

## ORGAN TRANSPLANT TRENDS CONTINUE TO CHALLENGE SOLVENCY OF COMPANIES' SELF-INSURED HEALTH PLANS

As frequency and costs continue to grow, more and more organizations are turning to organ transplant insurance.

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### FREQUENCY AND COST TRENDS

According to the United Network for Organ Sharing (UNOS), a record-breaking number of 39,719 solid organ transplants were performed in the United States in 2019 -- a 9% increase from 2018 and the ninth year in a row a record has been set.

Bone marrow and stem cell transplants performed worldwide and in the United States are tracked by the Center for International Blood & Marrow Transplant Research (CIBMTR). CIBMTR reports that the number of transplants continues to increase in the 4% range annually.

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 3.6% for the forecast between 2018 and 2028. North America will continue to lead the growth, followed by Europe.

Together, the two will account for over 80% of global demand. It 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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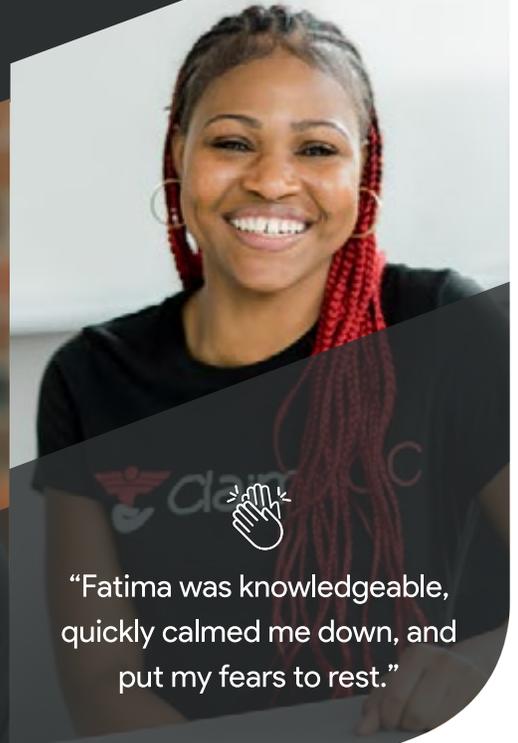
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Costs also continue to increase for transplants year-over-year. Examples from Milliman's 2020 triennial report show allogeneic bone marrow transplants with an average estimated billed charge of over \$1 million, double lung transplants at \$1.3 million and heart transplants at \$1.6 million.

With other health care costs already increasing across the board, the need for employer groups to budget for one or more potential transplants at upwards of \$1 million per transplant adds to the health plan's burden.

This is particularly difficult for small to medium size employer group health plans. If one or more transplants occurred in a single year, a company's self-funded health plan and even the company itself could face a severe financial burden if no method or risk transfer was available.

## POSSIBLE SOLUTION

Historically, stop loss insurance provided a solution to mitigate the potentially catastrophic cost of organ transplants, as well as other high-cost medical events. But as the cost and frequency of organ transplants have risen, stop loss carriers are more often applying a higher specific deductible ("laser") to known transplant potentials.

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

Without organ transplant insurance:

A stop loss policyholder of 209 employees with a \$439,000 premium, a \$100,000 deductible, plus a potential liver transplant lasered at \$800,000. The plan's internal budget for the laser is **\$318.00 PEPM**.

With organ transplant insurance:

An organ transplant policyholder of 209 employees with a \$33,000 premium, a \$100,000 stop loss deductible, plus a potential liver transplant. The stop loss carrier provides a (4.5%) discount, (\$19,755) for having an organ transplant policy. The cost of organ transplant insurance is **\$5.28 PEPM**.

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

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

- Compare the coverages for:
  - first dollar or deductible per transplant claimant
  - claims payment direct to providers or reimbursement to policyholder for paid claims
  - lifetimes maximums, travel/lodging/meals reimbursement, covered transplant services



- Does the policy include transplant medical management service?
  - 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
  
- 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 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 expertise with and knowledge of the latest developments in organ transplants.

### RECENT TRENDS IMPACTING TRANSPLANTATION

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.

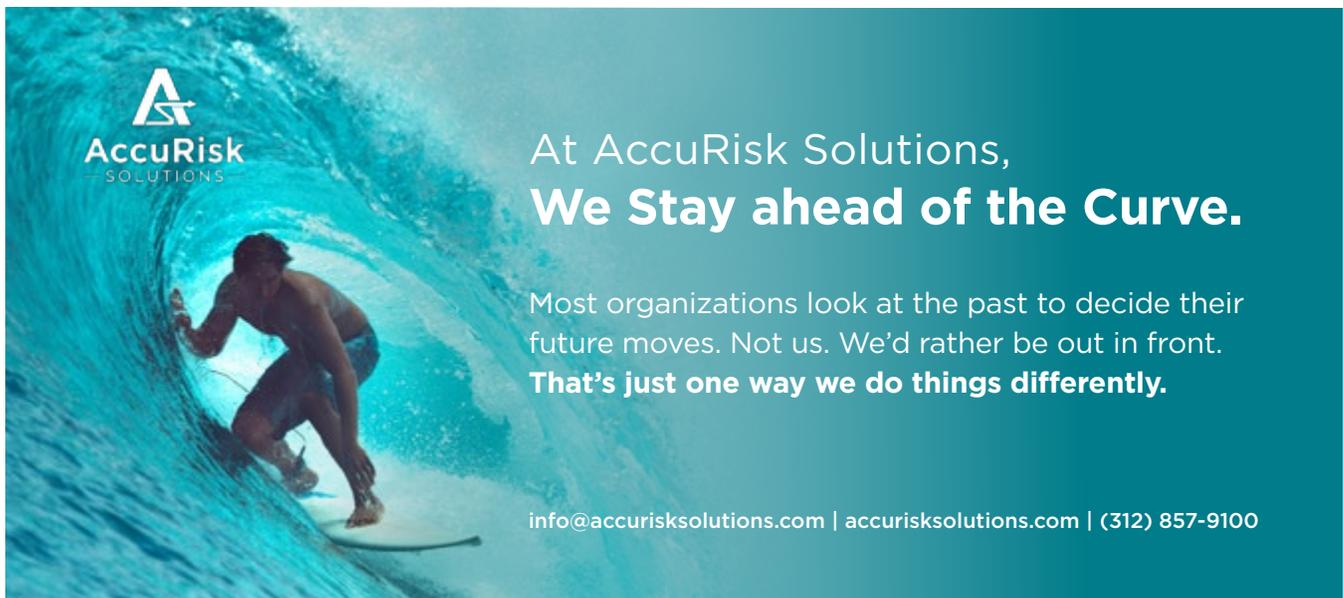
### COVID-19

Once the pandemic became more widespread, according to reporting by The Lancet, including statistics from the United Network For Organ Sharing, deceased donor solid organ transplantation took a sharp dip in frequency for March and April 2020.

As hospitals and more specifically transplant programs put safety measures into place, deceased donor organ transplantation frequency began to return to expected numbers. Living donor solid organ transplantation continues to track less than in 2019.

This is likely due to the virus, local/regional protocols and the hesitancy of potential living donors in the current environment. Bone marrow and stem cell transplants did not take the similar dip and remain at expected frequency levels.

There have been several successful lung transplants performed in Wuhan,

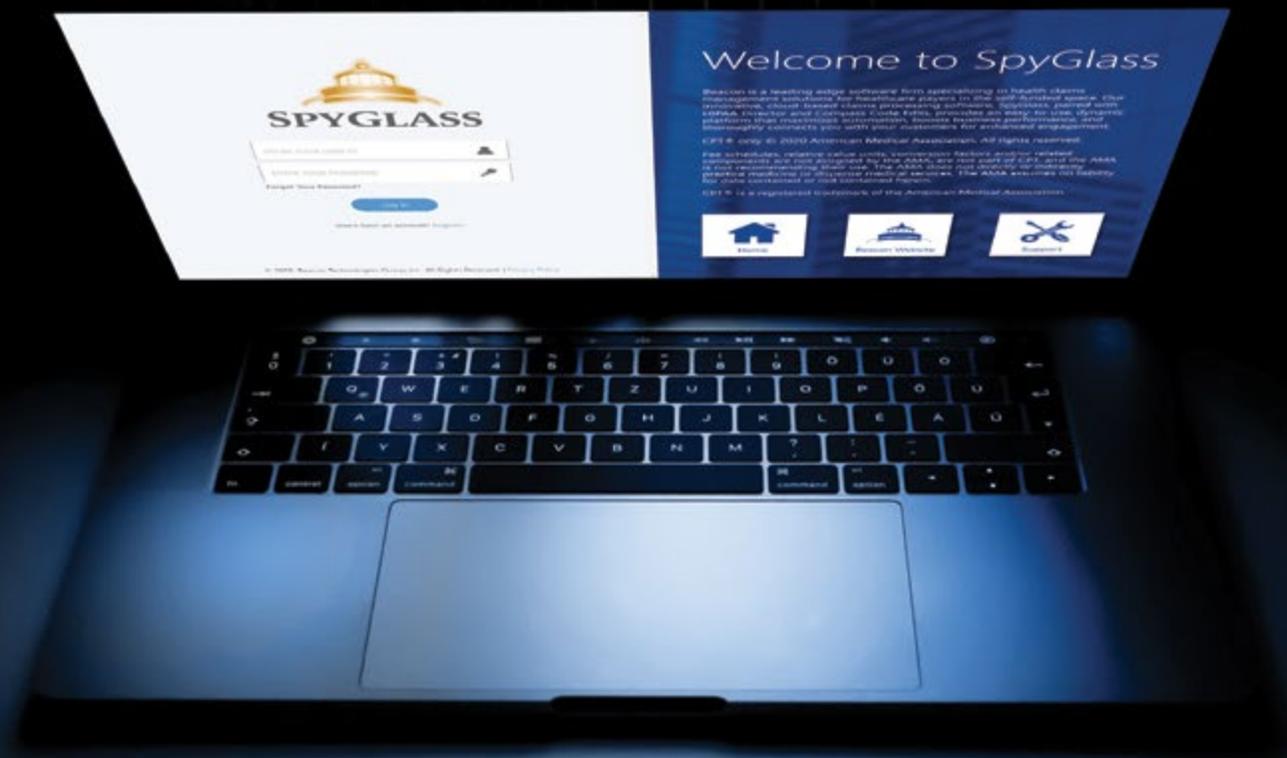


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China, the epicentre of the outbreak, on patients whose lungs were devastated by the virus. There was also a U.S. citizen who had a successful lung transplant due to the damage done by the virus.

It's difficult to determine what long-term impacts the virus will have on organ function, particularly on the lungs. This will be a potential situation to monitor as the virus continues to unfold.

## OPIOID EPIDEMIC IMPACT ON TRANSPLANTATION

Of the 70,000 drug-related deaths in the U.S. in 2017, 68% were due to opioid overdose. Deaths from the opioid crisis have increased the availability of donor organs with hearts and lungs currently being used by transplant programs.

A study published in the Annals of Thoracic Surgery showed that opioid hearts accounted for 1.2% of transplants in 2000 and 10.8% by 2017. Opioid lungs accounted for 2% of transplants between 2000-2007 and 7% between 2010-2017. The studies also noted there were equal outcomes for recipients of opioid hearts and lungs as those receiving non-opioid organs. Over time, it is possible that other opioid organs may be utilized.

## USE OF NORMOTHERMIC MACHINE PERFUSION

Normothermic Machine Perfusion (NMP) is a technology to preserve and/or enhance the viability of a solid organ for transplantation. Compared to the long-used organ preservation technique of static cold storage between organ retrieval and transplantation, NMP reduces ischemic injury, risk of organ dysfunction and other post-transplant complications in recipients.

NMP holds promise for improved preservation, better assessment and reconditioning of organs before transplants. NMP will help expand the donor pool by allowing the use of organs that once would have been declined for use.

NMP for donor lungs increased from 1.7% in 2015 to 6.3% by 2019; for livers, the increase was from 0.1% in 2016 to 1.4% in 2018. NMP for hearts has fluctuated from 1.5% in 2016 to just less than 1% in 2018. The added cost to organ procurement for the use of NMP could be at least \$100,000.

## 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 and 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, has 30 years of experience in developing and managing organ transplant insurance, including medical management, network development, claims and underwriting. John can be contacted at [john.richert@us.qbe.com](mailto:john.richert@us.qbe.com) for more information about QBE's solution for Organ Transplant or go to <https://www.qbe.com/us/specialty/accident-health/products/organ-transplant>.

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