# Catastrophic Claim Trends and Medical Excess Costs

*By Mark Troutman*

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There are still considerable uncertainties about the impact of health care reform on the direct insurance market and the reinsurance market that supports it through quota share and excess of loss protection. Although passage of the Patient Protection and Affordable Care Act significantly expands coverage, it doesn't appear to reduce costs. Keeping in mind the pace of medical technology, here's a look at current catastrophic claim trends and their effect on medical excess insurance and reinsurance costs.

## NEONATAL INTENSIVE CARE

The incidence of premature births has dropped, a trend which it's hoped will continue. Until recently, it had increased steadily for the past 30 years. Approximately 20 percent of overall commercial reinsurance claim costs are from preterm infants and congenital anomalies. For Medicaid it is more than 50 percent. Preterm is defined as gestation of 36 weeks or less. According to the Feb. 16, 2010 issue of *Pediatric Magazine* and the March of Dimes, the average cost of a preterm birth is over 10 times that of a full-term birth ($49,000 vs. $4,500).

At the same time, the frequency of multiple births, which are always a significant cost, continues to rise. According to 2007 statistics from the Institute of Medicine, 3.4 percent of all births are multiple births. The increase can be attributed to several factors, including older mothers, usage of fertility drugs, and assisted reproductive technologies. Among the complications arising from multiple births are low birth weights, preeclampsia in the mother, (a life-threatening condition that can include convulsions and coma, also called toxemia of pregnancy), as well as gestational diabetes (diabetes that's only present during pregnancy).

**"CLAIM ACTIVITY IN EXCESS OF $1 MILLION DOLLARS SHOWS THAT CATASTROPHIC CLAIMS CONTINUE TO INCREASE IN FREQUENCY AND SEVERITY DUE TO OUR HEALTH CARE SYSTEM'S HIGH COSTS AND EVER-ADVANCING TECHNOLOGY."**

## CANCER CARE

There's also good news in cancer care, per the National Cancer Institute. Death rates for the most common forms of cancer (prostate, breast, lung, colon) and for cancer overall continue to decline. This is due, in part, to favorable trends such as the decline in smoking and an increase in screening capabilities for cancer.

Cancer treatment represents roughly five percent of national health care spending according to the Centers for Medicare & Medicaid Services (CMS). Despite the decrease in the frequency of some specific cancers as described above, other cancers, including liver, pancreatic, kidney, esophageal, thyroid, non-Hodgkin's lymphoma, leukemia and myeloma, have been on the rise.

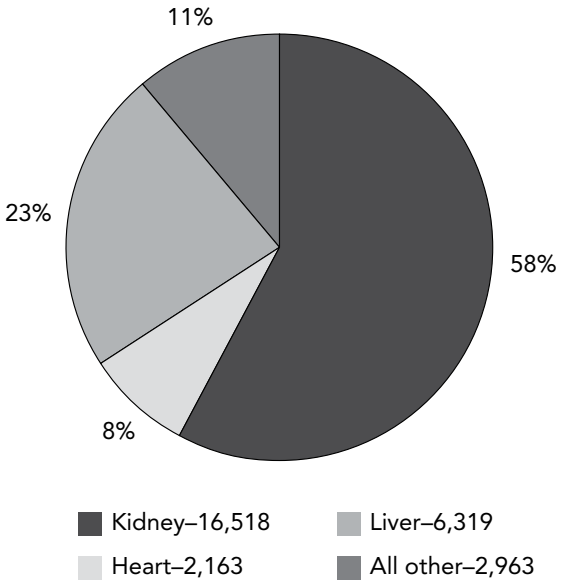
The challenge from a medical cost perspective is the increase in the use and cost of cancer-treating drugs. Avastin is a drug that improves the efficacy of chemotherapy, as it slows tumor growth and starves tumors of their blood supply. It has sales of $4.8 billion, yet it extends survival in colon and lung cancers by just a few months. In breast cancer treatment, it slows disease progression without significantly extending survival. Average costs are $100,000 a year and can be significantly more. It was approved for colon cancer treatment in 2004. A study in April 2009, found that Avastin wasn't effective in preventing recurrences of non-metastatic colon cancer following surgery.

Another new oncology drug, Afinitor, can delay disease progression in patients with kidney cancer by three months. However, some patients receive long-lasting benefits. A cancer drug that delays progression by a few months can be a big moneymaker, especially if it has fewer side effects than the classic cancer drugs that attack all cells, cancerous and normal. Afinitor costs approximately $5,500 per month.

## TRANSPLANT TRENDS

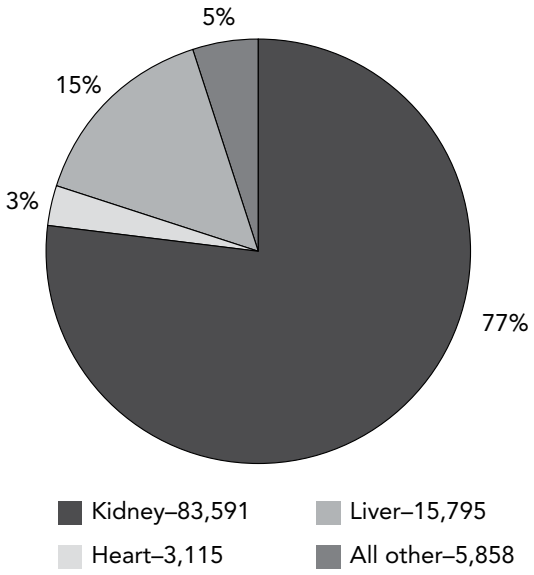
Solid organ and bone marrow transplants have increased due to broader indications for their use, new clinical technologies, and increasing demand. Approximately 47,000 transplants took place in the United States in 2008, according to the United Network for Organ Sharing (UNOS). Of that number there were 28,000 solid organ transplants, 11,000 autologous bone

**CHART 1**
**U.S. solid organ transplants in 2008**




Source: Organ Procurement and Transplantation Network (OPTN)

**CHART 2**
**Current U.S. wait list by solid organ**




Source: OPTN data as of March 2, 2010.

marrow transplants, and 8,000 allogenic bone marrow transplants, at an estimated $15 billion in charges for transplant-related services.

The frequency of various types of solid organ transplants for 2008 continues to be driven by kidneys. Kidneys now represent 58 percent of all solid organ transplants. (See Chart 1)

Since their first successful use in 1968, bone marrow transplants have been used to treat patients diagnosed with leukemia, aplastic anemia, lymphomas, multiple myeloma, immune deficiency disorders and some solid tumors, such as breast and ovarian cancer.

Although the total number of transplants is modestly increasing, the real issue is still the wait list, which hasn't changed significantly over the past few years. UNOS data shows that there were 106,027 unique patients registered on the transplant wait list as of March 2, 2010. Chart 2 shows the current U.S. solid organ transplant wait list by organ type. If there were an increase in the supply of organs, the number of transplants would rise dramatically.

Wait list priority criteria vary by organ but may include age, blood type, medical urgency, geographic distance between donor and recipient, and size of donor organ in relation to the recipient. Waiting time itself is only one primary factor for a kidney transplant. There's a very large and growing gap between the number of patients waiting for a kidney transplant and the number of patients receiving one. To try to close that gap, organs are now being utilized from extended-criteria donors (those who are older and those with kidney or other medical problems whose kidneys weren't used for transplantations in the past).

For liver transplants, there's a slightly decreased wait list for deceased donor liver transplants, a trend that began with the implementation of a scoring system for assessing the severity of chronic liver disease and prioritizing who receives a transplant.

Heart transplants have increased somewhat and the wait list has improved significantly. Ventricular Assist Devices (VADs) are improving heart transplant patient survival rates significantly, as discussed later in this article.

The number of lung transplants is increasing more steeply than other categories and the wait list has dropped dramatically. This reduction is largely attributable to the change in allocation policy, which is formula driven and now considers urgency and ben-

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efit, rather than time spent on the list. As a result, there has been a decrease in the number of individuals who die while waiting for a transplant.

The pancreas transplant list has changed significantly, as well. Simultaneous pancreas-kidney transplants are the most prevalent type of pancreas transplant, although survival rates continue to be moderate. Intestinal transplant volume varies, but the wait list has increased significantly. Intestinal transplants are very rare, with the vast majority occurring in children and adolescents. Bone marrow transplants are less subject to wait list constraints. Often a match can be found and a transplant completed within months.

In 2008, the weighted average billed charges per transplant episode was $427,000. Depending on circumstances, a complex transplant cost can rise to $1 million or more. Since 2005, billed charges for transplants have risen by 12.7 percent per year. Data indicates that there is an overall paid-to-billed discount of 45 percent (Source: OptumHealth and Milliman estimates).

Transplants continue to have successful outcomes. Table 1 indicates patient survival rates by transplant type (figures rounded to the nearest five percent.) The statistics are for deceased donor organs, the vast majority of all donors. Kidney donor data is for deceased donors who aren't extended criteria donors. Living donors can donate a kidney and parts of their liver, lungs, pancreas or intestines.

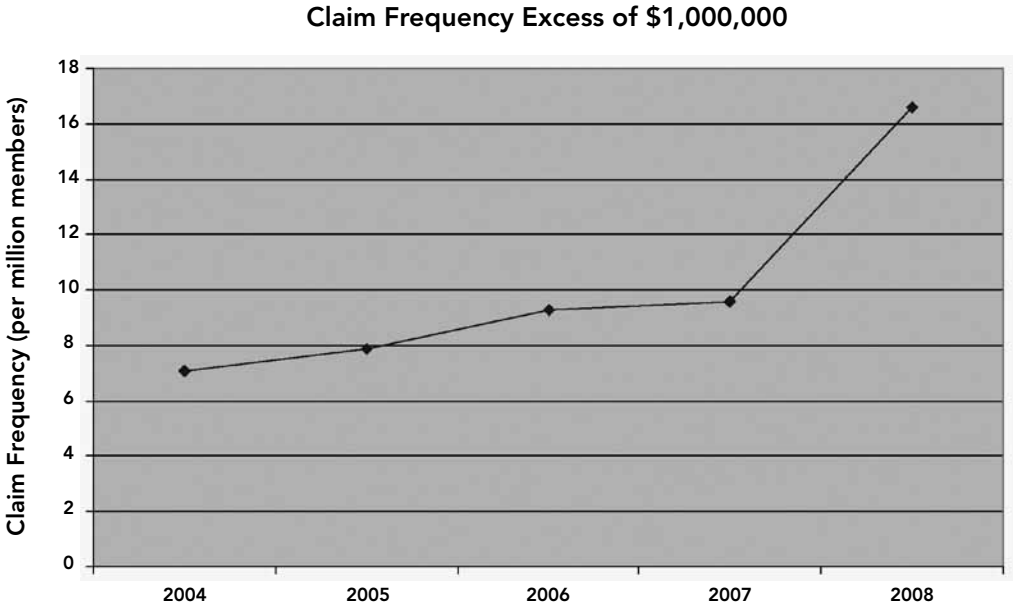
**Table 1 – Patient Survival Rates**

| Transplant Type | 1 Year | 5 Year |
|---|---|---|
| Kidney | 95% | 85% |
| Liver | 85% | 75% |
| Intestine | 80% | 55% |
| Pancreas | 95% | 85% |
| Lung | 85% | 55% |
| Heart | 90% | 75% |

**Source: 2007 OPTN/SRTR Annual Report 1997-2006 (http://www.ustransplant.org/annual_reports/) and Summit Re estimates.**

There are a number of trends in transplant care that bear watching, including the following:

- Organ acquisition costs continue to increase. The 2007–2008 cost growth ranges from less than 2 percent to more than 31 percent, depending on the organ (Source: Milliman estimates).
- There's been an increase in allogeneic bone marrow transplants, as well as an increase in cord blood and double cord blood transplants, especially for adults. Cord blood is a promising source of stem cells for a hematopoietic stem cell transplant (cells that form the various types of blood in immune systems). The use of bone marrow transplants for immunological diseases is now driving a portion of this increase.
- The "Organ Donation Breakthrough Collaborative," established in 2003, is a national initiative to increase the number of transplants in the United States by increasing donor awareness and increasing the number of viable organs from each donor.
- VADs are devices that are surgically implanted to mechanically assist the heart in pumping blood throughout the body. The use of VADs as bridges to transplant continues to increase, as patient survival rates increase continually with their use. Former Vice President Dick Cheney, who has suffered five heart attacks, had a VAD implanted in July. Studies have shown patients receiving VADs have three times the survival rate of patients receiving medical treatment prior to transplant (Source: United Resources Network LVAD Position Paper, August 2006, authored by K. Singh)
- There's a continued growing demand for liver/kidney transplants due to the positive outcomes. Clinical evidence has shown that liver/kidney transplants have better outcomes than liver transplants alone (Source: Eason, JD, et al. Proceedings of consensus conference on simultaneous liver/kidney transplantation (SLK). American Journal of Transplantation 2008; 8:2243-2251).
- A recent breakthrough in kidney transplantation, called kidney-paired donation, matches one incompatible donor/recipient pair to another pair with a complementary incompatibility, so that the donor of the first pair gives to the recipient of the second and vice versa. This procedure adds approximately




Source: Munich Re America HealthCare estimates

$25,000 to the average cost of a kidney transplant. In December 2009, doctors in Washington performed a 26-hour "kidney swap" involving 13 kidney transplants.

- Another technique to improve transplant efficiency is the desensitization of highly sensitized recipients. Panel-reactive antibodies are preformed antibodies against human leukocyte antigens. They develop in patients who have been exposed to human leukocyte antigens from blood products, pregnancy, and prior transplantation. Desensitization protocols and donor exchange programs are proving effective. The early transplantation of highly sensitized patients can save significantly in expenses over the lifetime of a patient. In most instances, the organ transplanted survival rate is 5 percent to 10 percent less than the patient survival rate (i.e., occasionally an organ fails and retransplantation is an option).

## CLAIMS BY DIAGNOSIS AND MEMBER TYPE

Commercial member catastrophic claims are generally related to premature infants, circulatory diseases, traumas, such as motor vehicle accidents, and cancer. Cancers, circulatory disorders, and infectious diseases typically represent a large share of the moderate-sized catastrophic claims but decline in frequency at higher deductibles. The prevalence of infant neonatal claims increases at higher retentions, given the potential for such claims to be complex, intensive, and of long duration (i.e., truly catastrophic). Transplant claims similarly become more prevalent at higher retentions. Certain rare conditions, such as hemophilia or pancreatitis, typically produce very large claims as well.

Medicare Advantage member catastrophic claims are dominated by circulatory, digestive and respiratory diseases. These constitute nearly 50 percent of all claims and there are no premature infants or congenital anomalies at this point in life. The good news is there are fewer injuries.

The population receiving medical benefits assistance under programs linked to Medicaid's Aid to Families with Dependent Children and Temporary Assistance for Need Families eligibility is dominated by women of childbearing age, with premature infants and congenital anomalies representing the majority of catastrophic claims. Those receiving Medicaid's Supplemental Security Income have the highest concentration of catastrophic claims for transplants, with cancer a close second.

## CLAIM ACTIVITY AND COVERAGE TRENDS

Claim activity in excess of $1 million dollars shows that catastrophic claims continue to increase in frequency and severity due to our health care system's high

CONTINUED ON **PAGE 24**

costs and ever-advancing technology. When both frequency and severity are increasing significantly, medical excess costs are likely to increase geometrically.

Given rapidly escalating costs, reinsurers are always interested in fixed-fee arrangements wherever and whenever possible (e.g., diagnosis-related-group or per diem payment features without outlier provisions). Cedants continue to emphasize predictive modeling, early detection, and intervention programs and care management initiatives to control costs.

The demand for health reinsurance is expected to rise as direct writers look to relieve pressure on their capital as a result of the current financial crisis. In addition, health care reform presents new uncertainties and risks, and catastrophic claims are rising, as documented above.

As claims continue to escalate, there is additional focus on claim mitigation techniques, such as aggregating excess coverage and lasering.

The aggregating excess coverage provides that claims exceeding the selected per member specific deductible (i.e., retention level), for one or more eligible claimants, are subject to an additional self-insured aggregate claim amount. Once that aggregate claim amount is exceeded, all further claims in excess of the per member specific deductible(s) are reimbursed.

A "laser" is most commonly an increased per member specific deductible (i.e., retention level). For example, if the typical retention level for the group is $50,000 per member, a high cost claimant with known, ongoing claims may have a lasered deductible of $250,000. Whereas, claims for most individuals in excess of $50,000 would be covered, this member must have claims exceeding $250,000 before reinsurance coverage begins.

On rare occasions, coverage for a member may be excluded entirely from the reinsurance arrangement. This may seem unfair on its surface. However, the purpose of insurance/reinsurance is still to focus on unknown, unpredictable risks rather than known, existing risks. In addition, why add a reinsurer's expense and profit margin to a known claim?

Candidates for lasers include large, ongoing, claims of high predictability, such as hemophilia and dialysis.

Coverage parameters associated with increasing claims are higher deductibles and annual and lifetime maximums, with some trend to no per diem limitations on claims costs—often called an average daily maximum. There are also desires for extra features to deal with continuity of coverage, such as deductible carryover, extended incurred definition for hospital confinement, multiyear rate guarantee, or experience refund features.

The results of health care reform to date demonstrate the difficulty of simultaneously addressing cost, access and quality in a politicized environment. In the meantime, health care costs, especially catastrophic claims, continue to rise because of increases in the frequency and costs of various new and existing medical treatments. More comparative effectiveness research is needed to help reduce the utilization of high cost treatments when there is no evidence of improved outcomes. ■