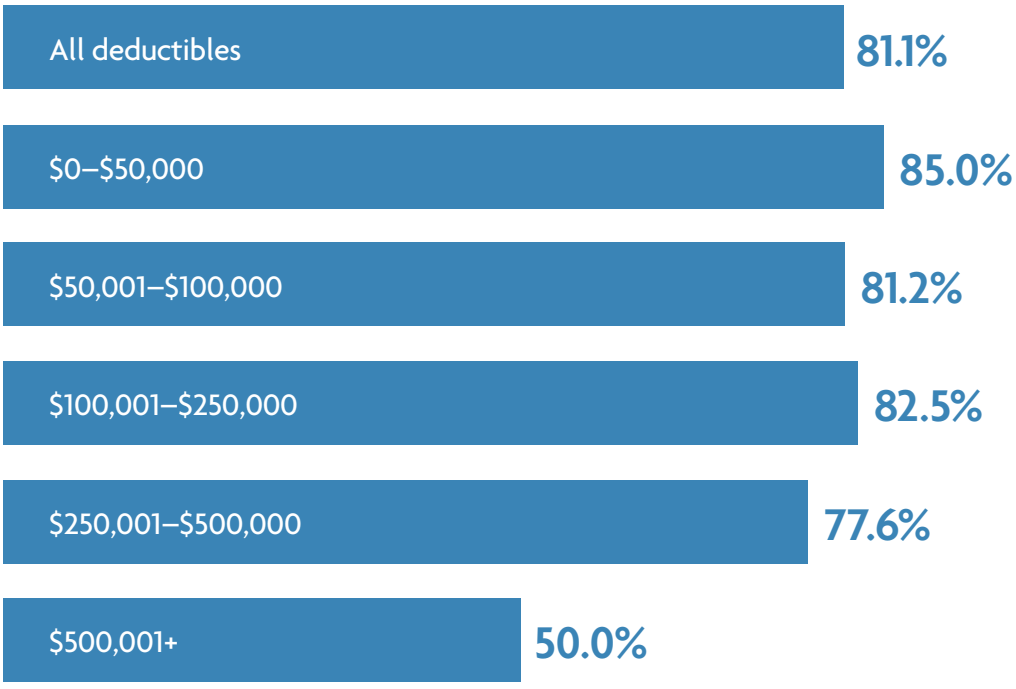


Figure 13

Stop-loss deductibles

The last key factor in net catastrophic claims costs is the stop-loss deductible. It's also the factor over which employers have control.

The data showed that lower deductible levels align with higher rates of stop-loss claims reimbursements. Eighty-five percent of employers with stop-loss deductibles of $50,000 or below received stop-loss claims reimbursements during their policy periods. The simple reason for this high percentage of reimbursements is that the lower a deductible is, the higher the probability that there will be more claims above that amount. Of course, a low deductible is not a precipitator of catastrophic claims. But when catastrophic claims occur and a lower deductible is in place, a greater percentage of high-dollar claims will breach the deductible and be eligible for reimbursement.

Conversely, only half of employers with deductibles higher than $500,000 received stop-loss claims reimbursements. This is because relatively fewer claims breached the high-deductible levels.

Percentage of employers with at least one stop-loss claim

By claim type and deductible

Claim type	$0-$50,000 deductible	$500,000+ deductible
Malignant neoplasm (cancer)	44.4%	18.1%
Dorsopathies (spine)	29.2%	0.9%
Complications of surgical and medical care not elsewhere classified	10.8%	6.9%
Cerebrovascular diseases (brain blood vessels)	10.3%	3.4%
Leukemia/lymphoma/multiple myeloma (cancers)	9.1%	12.1%
Congenital anomalies (conditions present at birth)	8.3%	15.5%
Pulmonary collapse/respiratory failure (lungs)	7.5%	13.8%
Chronic/end-stage renal disease (kidneys)	7.2%	10.3%
Disorders relating to short gestations and low birthweight (premature birth)	3.7%	13.8%
$1M+ claim	0.2%	27.6%
Birth-related*	16.1%	24.1%

Figure 14

*This category includes: complications mainly related to pregnancy; complications occurring mainly in the course of labor and delivery; congenital anomalies (conditions present at birth); disorders relating to short gestation and low birthweight (premature birth); liveborn; normal delivery and other indications for care in pregnancy, labor, and delivery; other respiratory conditions of fetus and newborn; and slow fetal growth and fetal malnutrition.

Overall catastrophic claims cost for self-insured employers

During the four years of the study, billed charges from providers for catastrophic conditions were **$9.0 billion**. After discounts were applied to charges, self-insured employers paid **$5.3 billion**—over half of the original charges. Stop-loss provided the self-insured employers with a total of **$2.3 billion** in reimbursements for the catastrophic claims.

BILLED CHARGES

Health care providers

$9.0B

Discounts

− $3.7B =

TOTAL PAID

Employer

$3.0B

First-dollar claims payments on stop-loss claims only

+

Stop-loss carrier

$2.3B =

Stop-loss claims reimbursements

Total amount spent on catastrophic conditions

$5.3B

First-dollar stop-loss claims payments and stop-loss claims reimbursements

Figure 15

TOP 20 PRIMARY INDUSTRIES
for participating policyholders

Rank	SIC code	Industry
1	8062	Health and hospitals: hospitals, general, medical, surgical
2	8211	Education: elementary and secondary schools
3	9111	Public/government: executive offices
4	8221	Education: colleges and universities
5	7011	Hotels, motels, and tourist courts
6	5961	Wholesale and retail trade: catalogue and mail order houses
7	8069	Specialty hospitals other than psychiatric
8	6722	Management investment offices
9	8051	Skilled nursing care facilities
10	8711	Engineering services
11	8011	Offices and clinics of doctors of medicine
12	8099	Health and allied services
13	4213	Trucking other than local
14	8059	Nursing and personal care facilities
15	5411	Grocery stores
16	5621	Women's clothing stores
17	7389	Business services
18	6732	Educational and religious trusts
19	7372	Prepackaged software
20	8742	Management consulting services

Figure 16

Recommendations

When the employer, broker, claims administrator, and stop-loss carrier all work together, they can identify new, effective ways to manage claims costs and support improved patient outcomes. Consider using any of these recommendations as part of your approach:

- **Determine** which medical conditions have the largest impact on the plan's medical expenses.
- **Understand** employee demographics and whether the demographic profile indicates the likelihood of certain types of catastrophic conditions.
- **Ask** the claims administrator how it identifies and manages emerging high-cost claims. Inquire about its approach to managing common high-cost conditions, including any partnerships it may have with vendors or the stop-loss carrier.
- **Examine** the current use of specialty medications. Does the claims administrator or pharmacy benefits manager have programs in place to specifically control the costs associated with these medications?
- **Know** about newly approved and emerging medical treatments and medications, as well as changes in approved uses for specific medications. Assess the potential impact of these changes and determine whether adjustments to the plan language should be made.
- **Evaluate** the stop-loss coverage and decide if the right deductible levels are in place. Consider risk tolerance and claims experience when thinking about possible changes to deductible levels.
- **Check** with the stop-loss carrier to find out if clinical resources are available to work with claims administrators and cost-containment vendors in order to identify opportunities for cost savings.

About the study

Sun Life conducted an internal aggregate analysis of its stop-loss claims conditions and associated costs during the years 2012 to 2015.

Methodology

For all reporting except employer reimbursement incidence, the claims data included Specific stop-loss claims paid as of December 31 for each year from 2012 to 2015. From a data perspective, the impact on the analysis due to policy reimbursement caps or lasering was not significant.

Because employer reimbursement incidence reporting requires calculating claims on a policy year basis, the claims data for employer reimbursement incidence were derived from stop-loss claims reimbursements that applied to the stop-loss policy year during 2011 to 2014.

Claimants who breached the $1 million threshold were determined using all paid claims dollars (below and above the stop-loss deductible) attributable to that claimant during the calendar year—January 1 to December 31 for each year from 2012 to 2015.

Rounding was on a "to nearest" basis.

Claims conditions categories

To create conditions categories, Sun Life reviewed all claims conditions and combined similar conditions and billing categories.

Data demographics

The claims data were from Sun Life Stop-Loss policyholders ranging in size from approximately 50 to over 100,000 employees, located across the United States. The case size of these policyholders was determined by counting the number of employee lives covered by the stop-loss policy.

Sun Life Stop-Loss book of business

1,979
policyholders

$1.16B
in premium

5.2M
covered lives

Data as of year-end 2015.

Figure 17

GLOSSARY

Aggregate stop-loss insurance: One of the two types of stop-loss insurance, it protects the self-insured employer if the total of all claims under the Specific deductible is higher than expected (for the other type of stop-loss insurance, see "Specific stop-loss insurance")

Billed charges: The initial amount that a health care provider (such as a hospital) charges

BMT: Bone-marrow transplant

CKD: Chronic kidney disease, a medical condition where there is permanent damage to the kidney(s) but they still function well enough to sustain life

Catastrophic claim: A claim that exceeds the Specific stop-loss deductible

Catastrophic claims condition: The underlying medical condition associated with a claim that exceeds the stop-loss deductible

Claimant: The member who incurred charges under the medical plan

Claim: Charges submitted for reimbursement

Co-morbidity: the occurrence of diseases (or disorders) in addition to the primary medical condition

Direct writer: A carrier that specializes in stop-loss coverage but does not provide the medical claims administration

ESRD: End-stage renal disease, a medical condition where the kidneys are permanently damaged, cannot sustain life, and require dialysis or transplant

First-dollar claim: A claim that an employer pays that is below the stop-loss deductible

Fully insured: A funding arrangement where the employer pays a premium to a health insurance carrier to accept the full financial risk of providing health coverage (the premium covers claims administration, risk and pooling charges, and the cost of the medical services)

Funding arrangement: How an employer chooses to handle the risk of providing medical benefits—two popular ways are by self-funding (where the employer assumes the risk itself and can mitigate that risk with stop-loss insurance) or by fully insuring (where the employer pays premiums to a health insurance carrier to assume the total risk)

Health plan administrator: The self-insured employer typically hires an organization to administer the health plan and provide services such as paying claims, requesting claims reimbursements from the stop-loss carrier, and processing those reimbursements

Intravenous medication: Treatment that is administered through a vein

Leveraged trend: How medical trend impacts stop-loss claim liability (it is one of the factors used when determining stop-loss premium)

Malignant neoplasm: A cancerous tumor (in this report, we identified this category by claims with International Statistical Classification of Diseases and Related Health Problems (ICD-9) cancer codes 140–208)

Medical trend: The impact of inflation on health care costs over time (it is one of the factors used when determining stop-loss premium)

Paid charges: The amount paid to the health care provider (such as a hospital) after discounts are applied

Plan document: The medical plan document in a self-insured funding arrangement (also called the "underlying medical plan" or the "plan doc")

Plasma: The liquid portion of the blood—specifically, a protein-salt solution in which red blood cells, white blood cells, and platelets are suspended

Providers: Medical professionals or organizations that provide health services (examples include doctors, nurses, dentists, therapists, and hospitals)

Specific stop-loss insurance: One of the two types of stop-loss insurance, it protects the self-insured company from large claims that occur for any one covered individual, such as a claim related to premature birth or a kidney transplant (for the other type of stop-loss insurance, see "Aggregate stop-loss insurance")

Self-insured (also referred to as "self-funded"): A funding arrangement where instead of paying premiums to a health insurance carrier, the employer accepts the full financial risk of providing health coverage, including paying for both the cost of medical services and claims administration—traditionally, the employer hires a health plan administrator to manage claims

Situs state: the geographic location of an entity (for companies, the situs location establishes where the company is registered and what taxes apply)

Stop-loss insurance: Protection against the risk exposure of a self-funded medical plan

Stop-loss claim: A claim that exceeds the stop-loss deductible

Stop-loss claim payment: Another way to refer to a "stop-loss claim reimbursement" (see definition below)

Stop-loss claim reimbursement: After the stop-loss deductible is met, a payment provided by the stop-loss carrier to reimburse the employer for the portion of the claim that exceeds the stop-loss deductible according to the stop-loss policy

Stop-loss deductible: When a stop-loss insurance policy is in place, the portion of the claim risk that the employer retains (the amount above the deductible is reimbursed according to the stop-loss policy)

Transplant: The replacement of organs or tissues in a human from a donor (examples include bone marrow, kidney, and heart)

White blood cells: cells that help fight infection (also called "leukocytes")

Appendix 1

TOP 10 MILLION-DOLLAR+ CLAIMS 2012–2015

Highest stop-loss claim reimbursements within each top ten condition

Rank	Condition	Total billed charges	Total paid charges	Stop-loss claims reimbursements only
1	**Malignant neoplasm** (cancer)	$3.3M	$3.2M	$2.9M
2	**Leukemia/lymphoma/multiple myeloma** (cancers)	$3.7M	$2.3M	$2.1M
3	**Chronic/end-stage renal disease** (kidneys)	$4.2M	$3.0M	$3.0M
4	**Congenital anomalies** (conditions present at birth)	$4.8M	$2.8M	$2.6M
5	**Disorders relating to short gestations and low birthweight** (premature birth)	$7.0M	$4.0M	$3.7M
6	**Transplant**	$3.1M	$2.2M	$1.7M
7	**Congestive heart failure**	$15.3M	$3.8M	$2.3M
8	**Cerebrovascular diseases** (brain blood vessels)	$2.7M	$2.1M	$1.7M
9	**Pulmonary collapse/respiratory failure** (lungs)	$7.2M	$1.7M	$1.6M
10	**Septicemia** (infection)	$2.9M	$2.7M	$2.5M

Ten largest paid claims

Includes co-morbidity costs for both first-dollar and stop-loss claims reimbursements

Rank	Total billed charges	Total paid charges	Stop-loss claims reimbursements only	Condition
1	$5.4M	$4.2M	$2.7M	**Hemophilia/bleeding disorder**
2	$7.1M	$4.1M	$3.9M	**Disorders relating to short gestation and low birth weight** (premature birth)
3	$4.7M	$4.0M	$3.0M	**Disorders relating to short gestation and low birth weight** (premature birth)
4	$15.4M	$3.9M	$2.4M	**Congestive heart failure**
5	$8.4M	$3.9M	$3.1M	**Diseases of the blood and blood-forming organs**
6	$4.0M	$3.5M	$3.3M	**Cardiac dysrhythmias** (heart)
7	$3.4M	$3.4M	$3.1M	**Arthopathies and related disorders**
8	$3.7M	$3.3M	$2.0M	**Cystic fibrosis**
9	$5.5M	$3.3M	$3.0M	**Congenital anomalies** (conditions present at birth)
10	$3.4M	$3.2M	$2.5M	**Other respiratory conditions of fetus and newborn**

Appendix 2

TOP 10 CONDITIONS BY DEDUCTIBLE 2012–2015

Frequency of top ten conditions with stop-loss deductibles at or below $100,000

Rank	Medical condition
1	**Malignant neoplasm** (cancer)
2	**Dorsopathies** (spine)
3	**Osteoarthrosis and allied disorders**
4	**Coronary atherosclerosis** (heart)
5	**Symptoms, signs and abnormal clinical and laboratory findings**
6	**Arthropathies and related disorders**
7	**Leukemia/lymphoma/multiple myeloma** (cancers)
8	**Cardiac dysrhythmias** (heart)
9	**Other**
10	**Complications of surgical and medical care**

Frequency of top ten conditions with stop-loss deductibles over $100,000

Rank	Medical condition
1	**Malignant neoplasm** (cancer)
2	**Leukemia/lymphoma/multiple myeloma** (cancers)
3	**Chronic/end-stage renal disease** (kidneys)
4	**Congenital anomalies** (conditions present at birth)
5	**Cerebrovascular disease** (heart)
6	**Complications of surgical and medical care**
7	**Pulmonary collapse/respiratory failure** (lungs)
8	**Symptoms, signs, and abnormal clinical and laboratory findings**
9	**Dorsopathies** (spine)
10	**Other**

Appendix 3

TOP 20 INTRAVENOUS MEDICATIONS in 2015

Rank	Medication (trade name example)	Associated condition	Billed charges	Paid charges
1	**Soliris**	Blood disorder	$21,010,042	$8,081,091
2	**Avastin**	Cancer	$12,049,027	$6,447,326
3	**Herceptin**	Cancer	$8,872,092	$5,012,764
4	**Neulasta**	Cancer	$7,550,830	$4,978,815
5	**Rituxan**	Cancer	$4,897,249	$3,135,286
6	**Hemophilia-clotting factor (J7199)***	Blood-clotting disorder	$3,067,565	$2,620,340
7	**Remicade**	Chronic inflammatory diseases	$3,765,217	$2,385,545
8	**Obizur**	Blood-clotting disorder	$3,131,768	$2,205,858
9	**Erbitux**	Cancer	$3,106,380	$2,168,945
10	**Gammagard**	Immunodeficiency disorders	$5,493,855	$2,099,255
11	**Factor VIIa recombinant (J7189)***	Blood-clotting disorder	$2,135,193	$2,073,945
12	**Injection Factor IX (J7201)***	Blood-clotting disorder	$2,200,907	$2,032,366
13	**Gamunex-C**	Immunodeficiency disorders	$3,477,926	$1,754,665
14	**Perjeta**	Cancer	$2,965,855	$1,527,379
15	**Hemophilia, anti-inhibitor (J7198)***	Blood-clotting disorder	$1,468,506	$1,468,506
16	**Fabrazyme**	Genetic disorder	$1,713,480	$1,447,780
17	**Alimata**	Cancer	$2,770,021	$1,362,975
18	**Tysabri**	Monoclonal antibody	$1,818,467	$1,336,264
19	**Velcade**	Cancer	$2,315,885	$1,272,410
20	**Yervoy**	Cancer	$4,930,502	$1,162,820

*When the claim was received, medication was listed as "not otherwise classified." Use the "J-code" to find trade names at the Centers for Medicare and Medicaid Services website at www.cms.gov.

Appendix 4

Key employer decisions

Whether you are already self-funded or are considering becoming self-funded, it's good to consider all the options so you make the right play for your business. When it comes to self-funding, there are three key decision points:

1. Funding arrangement—how will an employer pay for health insurance benefits for its employees? To answer the question, an employer needs to first determine its benefits strategy and financial goals. Understanding its risk tolerance, size, and cash-flow needs will help the employer decide if it should be fully insured, self-funded with stop-loss insurance, or self-funded without stop-loss insurance.

2. Claims administrator—selecting a claims administrator determines the provider network or networks available to the employer and its health plan members. In addition, the claims administrator and its administration approach can have a significant impact on the success of the self-funded strategy and the benefits experience of the health plan members.

3. Stop-loss insurance—for many employers, the risk associated with a self-funded health plan is managed through stop-loss insurance. To choose the right stop-loss carrier and protection level, the employer needs to consider its own financial profile (including risk tolerance), its claims experience, and the potential carrier's attributes and product options.

Once the key decisions have been made, it's wise to create an action plan. If the employer chooses to self-fund, it now has the flexibility to design a health plan to suit its business and can strategize about cash-flow management and stop-loss coverage. In addition, the broker, administrator, and stop-loss carrier can team up to help the employer contain costs and improve patient outcomes.

Need an action plan? You got it.

Get more guidance on making the key self-funding decisions in the Self-Funded Playbook. You'll find tips you can use immediately. Leverage the information to gain a deeper understanding of how to contain costs and improve patient outcomes. Then, chart your way forward with a helpful action plan—included in the Self-Funded Playbook.

Download a free Self-funded Playbook now.

Or, go to the News and Insights section on www.sunlife.com/us and look for Self-Funded Playbook.

Get expertise

Contact your Sun Life Stop-Loss Specialist.

One Sun Life Executive Park • Wellesley Hills, MA 02481
866-683-6334 • www.sunlife.com/us

GSLPB-5607h

Visit us at www.sunlife.com/us.

SLPC 27427 06/16 (exp. 06/21)