



The Heart of the Matter

By Jing Lang

“Pass the rib spreader.” A “Grey’s Anatomy” scene I recently stumbled upon has new meaning for me.

After 10 years of binge-watching, for me “Grey’s” can no longer be simply a romantic comedy full of medical mumbo jumbo (EKGs? CT scans? coronary artery bypass grafts?). When Preston Burke, the cardiothoracic surgeon, made this request during an open-heart surgery, I froze in awe. Now I knew exactly what that meant.

In December 2019, my dad underwent a coronary artery bypass graft (CABG) surgery, following a heart attack. So much plaque clogging his arteries and blocking his blood flow meant that stents were no longer viable options. One of his arteries was fully clogged, another was over 90 percent. Two hours before the surgery we learned that some smaller branches were blocked as well. He required a quadruple bypass.

Having no idea how a surgery like this works, I was open to all input. My uncle, who spent his entire career in a hospital, informed us my dad’s heart would need to be removed from his chest for this surgery and then put back. He seemed really confident, and the fact that he did spend his entire career in a hospital somehow gave credibility to his statement. But, while I am not a doctor, that didn’t sound right.

Taking someone’s heart out just seems to be a much more invasive thing than repairing the heart in place. My uncle has a track record of being very confident and very wrong at the same time. So, although I respect him as an elder, I’ve also learned not to take what he says at face value. After all, as a pharmacist for internal medicine, cardiovascular diseases are not remotely his specialty. I’m in awe of someone who can speak so confidently about topics he knows little about.



Unconvinced by my uncle, I decided to understand how the surgery really works. My dad is a curious person. He also wanted to know the steps involved. I think that if he could, he would watch his own surgery. My mom, on the other hand, covered her ears and went “la-la-la” when I was about to share my findings.

There are two types of CABG surgeries (pronounced “cabbage”): on-pump and off-pump. My dad was about to receive an “on-pump” CABG, where his heart would be stopped in full by a heart-lung bypass machine while being operated on. This surgery has been performed around the world since 1960. In contrast, the “off-pump” surgery does not use a heart-lung bypass machine and the heart remains pulsing while being operated on, hence its other name: “beating heart” surgery. It’s a relatively newer procedure (first done in the early 1990s) and was not an option offered to us.

The main steps of an on-pump CABG are:

1. Prepare the arteries or veins that will be used as bypass grafts. These can be taken from the leg (saphenous vein), the arm (radial artery) or inside the chest (internal mammary artery).
2. Make a long incision in the center of the chest, directly above the breast bone (sternum).

3. Saw down the breast bone in half and hold it open to allow access to the heart and coronary arteries (this is where Dr. Burke's rib spreader comes in).
4. Install a heart-lung bypass machine that temporarily allows the heart to stop beating while it is being operated on.
5. Take an artery or vein from the first step and sew it on right below the blocked segment of the coronary artery and attach the other end to the aorta. This "bypass" redirects the blood flow around the blockage. (My dad needed four of these.)
6. Once the grafts are in place, turn off the pump to allow the heart to beat and blood flow to return to normal.
7. Use metal wires to hold the breast bones back together (since they won't grow back. I bet he can't wait to pass through airport security!)
8. Suture the chest incision back together.

This is crazy! The idea of sawing someone's chest and manually stopping the heart sounds extreme. While I managed to keep calm while I explained the procedure to my dad, I was mortified by the possibility he wouldn't survive the surgery. After all, he has smoked nearly two packs a day for 35 years and has a congenital heart defect. The likelihood that his heart and lungs wouldn't restart after getting off the pump seemed very real to me.

What upset me even more is what he has done to his body is self-imposed. My dad had roughly 400,000 cigarettes on his resume. (It's the times and the environment, he says.) He also made poor food choices—I didn't realize how badly he ate until I was helping him fill out a pre-surgery questionnaire. All he ate was meat and refined carbohydrates (white rice, white flour). No fruit. No vegetables. No whole grains. Nada. It's no wonder he also suffers from high cholesterol, high blood pressure and high blood glucose, all key factors leading to coronary artery disease.

Underlying all this is the immense guilt that I had from having little influence on his dietary choices because I live so far away. The doctor told us that based on the CT, it looks like my dad's arteries have been clogged for years and some have already calcified. Perhaps it's him playing tennis three times a week for the last 20 years and daily consumption of 3-4 liters of Chinese green tea that saved him.

My dad's ordeal is my second intimate contact with heart diseases in 2019. When I joined iptiQ in March, I helped build a critical illness (CI) product—a health insurance product that pays a

lump-sum benefit upon diagnosis of certain diseases and conditions. Among the conditions covered are stroke, heart attack and coronary artery bypass surgery—all categorically cardiovascular diseases which claimed over 850,000 lives in 2017, about one in three deaths in the U.S. Each year, cardiovascular diseases claim more lives than all forms of cancer combined.¹

As the product manager, I shepherded this product through the product development process, bringing together pricing actuaries, underwriters, compliance, legal, claims, marketing, distribution partners and third-party vendors to ensure we built a product that customers want, distribution partners love to sell, and all within the risk tolerance of iptiQ and Swiss Re.

As with any insurance product (particularly health insurance), getting underwriting right is crucial. Underwriting is about admitting risk. If the bar is set too high, then too few people are given coverage; good for future claim experience but bad for per policy acquisition expenses, and you are not making friends among agents (higher decline rate for their clients and less commission). If set too loosely, then agents are happy and per policy acquisition expenses are OK, but you may have adverse experience later since the population admitted are in worse health than desired. Although for a guaranteed renewable product like this, we (the carrier) have the right to increase the premium if the future experience is expected to deteriorate. It's not really desirable, as increasing the premium would drive healthy lives out (since they can get cheaper coverage elsewhere), and the carrier ends up with a pool of insured in poorer health.

The underwriting process for cardiovascular diseases in particular is meant to screen out those who are considered high risk. If you already are taking medication for chest pain or high blood pressure or diabetes, it's likely you won't qualify for the insurance policy, because you already exhibit early symptoms of heart disease. An analogy would be buying home insurance that will pay if your house burns down. You buy the insurance when your house is fine. But if your stove is already on fire, then no one is going to insure that because the whole house coming down is almost inevitable.

According to the Academy of Life Underwriting, there are seven major cardiovascular risk factors: age, gender, family history, smoking, hyperlipidemia (high cholesterol), hypertension (high blood pressure) and diabetes mellitus. While the first three risk factors cannot be changed (aka "unmodifiable"), the latter four can via drastic lifestyle changes (aka "modifiable"). Physical activity is a huge part of that too. Although I don't believe my dad's tennis playing fully offset his smoking (as he claims!), I do think it was a huge plus to his overall health.

What current underwriting does not consider, however, is a person's ability to change their lifestyle after initial underwriting. Numerous studies demonstrate that a whole-food, plant-based diet can retard and even reverse coronary heart disease.^{2,3} People

considered high risk for heart attack who followed a plant-based diet for six weeks reported a significant drop to both their LDL (bad cholesterol) and blood pressure. Many were able to get off their medication altogether.

So, what should you do? If you want to mitigate the financial risk of getting diagnosed with a critical illness, work with your agent or do your own research (I recommend both) to find the insurance product most appropriate for you. Buy it while you are qualified, make it part of your financial plan, then move on with your life. But just having the insurance will not improve your health in any way. If you want real change, to actually improve your health, you have to make permanent lifestyle changes. No one else can do it for you.

A Chinese allegory goes like this. There once was a family of three brothers. All doctors. The youngest is well-known throughout the country as he performs life-saving surgeries. The middle one is also famous in the nearby villages: he helps people who are sick but do not yet require surgeries. And the oldest brother is not known at all. Someone asked the youngest brother, “how come your oldest brother is not well-known? Is he a bad doctor?” The youngest brother replied, “My oldest brother is actually the most skilled doctor of all, he helps people to not get sick in the first place.”

It’s sad but true that surgeries are often perceived to have more life-saving value than simple, daily dietary changes. It’s also much easier to measure surgeries performed than surgeries averted. The proverb, “what’s measured gets managed” has wide application in business, but when used alone, can also mislead and get people—health care professionals and the general public alike—to focus on the symptoms and not the root cause.

People often don’t recognize they need help until something is clearly wrong. That certainly was the case with my dad. The CT scans showed his arteries had been clogged for years, but he didn’t think he was unwell until the heart attack. In his mind, playing tennis three times a week more than offset his smoking habits, and he didn’t even consider his dietary choices to be poor. We are actually lucky that my dad survived the heart attack and lived to tell his tale. Now thinking back, my dad lost two of his teammates on the tennis court; both were sudden and left their families devastated.

It is incredible how many people came to me with their family stories after they heard about my dad. Coronary artery disease has affected so many families. Stents have been put in, chests have been opened and reopened. Some recognized the detrimental impact their lifestyle had on their health and overhauled their life altogether—quit smoking, adopted a plant-based diet—while others carried on as is. Habits formed over decades are very difficult to change overnight. But ultimately, the decision to change (or not change) lies with the individual, regardless of the best intent from his family.

The first time I heard the term healthspan was in the words of Dr. Peter Attia who focuses his practice on the science on longevity:

“...longevity is a function of lifespan and healthspan. Lifespan is simply the number of years you live. It’s driven by how long one can delay the onset of chronic disease and accidental death. Healthspan ... is about preserving three elements of life for as long as possible:

- *Cognitive—executive function, processing speed and memory.*
- *Physical—stability, flexibility, mobility, strength, muscle mass, bone density, aerobic function, functional movement, freedom from pain and sexual function.*
- *Emotional—mindfulness, social support, sense of purpose, fulfillment and relationality.”*

I love how he compared and contrasted the two concepts. Although we have measured medical advancement by life expectancy (lifespan) previously, it’s time for us to consider healthspan in parallel. Yes, I care about how long my dad lives, but I care just as much about the quality of his life.

Thomas Edison said in 1903, “The doctor of the future will no longer treat the human frame with drugs, but rather will cure, and prevent disease with nutrition.” Fast forward 117 years; while some doctors advocate for nutrition, our health care system as a whole does not (yet). Until that happens, the initiative lies with us. We need to take personal responsibility to improve the quality of our lives and of those we love.

For my dad, if changing to a whole-food, plant-based diet can reverse his coronary heart disease and extend his healthspan, then sign me up. To convince him this works, I have to do it myself first and pull him along with me. The heart of the matter is, as David Sinclair put it, “We are in this together and no one gets out alive. With our time allotted, let’s all strive to help humanity be the best it can be.” ■



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ENDNOTES

- 1 2020 Heart Disease and Stroke Statistical Update Fact Sheet At-a-Glance, retrieved 2 Feb 2020, https://professional.heart.org/idc/groups/ahamh-public/@wcm/@sop/@smd/documents/downloadable/ucm_505473.pdf
- 2 Intensive Lifestyle Changes for Reversal of Coronary Heart Disease, <https://www.ornish.com/wp-content/uploads/Intensive-lifestyle-changes-for-reversal-of-coronary-heart-disease1.pdf>, retrieved Feb 9 2020
- 3 The Nutritional Reversal of Cardiovascular Disease - Fact or Fiction? Three Case Reports/Caldwell Esselstyn and Mladen Golubic/Exp Clin Cardiol Vol 20 Issue7 pages 1901-1908 / 2014 www.dresselstyn.com/Esselstyn_Three-case-reports_Exp-Clin-Cardiol-July-2014.pdf, retrieved Feb 8 2020