RISING COSTS AND FREQUENCY OF ORGAN AND TISSUE TRANSPLANTS

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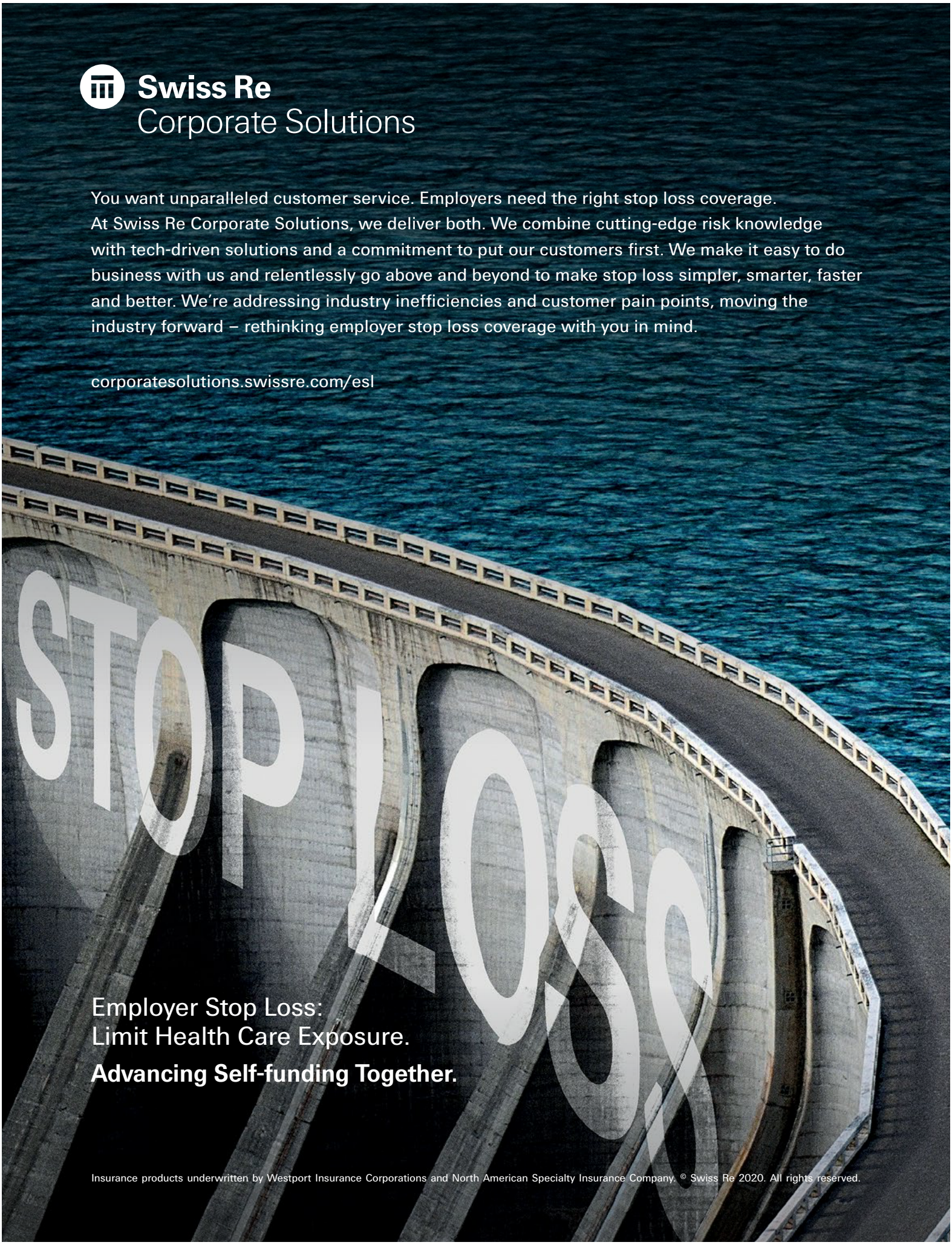
Most trends in organ and tissue transplants point to increasing costs and frequency that will challenge the stability of employer-funded healthcare plans, as claims for a single transplant often exceed $1 million.

While traditional medical stop loss insurance has helped employers manage the risk, many insurers have become more vigilant of the potential for covered individuals to require a transplant in the next year. An approach known as “lasering” singles out such potential cases for higher deductibles compared to the general covered population.

Lasering can significantly affect healthcare plan budgeting, as it accounts for the potential risk. It is critical for employers with self-funded healthcare plans to be aware of potential financing solutions, such as first-dollar organ transplant coverage, as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well as organ transplant trends. Many factors impact transplantation including regulatory, technological advances, health insurance and the availability of donor organs. The following are some of the more-recent developments around transplantation.

SOLID ORGAN TRANSPLANTS

Costs continue to increase for solid organ transplants year-over-year. Examples from Milliman's 2020 triennial report includes double lung transplants at $1.3 million and heart transplants at more than $1.6 million in average billed charges, respectively.

The U.S. is on pace to top 40,000 transplants in a single year for the first time according to the United Network for Organ Sharing (UNOS), the engine that powers the national donation and transplant system. Organ transplants from deceased donors are also up by 11% for a total of 17,821 deceased donor transplants performed in the U.S. for the first half of 2021 compared to 15,933 in the first six months of 2020.

Despite a dip in transplants early in 2020, the year marked the tenth consecutive record-breaking year for organ donation from deceased donors and the eighth in a row for deceased donor transplants. While 2021 deceased donor transplants still lag slightly compared to 2019's pre-COVID frequency, they have exceeded 2020's frequency. The return to expected transplant frequency and trend to pre-COVID-19 levels seems to indicate the success of providing these lifesaving procedures.

COVID-19 VIRUS AND LUNG TRANSPLANTS

COVID-19 has now infected nearly 33 million people in the U.S. with reports that up to 80%, including many who were asymptomatic may suffer lung injury. The residual effects of the "honeycombing" or fibrosing of lung tissue could significantly increase the need for lung transplantation due to COVID-19.

Since the first U.S. lung transplant, due to COVID-19, performed at Chicago's Northwestern Memorial Hospital in June 2020, 134 lung transplants have been reported with COVID-19 through May 2021.

Among them, 82 patients have developed Acute Respiratory Distress Syndrome (ARDS), 48 developed pulmonary fibrosis, and four had unspecified lung failure.

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Moreover, one heart-lung transplant was performed for COVID-19-related pulmonary fibrosis and heart failure.

Based on the residual damage to lungs in people that have been infected with COVID-19, it would seem this could be a chronic disease that could impact lung transplant frequency for possibly years to come.

DONOR HEARTS OF ILLICIT DRUG USERS

Recent findings could support increased availability of donor hearts through greater acceptance of organs from deceased illicit drug users. According to studies published by the American Heart Association, survival rates of heart transplant recipients from donors who had died due to a drug overdose or who used illicit drugs had no effect on recipients.

In one study covering January 2007 to 2017 and 23,000 adult heart recipients, researchers identified the donors had used opioids, cocaine, methamphetamine, alcohol, marijuana, barbiturates, amphetamines, phencyclidine, and others.

The study found comparable survival outcomes between recipients of illicit drug donor hearts versus non-illicit drug use donor hearts. The second study was focused on hepatitis-c donor hearts with similar results. With the advent of new, direct-acting antiviral medications, hepatitis-C is more manageable in the recipient.

BONE MARROW/STEM CELL TRANSPLANT COSTS

Milliman's 2020 triennial report shows allogeneic bone marrow transplants with an average estimated billed charge of over $1 million and autologous bone marrow transplants at nearly $500,000 per procedure.

The number of bone marrow and stem cell transplants continues to increase in the 4% range annually, according to the Center for International Blood & Marrow Transplant Research (CIBMTR), which tracks transplants performed worldwide and in the U.S. Persistence Market Research reported in 2019 that the global bone marrow transplant market is expected to exceed $12 billion by the end of 2028.

The growth is expected to be at a CAGR (Compound Annual Growth Rate) of 5.45% for the forecast between 2018 and 2026. North America will continue to lead the growth, followed by Europe. Together, the two will account for over 80% of global demand. The projection reflects the rising frequency of using bone marrow transplants to treat certain cancers. Between 2016 and 2020 (estimated), the combined number of autologous and allogeneic transplants performed in the U.S. increased 11%.

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POSSIBLE SOLUTION

The proliferation of lasers for organ transplants has increased the relevance of fully insured group organ and tissue transplant policies for self-funded health plans. These policies give self-funded health plans the ability to carve out transplant risk in response to lasers through a predictable per employee per month (PEPM) premium.

This budget stabilization approach to funding transplant risk, coupled with the fact that most stop loss carriers discount premium when an organ transplant policy exists, makes this approach to managing transplant risk a valuable tool for self-funded health plans.

CASE STUDY

This illustration below demonstrates the potential financial benefit of carving out transplant risk.

Without organ transplant insurance	With organ transplant insurance
An employer of 209 people has stop loss coverage with a $100,000 deductible plus a potential liver transplant lasered at $800,000. The employer pays $439,000 in premium, and the plan's internal budget for the laser is $318.00 PEPM premium.	If the same employer adds organ transplant coverage with no deductible, they pay $33,000 in premium, but also earn a 4.5% discount on the stop loss premium ($19,755). This means the net extra cost of the organ transplant coverage is only $13,245, or the equivalent of $5.28 PEPM premium.

When comparing group transplant insurance policies, the plan sponsor should consider the following in their purchasing decision:

- Compare coverages
  - first dollar or deductible per transplant claimant
  - claims payment direct to providers or reimbursement to policyholder for paid claims
  - lifetime maximums, travel/lodging/meals reimbursement, covered transplant services
- Does the policy include transplant medical management services?
  - Medical Director/Reviewer, Case Management and Utilization Review Nurses registered or licensed in states where required
  - Organizational URAC accreditation and/or registered as a UR Agent in states where required


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- Will the transplant carrier cover transplant claims when pre-authorization or pre-notification did not occur, including transplantation when notified after the fact?

Price is a considerable factor in the purchasing decision. However, reviewing these considerations prior to purchase will help ensure the plan sponsor receives the best value from their organ transplant policy and that members have a supportive customer service experience in the event they need the benefit. Plan sponsors should also be confident that the carrier has the expert knowledge of the latest developments in organ transplants.

CLOSING THOUGHTS

Human organ and tissue transplantation will continue to evolve. While new therapies such as CAR T cell, immune and genetic therapies may eventually replace or augment bone marrow transplant as the treatment of choice, certain diseases may continue to be best treated with bone marrow transplants.

Solid organ transplantation will continue to evolve with continued research, the use of rehabilitated marginal donor solid organs, development in xenotransplant, mechanical and hybrid devices. In these cases, transplantation will continue into the foreseeable future increasing in cost and frequency. ■

John Richert, RN BSN MSM, Vice President, Lead Underwriter, QBE, has 30 years of experience in developing and managing organ transplant insurance, including medical management, network development, claims and underwriting. John can be contacted for more information about QBE's solution for Organ Transplantation.