Patient eBook:

What Can Heart Valve Surgery Patients Expect?

Dignity Health.
Sequoia Hospital

I. Introduction from Adam Pick, HeartValveSurgery.com founder

Dear Patients & Caregivers,

As patients with heart valve disease can be confused about their diagnosis, treatment options, surgeon selection and outcomes, Sequoia Hospital's Heart & Vascular Institute and HeartValveSurgery.com held a live, online webinar titled, "What Can Heart Valve Surgery Patients Expect?", on Wednesday, February 26, 2014.

During this live event, Dr. Luis Castro, a leading cardiac surgeon from Sequoia Hospital, and I shared critical information from the patient perspective before, during and after heart valve surgery.

The webinar was an overwhelming success -- with over 250 patient and caregiver registrations and over 100 attendees from all over the world. During the webinar, Dr. Luis Castro shared his clinical experiences and patient advocacy efforts with our community.

For those patients and caregivers who were unable to attend this event, I prepared this eBook to help you learn more about heart valve disease and treatment.

If you have any questions, please email me at adam@heartvalvesurgery.com.

Keep on tickin!

Adam Pick
Patient, Author & HeartValveSurgery.com Founder

P.S. If you would prefer to watch the video playback of this webinar, click here.

II. Featured Webinar Speakers

The featured speakers for the webinar were:

Dr. Luis Castro
Heart Surgeon
Sequoia Hospital
Redwood City, California
(866) 330-3590
Learn more.

Adam Pick
Patient, Author & Website Founder
HeartValveSurgery.com
Los Angeles, California
(888) 725-4133
Learn more.

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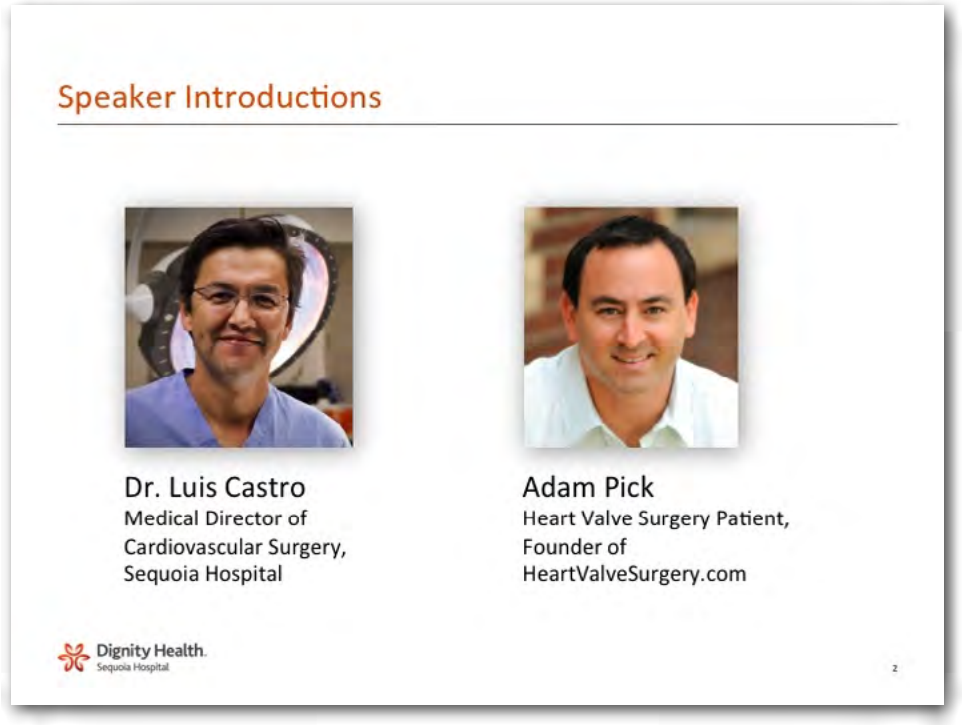
III. Written Transcript & Presentation Slides

In addition to providing you the written transcript of the "*What Can Heart Valve Surgery Patients Expect?*" webinar, we will also provide you the presentation slides shared during the online event.

Webinar Introduction

Speakers: Adam Pick



Adam Pick: Hi, everybody. My name is Adam Pick and I'd like to welcome you to the webinar titled, "What Can Heart Valve Surgery Patients Expect?" If I've yet to meet you, I'm a former patient, and I'm the founder of HeartValveSurgery.com.

The mission of HeartValveSurgery.com is to educate and empower patients with heart valve disease. This webinar, which has had over 250 registrations from patients in countries that are all over the world, is designed to support that mission. So you know, during the webinar, all participants will be in what we call "listen-only" mode. That being said, you may submit questions during the webinar. Simply post your questions in the control panel on the right side of your screen. We'll do our best to address your questions during

the “Question and Answer” section of the webinar. Lastly, at the end of the webinar, I’m going to ask you to complete a quick four-question survey about this event.

Now… I’m thrilled to introduce the featured speaker of this webinar. Dr. Luis Castro is the medical Director of Cardiovascular Surgery at Sequoia Hospital’s Heart and Vascular Institute. During his 25-year career, Dr. Castro has performed over 5,000 cardiac procedures and, most importantly for this webinar, you should know that Dr. Castro has performed over 3,000 successful valve therapies. Dr. Castro specializes in the treatment of mitral valve disease, aortic valve disorders, aortic root reconstruction, and atrial fibrillation, also known as an abnormal heartbeat.

Dr. Castro's Patient Success Stories

Speaker: Adam Pick & Dr. Luis Castro

Adam Pick: I could go on-and-on about the career of Dr. Castro and his achievements in cardiac surgery. Instead, I'll tell you that Dr. Castro is celebrated by our community and for very good reason. Since launching this website in 2006, Dr. Castro has successfully treated many patients from this website, including all of the names that you see in front of you.

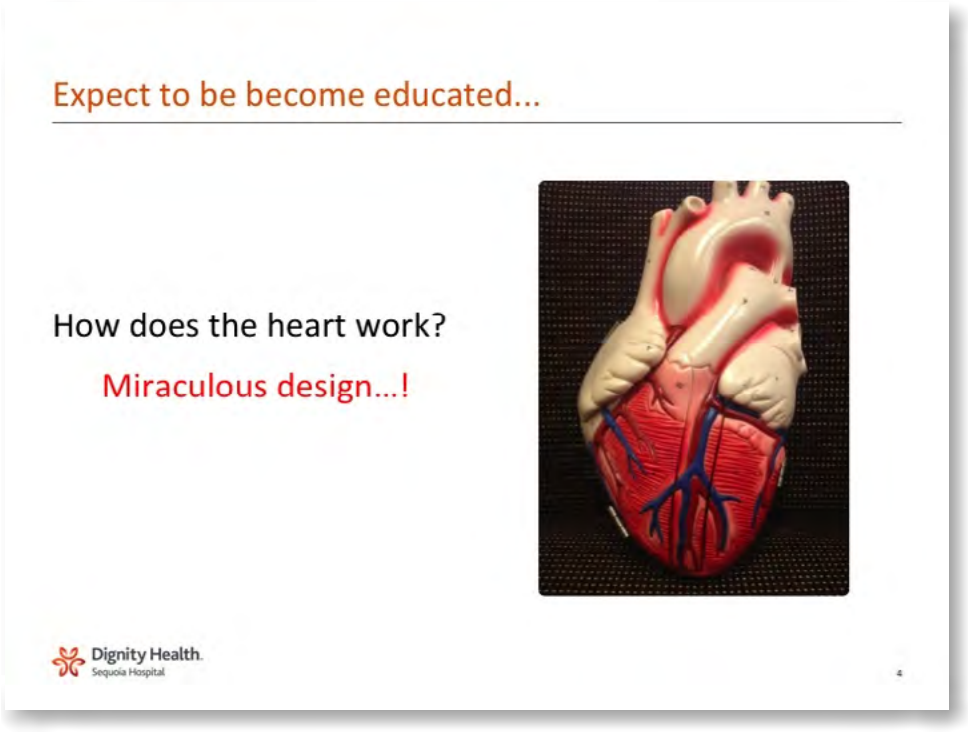
Today, Dr. Castro is one of the most recommended heart surgeons at our Surgeon Finder as he gets great surgical results and his patients truly do love him. Personally, I am humbled that Dr. Castro is taking the time away from his very busy practice at Sequoia to share his research and clinical experiences during this educational webinar. With that said, I'd like to introduce everybody on the call to Dr. Luis Castro.

Dr. Luis Castro: Thank you so much for your kind remarks, Adam. I'm going to take this opportunity to let you know what a tremendous service you do to this community of thousands of patients seeking information about heart valve surgery, sharing their own experiences before and after surgery, and being helped by what you do on this website and in your book, The Patient's Guide to Heart Valve Surgery.

I'm truly flattered and feel extremely privileged to be able to share information with all of you today through this webinar that I think and I hope you'll find valuable as you or a loved one journeys through the process of planning for an upcoming heart valve operation. I'm also looking forward to answering many of your questions that you may have following my presentation.

Understanding The Miraculous Human Heart

Speaker: Dr. Luis Castro



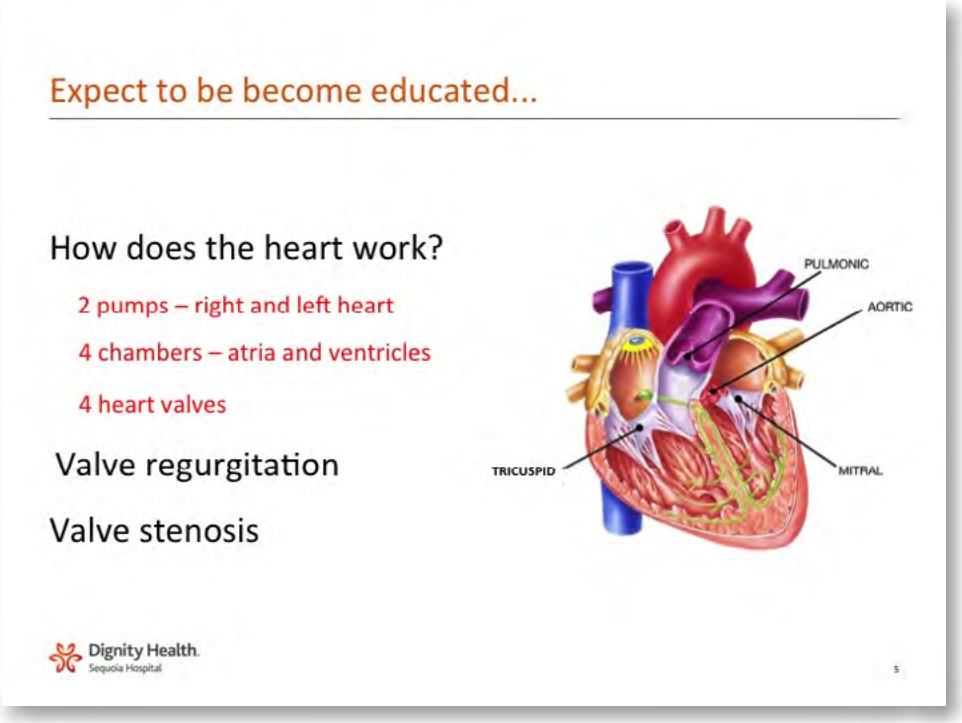
Dr. Luis Castro: The process of contemplating heart surgery and finally recovering from it is an incredible journey that takes time. It should begin long before your operation and believe it-or-not, it doesn't end after you leave the hospital. It is a process that is going to reward you the more you educate yourselves, the more questions you ask of your doctors, and the more information you seek out.

The heart truly is an amazing organ. It's one of the greatest mysteries of life for thousands of years. The heart is only just being truly understood during the latter half of this past century. The heart is life-sustaining. It's been written about in countless stories and in our poetry. Our hearts react to our emotions. We feel it race with excitement and we feel our hearts ache with disappointment. No wonder we associate the heart with love.

I believe that the most magical thing that one human being can do to another in this day and age is to stop the heart, repair its problem, and start it back up again. It's truly miraculous. It is a tremendous privilege and responsibility for me to operate on the heart.

The Anatomy of the Human Heart

Speaker: Dr. Luis Castro



Dr. Luis Castro: Let's talk about the anatomy of the heart and how the heart actually works. The heart is approximately the size of both of your fists put together side-by-side. When I explain heart function to patients and family, I use both of my fists, squeezing them at the same time to show how the heart actually works because the heart is actually two pumps; a right pump and a left pump.

As we're sitting here talking and listening to this webinar, our hearts are pumping about three to four liters of blood per minute, delivering oxygen to all of our organs and our tissues. Blood returns back to the right heart at that same rate, three or four liters. The right heart pumps blood under low pressure to the lungs because the lungs are just next door. We breathe and we fill that blood with oxygen. Blood gets delivered back to the left pump from the lungs. As I tell my patients, the left heart is the eight-cylinder engine that drives blood from head to toe, oxygen-rich, to keep us alive and healthy.

When we exert ourselves through exercise (or vigorous activity) or when we're stressed, we ask the heart to increase the amount of blood that it is pumping from 4 liters to 8 liters to 15 liters. Some athletes at peak exercise can pump greater than 30 liters a minute of blood.

The heart has four chambers. The right heart is made up of the right atrium, the filling chamber, receiving blood returned from the body and the right ventricle, the pumping chamber that directs blood into our lungs. The left heart has its upper chamber, as well, the left atrium that receives blood from the lungs, now oxygen-rich, and the left ventricle, the high-pressure pump delivering oxygen rich blood from head to toe.

Four valves are present in the heart, two on the right side and two on the left side. The valves on the right side are considered low-pressure valves because the blood pressure within that right side is much lower than the left side, so valve abnormalities on the right side -- the pulmonary and tricuspid valves -- are less common and less problematic. The left-sided heart valves, the aortic valve and the mitral valve, are high-pressure valves, so it's not surprising that there's more wear-and-tear on these valves.

Valves allow blood to be expelled forward and shut closed so that blood doesn't return in reverse back into each heart chamber inefficiently. A leaky, or regurgitant valve, is analogous to shoveling sand forward but getting half of what you're shoveling back in reverse by heavy wind. I've got to shovel a bigger load of sand and work harder to accomplish the same job. With valve regurgitation or a leaky valve, the heart may enlarge and work harder to accomplish the same amount of net forward blood flow.

Valves can also get narrowed, also known as stenotic. In that case, the heart works harder to push blood through a smaller hole. Imagine, as I tell my patients, putting a bend or a kink in a running water hose. What does that do to the flow of water? What does it do to the upstream joint where the hose is connected to the metal faucet?

Stenosis, or narrowing of a heart valve, causes obstruction to the flow of blood. All these things have their ultimate effect on the heart muscle as it begins to enlarge with either regurgitation -- or thicken with stenosis. These disorders can impact the lungs which begin to act like a sink full of blood as the left heart is obstructed and is unable to drain properly.

Symptoms of Heart Valve Disease

Speaker: Dr. Luis Castro & Adam Pick

Dr. Luis Castro: Let's talk about symptoms. In many cases, patients don't feel any symptoms which is not unusual. Typical symptoms include light-headedness, dizziness, lack of energy, or fatigue. It's very easy for somebody to attribute fatigue as "just getting older" because our brains aren't wired to warn us that we have a heart valve problem. The heart may send a signal to your brain. Then your brain has to try to figure out what's going on. It is unlike your hand which is about to touch something hot. Your brain can figure that out quickly to prevent damage to your hand.

I always like to share my story of appendicitis that I had three years ago. As my appendix sent signals to my brain that it was about to rupture, my brain registered that feeling as food poisoning because I recalled eating some cheese earlier that day. The cheese may have been stale… that's what my brain said. It took three days for me to finally end up in an operating room. I felt kind of stupid but thankfully, all went well.

Dr. Luis Castro: Some people have classic chest pressure commonly felt with either exertion or with exercise, or the feeling of being short of breath.

Then, there are more advanced symptoms. The patient may say to the doctor that they get extremely short of breath with very little exertion. They've noticed this happening over the last year. Others experience what we call edema, or swelling of the legs. Not only does the left heart get weak or work harder and cause a backup of blood in the lungs, but the right heart weakens and backs up blood into your tissues, specifically your legs. Acute congestive heart failure can happen. That's why patients end up in the emergency room because they're extremely short of breath at rest. It can be quite frightening.

Adam Pick: Dr. Castro, we're receiving several questions as you're going through the remarks. One of the questions comes in from Julie, who asks, "Is it recommended that patients have surgery even if they have no symptoms?"

Dr. Luis Castro: Great question, Julie. Symptoms definitely alert our bodies as to when something is wrong but because the connections are so poor between the heart and the brain trying to send signals up, it's not uncommon that you don't have symptoms. The

most important thing here -- once you've had a diagnosis of a heart valve problem -- is to continue with follow-up by consistent echocardiograms because even without lack of symptoms, we can watch a progression of chamber enlargement, or heart weakening that could create complications in your life and definitely signal to us, as doctors, that you need an operation whether-or-not you have symptoms.

Treating Valve Disorders with Repairs & Replacements

Speaker: Dr. Luis Castro

Dr. Luis Castro: The discussion of heart valve surgery -- the repair of mitral valves versus replacement of those valves, repair of an aortic valve under certain circumstances, and aortic valve replacement --- is beyond the scope of this discussion. But, I'd be happy to entertain the questions that you may have personally.

What you need to know is that surgical experience matters a whole lot. Just because Dr. X says that your valve cannot be repaired doesn't mean that another doctor -- with more experience -- can safely repair your valve.

If you do require valve replacement, the basic category of valves include mechanical valves, some people call them artificial valves, and tissue valves or bio-prosthetic valves.

Mechanical valves are metal valves that can last, in most people, an entire lifetime. But, mechanical valves do require life-long blood thinning or anti-coagulation medications like Coumadin. Coumadin carries a small but real risk of experiencing major hemorrhage during your lifetime.

On the other hand, tissue, or bio-prosthetic valves, have a reliable lifespan of approximately 15 years and will probably require re-operation if you are a younger patient, meaning you may outlive the life of a tissue valve. You're going to encounter a tremendous amount of marketing that is done positioning one certain type of tissue or mechanical valve better than another type. Most of this is plain old marketing.

Basically, there are porcine or pig valves, and these actually come from pig aortic valve leaflets. Then there are bovine, or cow, pericardial heart valves. These valve aren't actually cow valves but instead they're manufactured from the heart lining, the heart sac or pericardium that surrounds the heart of a cow. The tissue is then cut into shapes to make functioning leaflets. There are even equine, or horse, pericardial valves that are being implanted and marketed in this country.

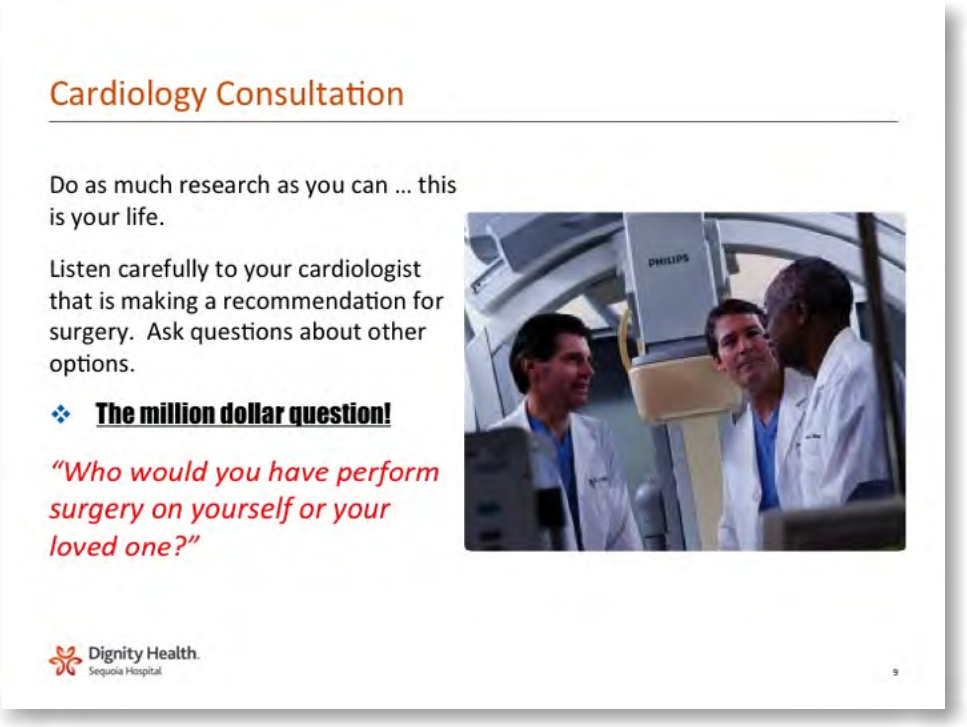
Your surgeon is going to appreciate certain devices as a particular tissue heart valve that fits his operative style. For the most part, all of these bio-prosthetic valves are excellent valves and probably equally comparable in terms of lifespan and durability. Many of you have heard of TAVR, or transcatheter aortic valve replacement. This is a valve that is rolled up in a stent and it's placed through the groin artery in your leg up into the aorta without a chest incision and then deployed inside your stenotic aortic valve. This is a very new technology. It's in its earlier or early stages or infancy stages, as I like to say. Right now, TAVR is reserved only for those extremely frail patients that are considered too high-risk for surgery. Why? Because we have no idea how long these valves are going to last. Right now, in this first generation of TAVR valves, the incidence of stroke when placing these valves is much too high -- compared to a safe operation for lower-risk patients.

In terms of valve choice, if you're 75 and older and you need a heart valve replaced, the decision is almost a no-brainer. A tissue valve will probably last you the rest of your life without the need for anti-coagulation and blood thinning. If you're 40 and you need your heart valve replaced, it becomes a more complicated decision. The risk of hemorrhage on anti-coagulation, or blood-thinning, required with a mechanical valve has to be compared to the risk of re-operation that is certainly guaranteed when you're younger if you choose a tissue heart valve. You may have to alter your lifestyle to minimize your chances of injury due to bleeding if you choose a mechanical valve. If you're absolutely terrified against the idea of a second operation, then a mechanical heart valve may be the best choice. It's not a guarantee, but 90% of patients with mechanical valves will never require a second operation.

Repairing a heart valve -- when it actually can be repaired -- in this age group adds tremendous value to your life. Ultimately, though, the valve choice is not the surgeon's choice. It is your choice!

Meeting With Your Cardiologist

Speaker: Dr. Luis Castro



Dr. Luis Castro: No one has heart surgery without a cardiologist making your diagnosis. He or she is the heart specialist that will tell you when it's time for surgery and probably will make the recommendation to you as to which surgeon should do your operation. Do as much research as you can before and after you meet with him or her. I can't overemphasize how important this is. Listen very carefully to what your cardiologist has to say and ask tough questions. Ask about other possible options, either continued medical therapy and observation, standard operations, or talk to them about what's happening in the future with the technology that's emerging.

Here's the million dollar question that I think you need to ask any physician when he or she has told you that you require surgery. I can bet you'll get an honest answer. The question is "Who would you have perform surgery on yourself or on your wife or on your son or daughter?"

Interviewing Heart Surgeons

Speaker: Dr. Luis Castro

Dr. Castro: So now you've been told you need to see a heart surgeon. Do more research. Again, this is your life. Bring your family. Allow them to sit down with you and your surgeon. They're going to have a lot of questions. Take down notes. You can even record your consultation. Many of us have little smartphones with mini-recorders on them. Use them. You'll be surprised how many times you forget little important details discussed at the time of the consultation. Understand all of your studies (e.g. echocardiograms). Hopefully you can get an opportunity to see your echocardiogram and you can get an opportunity to see your heart valve problem demonstrated to you. Be convinced that you have a heart valve problem.

This isn't the time to be shy, either. Ask very specific questions regarding surgical experience. How many years has this surgeon been in practice? How many years in this particular hospital? Do they operate at other hospitals? What are the results at the other hospitals? Who will assist? Is the hospital that you're being operated on a low volume or a high volume heart center? Who will manage and take care of you in the hospital after

the operation? Go home and follow up with even more homework and research. You'd be surprised how many people do more homework shopping for their next car or looking for the right babysitter than choosing a heart surgeon. All heart centers should be submitting their data to the Society of Thoracic Surgeons, the STS. You need to be concerned if that hospital or surgeon does not participate in this database. Ask why not. When they do, you can find results of individual hospitals in the database. You can find results through the internet and even consumer reports.

If you need to and are able to... Get a second opinion. You're going to have heart surgery. You need to feel safe. You need to feel a genuine human connection with the surgeon that will hold your life in his or her hands. You need to feel trust.

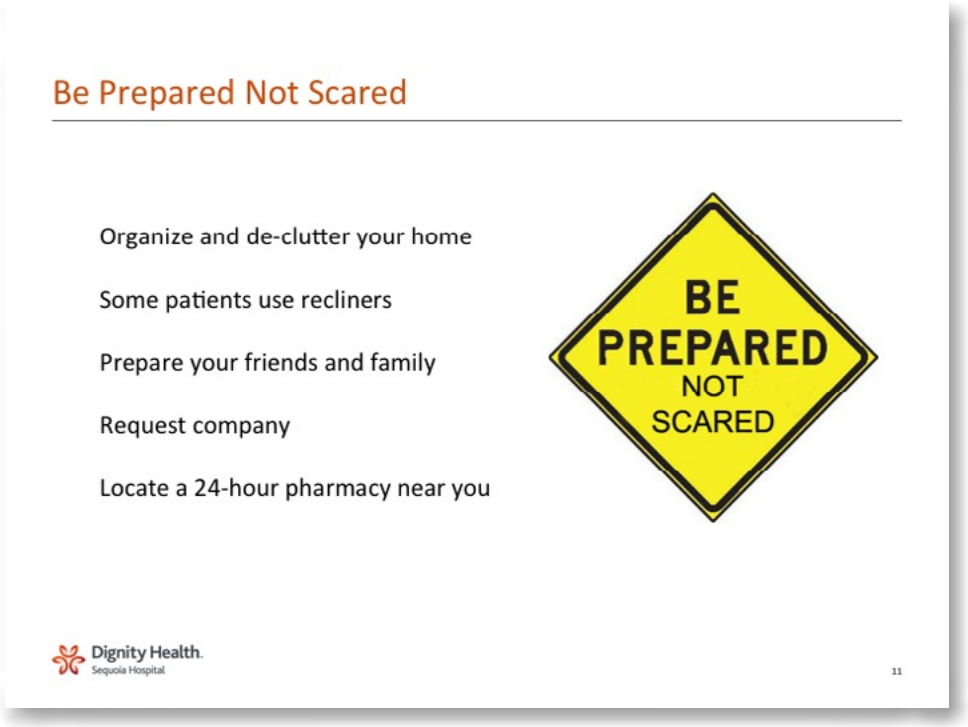
Adam Pick: I wish I had learned this information prior to my surgeon consults because there's so many great tips that you describe -- whether it's bringing your family, or taking down notes, or recording the consultation so you know exactly what was said during your meeting with the surgeon. The one thing that I would like to bring up, for all the patients on the line is... Before you even go to see your heart surgeon, you may want to write down any questions you have in advance of that discussion.

Some of those questions you can take right from this slide because I know as a patient, we may have our questions in our head but when we get inside a medical office, when we're sitting in front of a physician, it can be a very flustering experience and intimidating. You might forget what are the really important questions you want to ask. If there's one thing I could just really, really hope that the patients will do is make a list of your questions BEFORE you go to see the surgeon. That way, you won't get flustered.

Dr. Luis Castro: Absolutely, Adam. This is an interview, in many ways, and you need to know that time needs to be spent sitting down and understanding what is going to happen to you. These questions that you write down, don't feel that your taking the surgeon's valuable time. This is your valuable time. Go through each question very specifically, very deliberately. Many patients actually that I see come with lots of notes. Then, they rush through them. I say, "No, let's just go to your first question, second question," because I don't want them to feel that they skimped on something because they felt that they were being rushed. It's so important to know that this is your time. This is your family's time to really understand what is going to happen.

Be Prepared! Not Scared!

Speaker: Adam Pick and Dr. Luis Castro



Adam Pick: Dr. Castro, we received several questions before the webinar about preparing for the surgery. Given my own research and my own experience, I put together this slide that I call, "Be Prepared, Not Scared." Let's talk first about being prepared. One of the things that I experienced and I've heard other patients talk about is making sure that their home is in order for when they return from the hospital.

If you have a cluttered home, or you have obstacles in getting from your bathroom to your bedroom, take the time to clear the paths so that you can make it there by yourself as you're walking around your house. We know that some patients have experienced issues with pain after surgery -- specifically in their chest. Many patients use recliners throughout the day to make the process of getting in and out of their rest positions a little easier.

The one thing that I did before surgery... I prepared my friends and family. I spent, either in person or on the phone, 10 to 15 minutes telling them what was about to happen to me. I was very fortunate; my mom, my dad, my brother, my sister, they all rallied around

me. They spent time with me. I actually created a spreadsheet for the first two weeks after my surgery so that I wasn't going to be alone. I had people set up different times and different days where I was going to have some companionship -- so I could talk about what was going on with me and actually have some fun with my family and friends.

The final point here is if, for any reason, you need medication know where a 24-hour pharmacy is. Have the pharmacy phone number should you need to go and get some medication. These are just some ideas about "Being Prepared".

One of the big concerns patients have is about mortality. Are they going to live through the procedure? Can you maybe share a little bit about what the STS database results are telling us about the safety of heart valve surgery today?

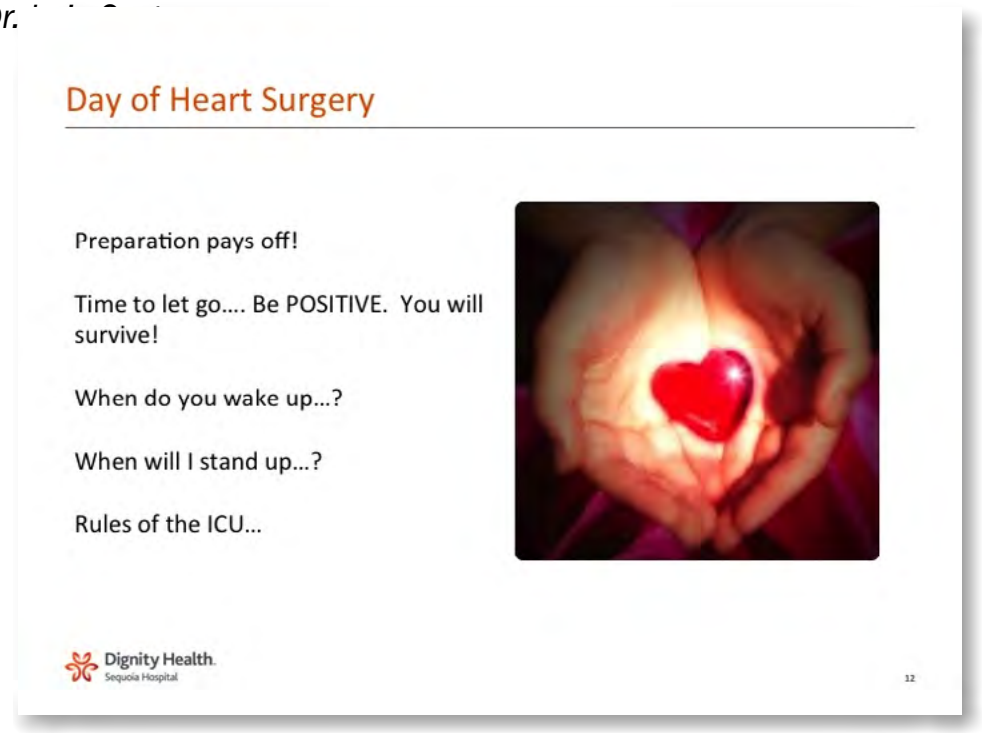
Dr. Luis Castro: Absolutely, Adam. These are great points that you've made on your slide. I truly believe that being prepared will make you more confident. Here in the San Francisco area, and in some of the bigger cities, as well, if you have apps on your smartphones, there's an app for Task Rabbit. It allows you to connect to somebody out there, a college student that's been screened, that can actually get your medications for you if you need to. I think it's fantastic to be prepared.

Another way to be prepared... I tell my patients to consider reading and doing a little more research on meditation. There are books on meditation and the process of preparing for surgery.

Addressing your question about mortality, the STS, the Society of Thoracic Surgeons, has collected data now over 10 years, going on 15 years, of data that's being collected around the country. A thousand hospitals now are participating in collecting mostly mortality data. Thankfully, and we know this by the STS, is that we've come a long way. Mortality is down to a minimum, but there are fluctuations here and there. There are going to be some hospitals where, for one reason or another, your chances of potential trouble are a little higher than another hospital's chances of trouble. A lot of that has to do with experience. The STS database serves as a dashboard for us to be able to tell where we, the cardiac centers, are compared to the benchmarks. It's important to know that when you are selecting a hospital and you're going to have heart surgery there.

The Day Of Heart Surgery

Speaker: Dr.



Dr. Luis Castro: So the day of heart surgery finally arrives and preparation pays off in dividends. The time that you put into educating yourself, into asking those questions and developing confidence in what is going to happen will pay off tremendously. This is the time, though, to just let go and remain positive.

Know that you're going to survive and like many athletes do before a big race and if you've done a little meditation, you're going to find that it's very helpful to visualize that positive experience.

Visualize going to sleep peacefully, thinking about good thoughts. Visualize a perfect operation. Visualize a successful recovery. You're going to wake up. Most of us will wake up

in the intensive care unit.

When you wake up, you'll probably be connected to a ventilator, a breathing machine... One of the worst recollections that patients report consistently to me is that they remember that breathing tube. Being hooked up to that ventilator. It can be quite scary because you can't talk. The tube is between your vocal cords. Some people have trouble coordinating their own breathing with the ventilator breathing. They feel like they're suffocating. They're not. But, it's quite uncomfortable and quite anxiety-provoking.

At our hospital, Sequoia Hospital, we've gone to removing that breathing tube while you're still very sedated because I really don't want any of our patients to remember that. I think that is traumatic. So, we remove it while you're just waking up out of your sleep.

You're going to be sitting in a chair by that evening or by the next morning. You're going to be walking the next day. It's amazing. Every ICU has its rules; they can be a little funny. Visitation rights can be limited to certain times. It's because the intensive care unit takes care of very sick patients. You're just a very temporary traveler through an intensive care unit, so you just have to be patient. Your family needs to be patient and for most of our heart patients, you're only going to spend one night in the intensive care unit.

Tips For The Hospital

Speaker: Dr. Luis Castro

Dr. Luis Castro: While in the hospital, know that you are going to be cared for. You're going to be comforted throughout your entire hospital stay. Pain, which is a big issue that many of us have before going through an operation, is certainly going to be taken care of for you following the operation. Whether you have the operation performed robotically through small incisions, or minimally invasive, or through a full sternotomy, to a certain extent, they all hurt. The pain is variable. Some people have very little discomfort after these operations. Other people have different thresholds and need more pain medication to keep them comfortable. You're going to be made to feel as pain-free as possible, and you need to report to your nurse and the staff how much pain you're in so that they can give you the appropriate medication that it takes to make you comfortable.

By the time you go home, you're going to feel a little discomfort, but it's not going to be intolerable. Your appetite is going to have returned hopefully to near normal, and you're going to be walking fairly independent. You're going to be ready to leave the hospital. If you feel that you're not ready to go home just yet, let the doctor know. There's absolutely no harm in keeping you in an extra day.

Adam Pick: Dr. Castro, one of the questions Betty asks here is specific for the women on the call. She asks, "Are there special bras for women to help them with breast support near the incision?"

Dr. Luis Castro: That's a great question, Adam. Men, we don't have that issue. Women, this can be a big issue, especially if you've had a mini-thoracotomy under the breast. There are sports bras. You can put a little extra padding there. A helpful tip that I got from one of my patients, because I always ask them how I can do better, is to bring loose-fitting clothes. Bring socks that just slide up easily. Bring a nice, big sweatshirt to go home in. Don't bring a tight turtleneck to try to get into after one of these operations. I think that's a great piece of advice.

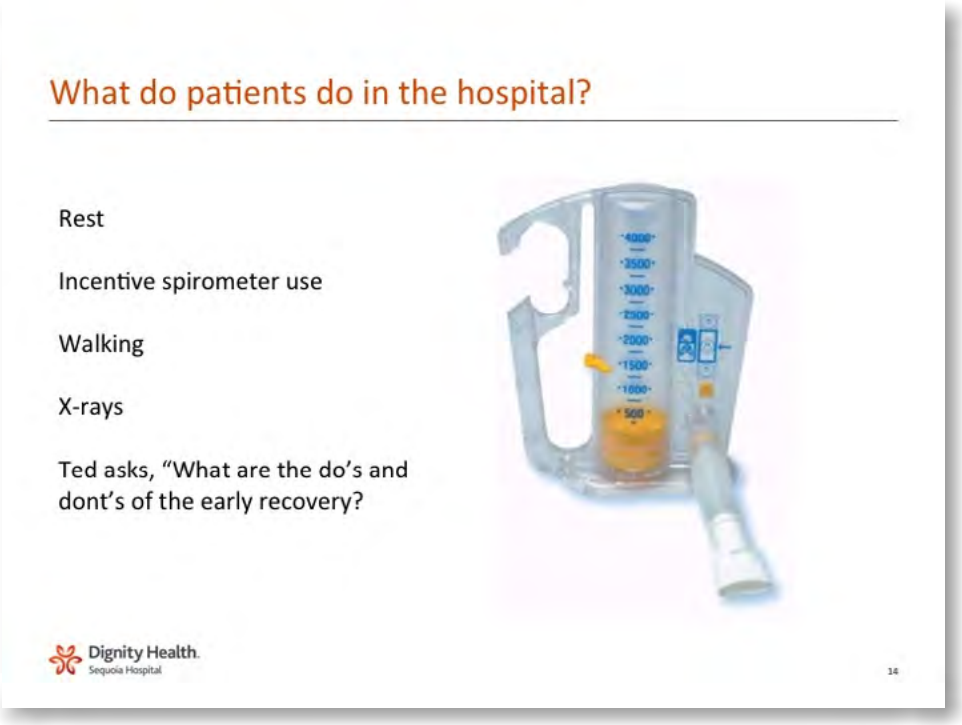
Adam Pick: There's another question that just came in from Brad, who asks, "How long are most patients in the hospital?"

Dr. Luis Castro: That question depends on age, it depends on the type of operation, and it just depends on the person, as well. Definitely age has a tremendous component to how long you're going to be in the hospital.

I had the opportunity to work with very special surgeons doing pediatric heart surgery. You'd be amazed how quickly one, two and three year olds bounce back after surgery. They're almost running the next day and they're home in two or three days. As we get older, we have more muscle, more mass, which takes a little bit longer to heal. But, if you're under the age of 65, you're going to heal pretty quickly. It's pretty consistent. You're going to be in the hospital anywhere from three to four, maybe five days. Again, you are going to stay in the hospital until your pain is controlled, your bowel habits are back to normal, your appetite is normal. That's when I tell patients they are ready to go home. If you're over the age of 75 or 80, it may take an extra day or two so you're going to expect more like five days, six days, seven days is not that unusual and that's just because you're a little bit weaker, little bit older and it just takes a little more time to go through the process of healing in the hospital.

What Do Patients Do In The Hospital?

Speaker: Adam Pick and Dr. Luis Castro



Adam Pick: Another question we received from several patients is, "What do patients do in the hospital?" There are a couple of things that I remember from my time and I was in the hospital for five days. I rested a good amount of time. I also used the incentive spirometer. Dr. Castro, can you talk a little bit about what this device is?

Dr. Castro: The incentive spirometer is a little hand-held device that is going to become your best friend after heart surgery. It is a device that helps your lungs stay healthy through the hospital process. Meaning you've had a heart operation, whether minimally invasive or it's a full sternotomy. You've been put to sleep for a number of hours and the lungs were affected. This device looks like a musical instrument. You put it to your lips – you see on the end there, the white piece there. The, you're going to be taking big, deep breaths. Why? Because you are going to want your lungs to expand to their fullest capacity.

You're going to be quite surprised after the operation, when you can at first only bring the ball up to 500 or 700 cc's. The goal is to get back to where you were prior to the opera-

tion. It keeps your lungs healthy. It keeps you clearing your lungs and this correlates with how well you do and how quickly you recover after an operation.

In terms of what you said about rest, absolutely, you rest the first 48 hours. Why? Boy, there was a lot of excitement in preparing for this operation, you may or may not have slept the night prior to surgery and then you were knocked out for a good eight hours. You get jet-lagged in many ways. You're going to be off-kilter for a while. Yes, those first 24 or 48 hours are disorienting.

Adam Pick: To your point, Dr. Castro, about trying to get the patient back to normal, whether it's with the incentive spirometer or walking or taking showers when you're in the hospital. That's what I found to be most helpful for me when I was in the hospital, was trying to get back to normal. But there was some other things that I also experienced, I had x-rays when I was in the hospital and when I was getting ready for discharge I got a sheet called the "Do's and Don'ts". So, Dr. Castro, would you answer Ted's question, "Are there any specific do's and don'ts of the early recovery?"

Dr. Castro: My biggest message to patients, in terms of do's and don'ts is use common sense. Unfortunately, common sense is unusual or uncommon. Most important message here though is that irrespectful of the healing process, it takes time. I say "Less Is More" during those first two months. Don't push yourself. Listen to your body. You listen to your brain. Am I hungry? If I'm hungry, then eat. If you're not hungry, you're not ready to be ingesting a big pizza or doing anything like that. I would very specifically follow the instructions that you are going to be given.

Your chest wall will have been operated on whether it was through a mini incision or through a mini-sternotomy or a full sternotomy. It takes time for that chest wall to heal. I tell patients no heavy lifting for the first eight weeks and it doesn't matter what kind of incision you have, it just takes time. You don't want to hurt yourself. I do tell patients that they are going to be normal. They come sit in my office. They're sitting in there in their normal clothes and I tell them, "Expect to look just the way you do after the operation when you go home, the way you do now. Except for one little detail, you've had an operation and you have to be respectful of that healing process and that takes eight weeks."

When Patients Get Home From The Hospital

Speaker: Adam Pick and Dr. Luis Castro

Adam Pick: Another questions we received is, "What happens when you get home from the hospital?" To what you were just saying, Dr. Castro, I suggest to all of our patients at the website to be patient with your recovery. I'll never forget when I got a little frustrated during my recovery. I felt that I wasn't recovering fast enough. My wife sat me down and said, "You're just going to have to hurry up and wait." I did and I got better.

During my early recovery, I continued to use the incentive spirometer. Many patient use a big, red pillow that you see here. That helped me cough. Dr. Castro, can you talk about why that big, red pillow is used.

Dr. Castro: Absolutely. You made great points though, Adam. Be patient with your recovery, it takes time. Hurry up and wait is analogous to me saying, less is more. I still remember reading a journal entry about an NBA player -- one of these basketball players that plays professionally, just an elite athlete. He had an aortic operation, expected to be back on the court within three weeks. Uh-oh. It takes time to heal. He was surprised that it took three, to four, to five months to finally get back in shape. But the first two months were very, very difficult because he was trying to push himself too much.

That little friend called the incentive spirometer. You're going to be able to take it home with you. Continue doing those breathing exercises because once you get up to 3,000 cc's or where you were at baseline, it's probably time to stop using the incentive spirometer. The big, red pillow is not only comforting, but it allows you to brace your arms around your chest and when you cough. It allows you to compress a little bit without hurting yourself, so that your chest doesn't expand as much. It helps reduce the amount of discomfort you may have when you're moving around, when you're coughing and taking those deep breaths.

You made the point that "Activity is a good thing". Absolutely! We're not talking about activity, like running laps. We're talking about activity staying connected with your friends as you did, finding some good books, maybe you had some books that you needed to read. This is a great time to do it. If you don't have the patience to read, there are books that you can download and listen to. Now, it's a great time to catch up on all the movies that are coming up -- as the Academy Awards are upon us. These are going to help you with your recovery, definitely.

Adam Pick: Lately I've been hearing from patients that during their recovery, they're learning languages. One patient I know learned Italian and another patient I know is learning Mandarin, which I think is a really effective use of the time during the initial recovery.

The Daily Recovery Health Log

Speaker: Dr. Luis Castro and Adam Pick

Adam Pick: Next, we'd like to talk about something that is really unique for Dr. Castro and his team. I'm excited that we have a chance to talk about this today. Dr. Castro, can you share what you're doing at Sequoia Hospital with the Path to Wellness Daily Health Log.

Dr. Castro: Absolutely, Adam. The connection that I make with my patients, not only begins when I first meet them, in our consultation preparing for surgery. It doesn't end after I finish operating on them here. I truly feel that this is just the beginning of a wonderful journey because you're going to get healthy. On the day of discharge, all of our patients at Sequoia Hospital receive what I call the Path to Wellness log book that helps them through this post-operative journey. In this log book, we set weekly goals for patients at home to use as a guide.

We ask that patients record their daily activities. I can't stress how important it is that if you don't have a scale at home, it's a good time to get one. Enter your daily weights because we tend to retain water during these operations. It's important to know exactly what's happening with our weights. We want to account for the amount of pain medica-

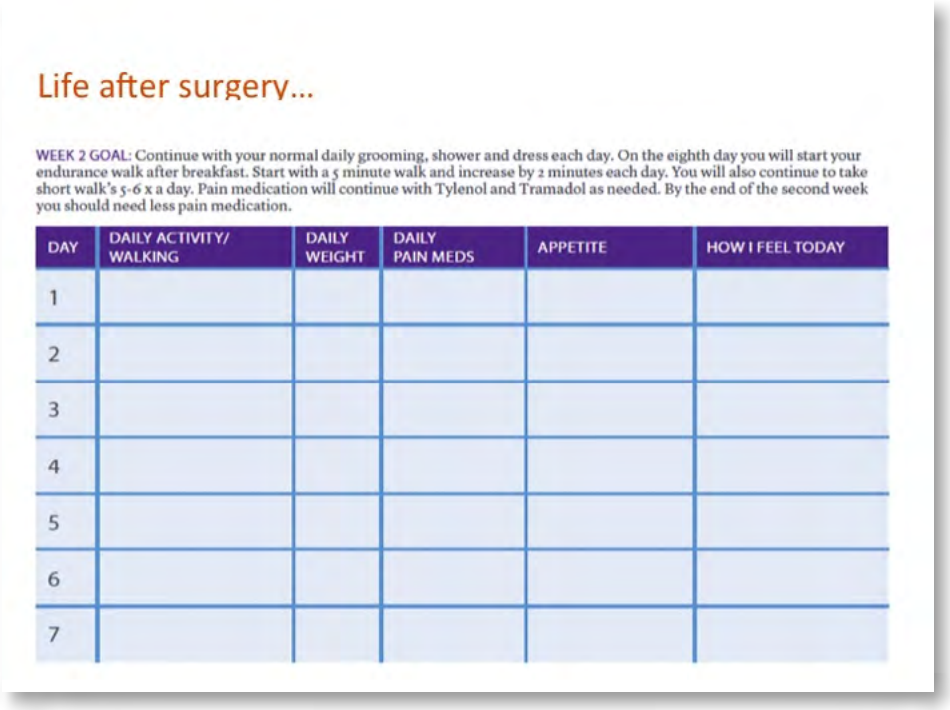
tion that you might be requiring. I want you to report your appetite. I want you to tell me how exactly you feel each day. There's plenty of research out there that shows that when patients actually record this progress, they heal faster and they recover faster. You may think you're having a bad day or a bad week, but you can glance at your notebook and guess what, you see pretty good progress.

Life after surgery...

WEEK 1 GOAL: Continue with your normal daily grooming, shower and dress each day. Walk 6 – 7x a day around the home and outside. Pain medication will include Tylenol 650 mg two tablets every 6 hours as needed. Take Tramadol if needed. Continue with coughing and deep breathing exercises 5 times a day.

DAY	DAILY ACTIVITY/ WALKING	DAILY WEIGHT	DAILY PAIN MEDS	APPETITE	HOW I FEEL TODAY
1					
2					
3					
4					
5					
6					
7					

I truly believe that this is an invaluable tool. Let's look at week one, life after surgery. Week One, I'm just going to read the top here. Continue your normal grooming. That means shave every day, wash your face, shower, dress each day. I can't tell you how important it is to feel like a normal human being. We're going to ask you to walk six to seven times around the house, around outside the house. This is going to be a variable for many people if you're younger, you might be walking a little bit longer distance. If you're a little older, don't worry about it, the frequency is the important thing here. It's a reminder that pain medication will probably include Tylenol as needed and you may be taking Tramadol, Tylenol with Codeine, or Vicodin, as needed for more moderate discomfort.



Life after surgery...

WEEK 2 GOAL: Continue with your normal daily grooming, shower and dress each day. On the eighth day you will start your endurance walk after breakfast. Start with a 5 minute walk and increase by 2 minutes each day. You will also continue to take short walk's 5-6 x a day. Pain medication will continue with Tylenol and Tramadol as needed. By the end of the second week you should need less pain medication.

DAY	DAILY ACTIVITY/ WALKING	DAILY WEIGHT	DAILY PAIN MEDS	APPETITE	HOW I FEEL TODAY
1					
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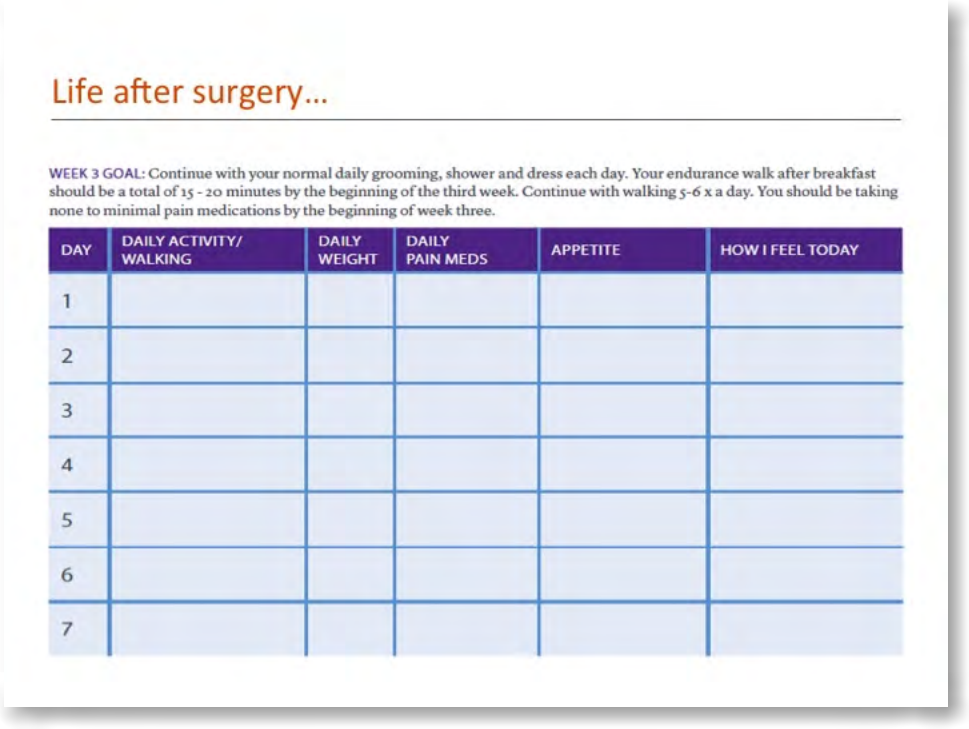
This is a reminder as well to continue your coughing and deep breathing exercises with the incentive spirometer, five times a day. Let's go to week two, Adam. Next slide. Again, a reminder, so important, continue with normal daily grooming, shower and dress each day. If you don't these things, believe it or not, it can set in some depression. On the eighth day, we want you to start with an endurance walk after breakfast, which means increase your walk by five minutes. The next day add two minutes to that endurance walk. We will also want you to continue with the short walks after your endurance walk throughout the day. Pain medications are probably going to be required and by the end of the second week, you're going to notice as you've jotted down that you're going to be needing less pain medication.



Life after surgery...

WEEK 3 GOAL: Continue with your normal daily grooming, shower and dress each day. Your endurance walk after breakfast should be a total of 15 - 20 minutes by the beginning of the third week. Continue with walking 5-6 x a day. You should be taking none to minimal pain medications by the beginning of week three.

DAY	DAILY ACTIVITY/ WALKING	DAILY WEIGHT	DAILY PAIN MEDS	APPETITE	HOW I FEEL TODAY
1					
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Let's go to week three, Adam. Again, normal grooming, shower, dress each day, that's important. Your endurance walk at week three is going to total about 15 or 20 minutes by the beginning of this week. We want you to continue walking, again the shorter walks, maybe a little bit longer, five to six times a day. You should be taking less pain medication. It's not unusual for people to still be on pain medication through three weeks after the operation, but you're going to notice that the amount of discomfort is dramatically less and you're going to be using less pain medication. Week four, continue daily grooming, shower, dress each day, so important. Your endurance walk, hopefully, will now total 30 minutes. If it's not, be patient with yourself.

Life after surgery...

WEEK 4 GOAL: Continue with your normal daily grooming, shower and dress each day. Your endurance walk should be at a total of 30 minutes at the beginning of week four. Continue with walking 5-6 x a day. At the end of week four you will have permission to drive.

DAY	DAILY ACTIVITY/ WALKING	DAILY WEIGHT	DAILY PAIN MEDS	APPETITE	HOW I FEEL TODAY
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Most people will be finding that they're going to be walking after breakfast for about 30 minutes, then we want you to continue walking with five to six times a day. At the end of the four weeks, it's time for you to be able to drive. Why? Because you're on very little pain medication. The reason that I tell patients that they shouldn't drive early after an operation is that if you're on a little bit of pain medication, your reaction time could be diminished just a little bit and that might get you in trouble if someone just runs across the road in front of you. Can you drive in an emergency following your operation? Absolutely. Try to wait though -- at least two weeks, four weeks is the big mark for me when I tell patients, you're ready to drive and you're safe to drive.

Life after surgery...

WEEK 5 GOAL: Continue with your normal daily grooming, shower and dress each day. Continue with your endurance walk of 30 minutes or more daily.

DAY	DAILY ACTIVITY/ WALKING	DAILY WEIGHT	DAILY PAIN MEDS	APPETITE	HOW I FEEL TODAY
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Week five, Adam. Again, continue with your normal grooming, continue with your endurance walks. By this time, you will have seen your cardiologist, maybe once or twice you will have seen your surgeon and hopefully, all the little things and the discomfort that you felt before are behind you. You're on your way to recovering. You'll notice that in none of these slides does it say for you to run three miles -- or, expect you to do something that would be on par with Olympic training. This is a process and week six, seven and eight are still an experience that requires a lot of patience. Remember, that it's not until eight weeks that your sternum or your chest wall heals, so be patient with lifting heavy things.

Allow people to help you lift groceries. If you're flying, you can fly at this time. Don't grab that suitcase and lift it into the overhead compartment. Ask for help. It's so important to allow the healing process. Be respectful of that healing process in order for you to heal normally. With that, Adam, we can open up to more questions if we have some time.

Adam Pick: Dr. Castro, I can't overemphasize how important and thoughtful this daily log is for the patients out there. Just to give you a quick story of my own experience, I did not have a daily log like this. As a result, I had fluctuations and inconsistencies in, essentially every column and category that you describe here. Whether it's the walking or the daily weight or the pain medications. What I found was, I would take medication and then I'd try and remember if I'd taken the medication and I couldn't remember. My appetite was up and down and ultimately, the concept and the question of how do I feel today, is so important for providing patients the opportunity to share their thoughts. There are several elements, as you've alluded to Dr. Castro, that go above and beyond just the physical experience of heart surgery, how it impacts our social capabilities, our psychological capabilities, our emotions.

Attending Cardiac Rehabilitation

Speaker: Adam Pick and Dr. Luis Castro

Adam Pick: A big question that I have for Dr. Castro is, "How important is cardiac rehab for patients?"

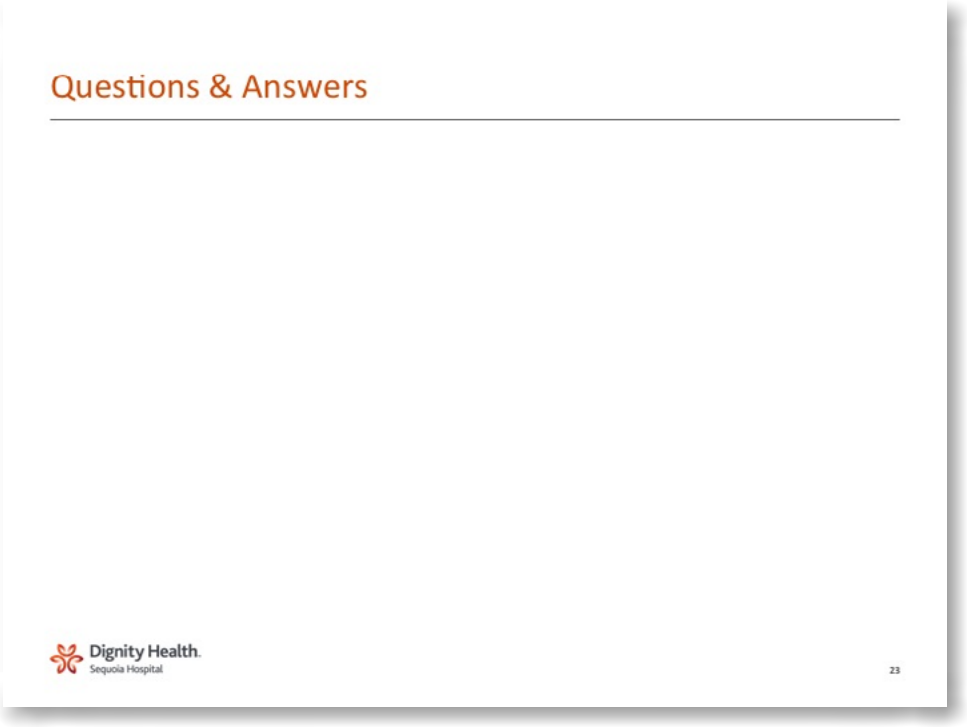
Dr. Castro: Cardiac rehab is extremely invaluable and if you have access to it, I really recommend you look into this. Now, I don't want you to start cardiac rehab too early after heart surgery because I want you to recover first. Recovery takes some time so this is something that I want you to consider at two or three months following the operation. The reason that I think it is so invaluable because it is done in a setting that is very safe. It is done in a setting that is almost like having your own personal trainer. You're being monitored carefully. You're blood pressure is being checked, so it's being done in a very safe environment. You're going to find that you're going to be surrounded by patients at many different time periods of their journey to recovery. You'll be hopefully interacting with patients that are six months out if you're early on and you'll get to see where they are. You'll notice as you go through the process that somebody at a earlier stage will ask you ques-

tions about expectations and how you've gotten to where you are. I just think that it's just a wonderful community, first of all, and a sharing experience, but it's also a tremendously safe environment for you to then begin the process of rehabilitating and getting back to where you were.

Adam Pick: For the people on the call know, this picture is actually me in cardiac rehab. I believe it's about seven weeks after my heart valve surgery. In my experience, cardiac rehab for me really was the turning point of regaining that complete feeling of being normal. I got to meet other patients who'd experienced things similar to me. I got advice from other patients. I was able to share stories with other patients and celebrate their stories. Cardiac rehab brought together the physical side, the social side, the emotional side, and the spiritual side as well. For me, cardiac rehab was priceless, and I really encourage patients to take the time to figure out, maybe even before you have surgery, if is there a cardiac rehab program around you.

Questions And Answers

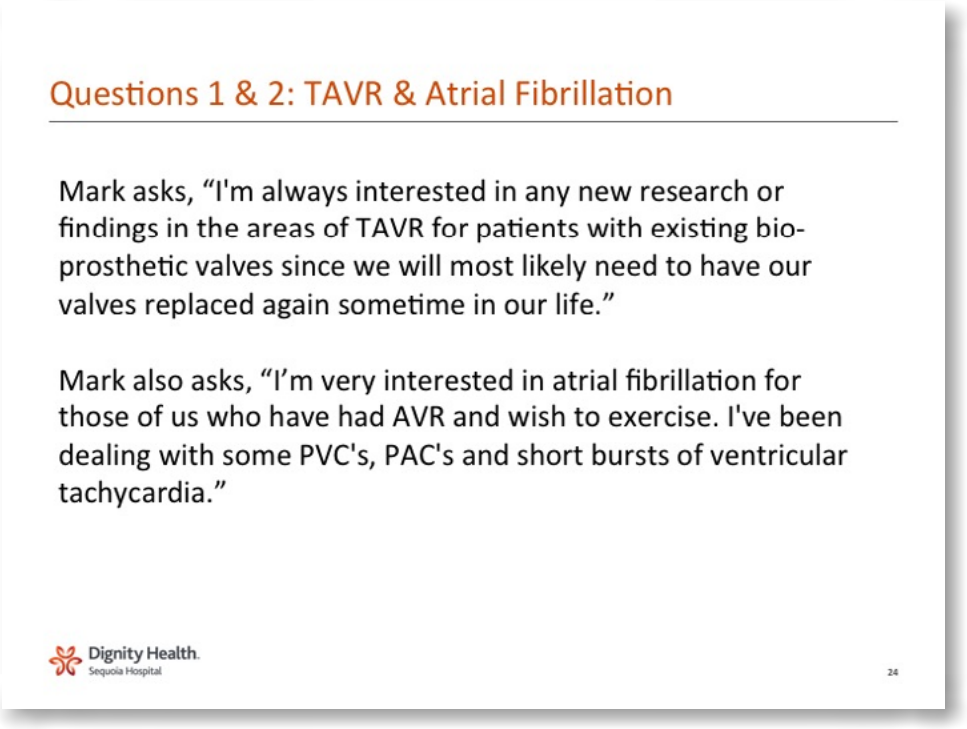
Speaker: Adam Pick and Dr. Luis Castro



Adam pick: We've received a boatload of questions. We've got about ten minutes for the Q&A section.

Q&A: TAVR & Atrial Fibrillation

Speaker: Adam Pick and Dr. Luis Castro



Adam Pick: Why don't we start with Mark, who asks really two questions, one about TAVR and one about atrial fibrillation. The first one, Mark asks, "Is TAVR going to be something that can be used in valve-in-valve procedures?"

Dr. Luis Castro: Great question, Mark. TAVR, as I stated before, is in its first generation, first iteration, if you will, and believe it or not, in Europe, patients who are elderly, who are felt to be too sick for surgery and have a preexisting tissue heart valve, some of those patients, I think the number is in excess of over 50, have been offered a TAVR where the actual stented valve goes through the groin, goes up inside the tissue valve that's there and expands it to replace the dysfunctional tissue valve that has worn out over time. We don't have much data right now, but it is something to look forward to. I really do think that this technology is going to be in its second and third stage so that possibly, maybe it's going to take ten years from now at least, to really get very safe devices that might even be completely engineered to fit inside a previous tissue valve, because right now they're generic and they're meant to just expand in any aorta. These are going to be targeted,

I think, for specific tissue heart valves, and it's going to be something that I actually tell my patients, when they choose tissue heart valves, we have no idea what's going to be in place 15 years from now. If there is a TAVR solution, a very good one where we have good data, it's going to be a wonderful way to avoid a second operation.

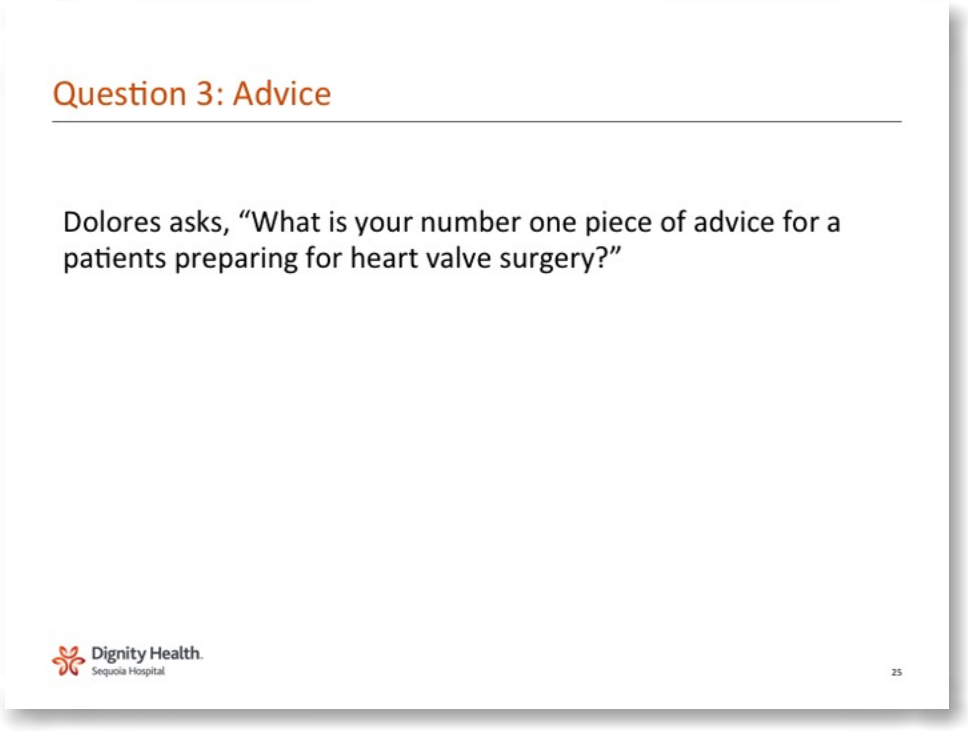
Adam Pick: Mark continues on. As a former patient, he asks, "Is atrial fibrillation common for patients after surgery in those who exercise?"

Dr. Luis Castro: Another fantastic question, Mark. Atrial fibrillation is somewhat of our Achilles Heel in heart surgery. It turns out that anywhere between 10 and 30 percent of our patients following the operation have afib. The healing process that occurs for the heart, the local inflammation – I always tell patients if you've got an operation on your face with incisions there, you'll notice quite noticeably that two or three days, a week afterwards, your face is swollen. Well, guess what. That same process occurs in the heart and the response to that, we believe, is probably atrial fibrillation where the upper chambers, instead of squeezing in a coordinated fashion 60-80 times a minute, will develop this irregular sort of short-circuited quivering upper chamber that is relatively harmless. That is one of the reasons you're in the hospital, because we want to make sure that you don't stay in atrial fibrillation. If you do, you may need to be on a short-term blood thinner for six to eight weeks until this resolves.

We still want you to continue with exercises, though, and that's where the cardiac rehab plays in it. It's just a fantastic opportunity for us to record what's happening to your heart rhythm because it's not going to be unusual. You shouldn't be frightened if you do have these PVCs or what we call premature ventricular contractions, or PACs, or premature atrial contractions where you feel kind of your heart beating a little fast. This is the reason why cardiac rehab is so invaluable, very common, very safe, something that we need to know about as physicians, though, and something that can be documented.

Q&A: Best Piece Of Advice

Speaker: Adam Pick and Dr. Luis Castro

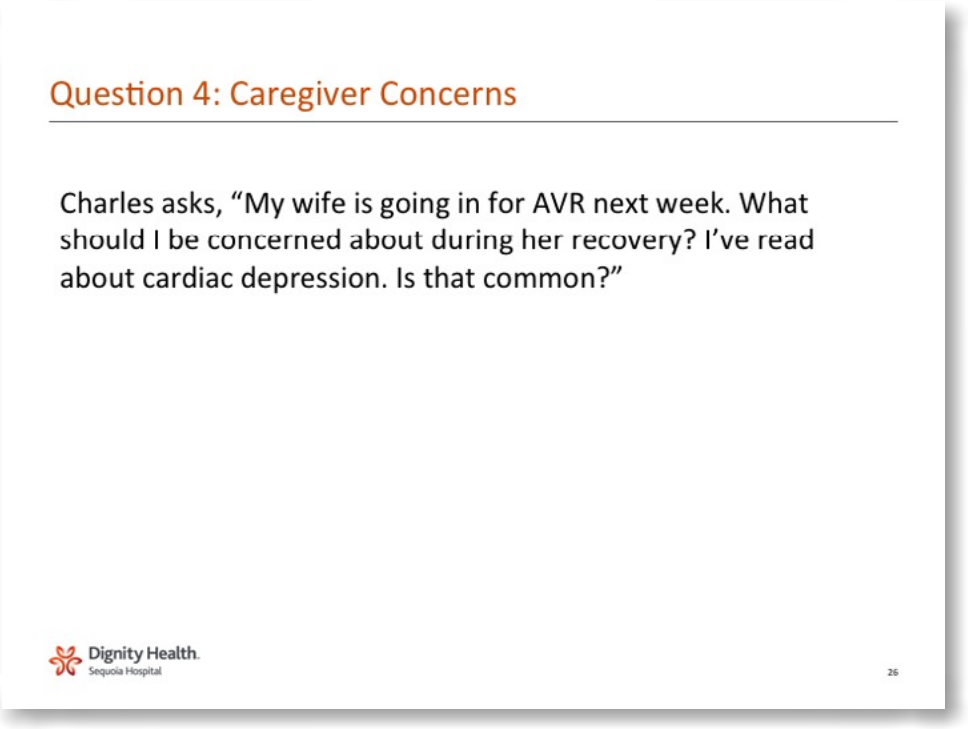


Adam Pick: The next question comes in from Delores. She asks, "What is your number one piece of advice for patients preparing for heart valve surgery?"

Dr. Luis Castro: Delores, excellent question, and I think you probably know the answer to that now after this presentation; education, education, education. Do not be a passive consumer in this. Seek out information. Empower yourself before the operation by knowing as much as you need to know, as much as your family needs to know. Feel confident, feel trusting, feel ready for heart surgery.

Q&A: Cardiac Depression

Speaker: Adam Pick and Dr. Luis Castro



Adam Pick: Charles has a question as a caregiver. He asks, "My wife is going in for AVR next week. What should I be concerned about during her recovery? I've read about cardiac depression. Is that common?"

Dr. Luis Castro: Charles, your wife is going to do well. There's one thing that you have to know, that right now she has an aortic valve problem that may or may not be causing symptoms. She's going to have this valve replaced, and her heart is going to be so much happier now with either a non-narrowed valve, a nice open valve, or a valve that doesn't leak. Some of what I discussed today is directed at you. Recovery for her is going to take time. Less is more. Remind her that she shouldn't be doing the things that she was doing right up to the operation because it's going to take time for her to recover. So, for you, I think that being a good partner, listening to her needs, helping her through this process, helping her with her recovery logbook, if she has one, is going to help her through this journey.

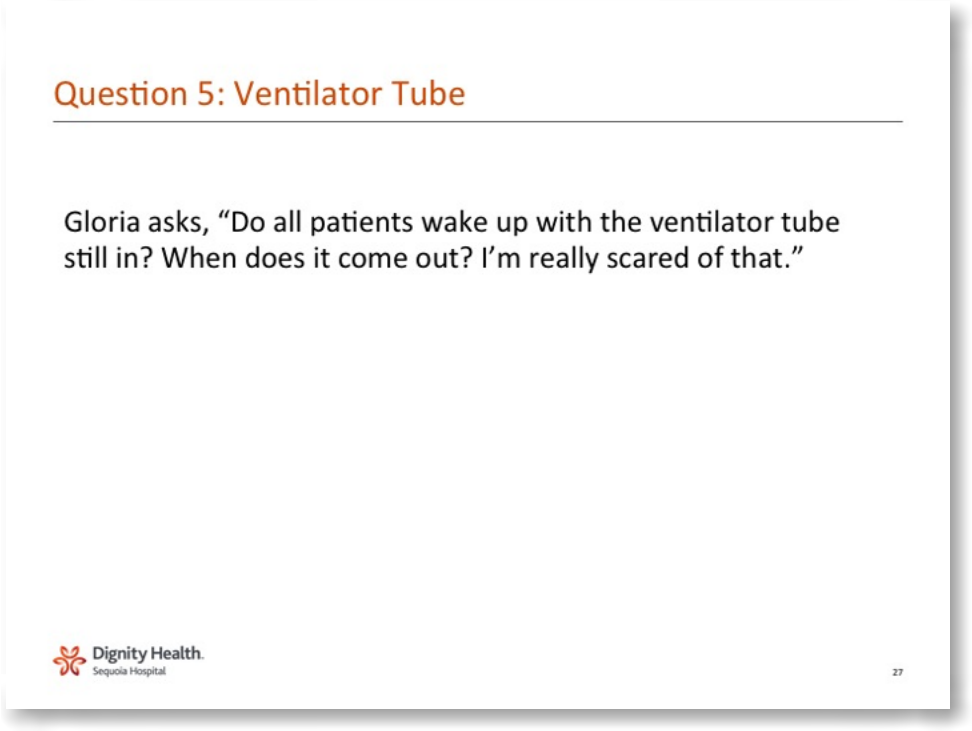
Cardiac depression is something that is, I wouldn't say common, but it's not unusual. I don't like to talk about it too much because I feel that when I do, I kind of put that seed into people's brains and expectations. It's not uncommon though. This is a big life event. This is, in some ways, even though you're prepared or not, for your body, it's a traumatic experience. You're going to be a little bit depressed that maybe you're set back physically in ways that you didn't think you would be, and that's why it just so important to be patient, to remind yourself that less is more, and to know that though some people will have a bit of depression, this is short-lived. Very few people need medications to get them through this. Support is so important and time will take care of this problem.

Adam Pick: When I receive this question from caregivers, I usually respond with what I call the "3 L's" of how caregivers can help their family members or friends going through heart surgery. The first L is to learn. Learn as much as you can about this procedure so that you know what to expect for the patient that you're caring for. The other L is love the patient. There's nothing better than feeling love and making a patient feel special during this time which is full of unknowns and doubts and fears. Love that patient as best as you can. The final L is to simply listen. Listen to what the patient is sharing with you, whether it's your mom, your wife, your husband, your daughter, your brother, your sister. If you're not hearing much, maybe you ask some questions. We're not all disciples of Oprah and Dr. Phil. It's not always easy for us to be open up with our emotions. When you can hear what your patient is going through, you can easily identify that this patient is doing fine or maybe there are some things here that need to be addressed.

Dr. Luis Castro: Those three L's, I love those three L's. I need to integrate that into my education with family members; learn, love, and listen. Those are just powerful, simple words.

Q&A: The Ventilator Tube

Speaker: Adam Pick and Dr. Luis Castro



Adam Pick: Gloria asks, "Do all patients wake up with the ventilator tube still in? When does it come out? I'm really scared of that."

Dr. Luis Castro: Absolutely. Gloria, don't be scared. It's good that you know. Expectations are 100% of being able to encounter, to deal with those anxieties you have before an operation. I ask my patients, "What was the worst experience during the hospitalization?" This question helped me change the way I remove the ventilator tube in patients. They would always say it was difficult waking up, being fully alert, having that breathing tube in, and not being able to tell or talk. The tube does come out, thankfully, and it's an experience that's going to be behind you.

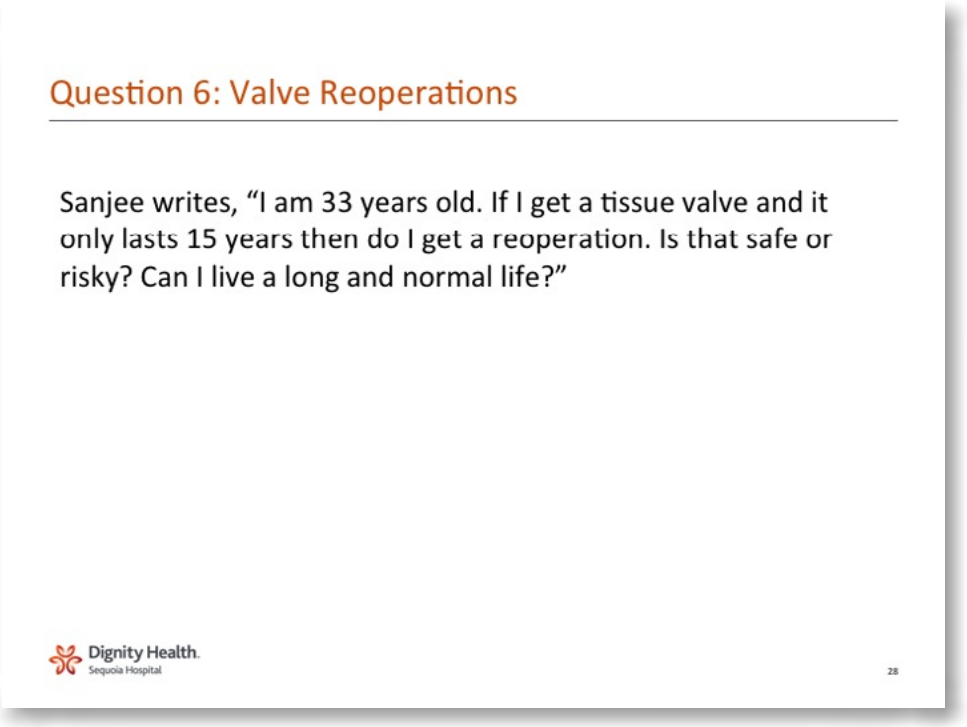
The way I've changed it for our patients at Sequoia Hospital... I tell our nursing staff that all of our patients recovering from heart surgery to be still slightly asleep; maybe their eyelid's open and breathing fully but not completely alert, and awake, and aware of that tube and when that tube comes out.

When I had my appendix removed, I had a breathing tube. Believe it or not, I have no recollection of that tube coming out. Why? Because they did it while I was asleep, and I don't think there's any reason why our heart patients can't be treated the same.

Let your surgeon know if you're going to have an operation, let him know, let your anesthesiologist know that you have some concerns – that you're hoping that you can be slightly asleep when that tube comes out. You'd be surprised. We're not all thick-headed. We really do care about patients, and we're willing to change things. For me, when this recurring issue came up for my patients, it was time for me to change the way I did things. Hopefully, Gloria, I hope that helps.

Q&A: Valve Reoperation

Speaker: Adam Pick and Dr. Luis Castro



Adam Pick: We're nearing the end of the webinar, and I think we have time for one more question. This is a question that comes in from Sanjee. He writes, "I am 33 years old. If I get a tissue valve and it only lasts 15 years, then do I get a re-operation? Is that safe or risky? Can I live a long and normal life?"

Dr. Luis Castro: Sanjee, great question. Thirty-three years old, that's very young. If we had a perfect valve to put in patients – we'd operate on patients without symptoms and before they have chamber enlargements. A perfect valve would be a valve that could last you forever, guaranteed, and you wouldn't have to be on a blood thinner. We're not there with any of these procedures, unfortunately. If you get a tissue valve at 33, you're going to be back. You may be back at 48, hopefully 50, to get a re-operation because you're going to outlive that valve.

Some patients, believe it or not, get 20 or 25 years out of those tissue valves; less likely, but most patients get about 15 years. Is the re-operation safe? It really depends on the experience of the surgeon in the hospital that you go to. But, if you go to experienced hands that do a lot of re-operations, the risk of re-operation is probably the same as the risk of the first operation. You're going to still be young, 48, 50. The second operation should not be anything that is too risky. It should be still extremely low, that risk for re-operation. Of course you can live a long and normal life, even after the re-operation.

At that time at 48, 50, we still don't have a perfect valve and you don't want to think about having a third operation. This is a time when you may want to say at that time, time to use a mechanical heart valve and start with blood thinners. You may decide that heck, another tissue heart valve will get me to 65, 70, and that'd be a great opportunity to go to maybe a TAVR solution, the transcatheter valve replacement. Bottom line is that you're going to live a long life, Sanji, and you're going to live a normal life.

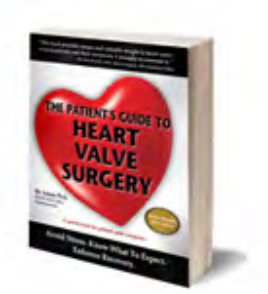
Adam Pick: With that response, we are going to conclude the webinar, but please don't exit the webinar just yet. Dr. Castro, on behalf of our entire community, I just want to extend an extraordinary thank-you to you and the team at Sequoia Hospital for being a part of this event today, for sharing your expertise, and obviously for taking care of so many patients from our community who have come to you with heart valve disorders and gone on to live just wonderful lives. Thank you so much, Dr. Castro.

Dr. Luis Castro: You're absolutely welcome, Adam. Thank you so much for inviting me to do this webinar.

Adam Pick: As we close, I'd like to ask everybody to complete a very quick four-question survey that is about to appear on your screen. As we always say here at HeartValveSurgery.com, keep on ticking. Thanks so much for being here today. Bye-bye.

HeartValveSurgery.com Resources for Patients

Since 2006, HeartValveSurgery.com has developed several resources to help you better understand your diagnosis, your treatment options, your surgeon and cardiac clinic selection, and your recovery. Listed below, you will find resources created exclusively for patients and caregivers. We hope they educate and empower you.



Read the 6th Revised Edition of *The Patient's Guide To Heart Valve Surgery* – Since its initial publishing in 2006, this special book for heart valve surgery patients and their caregivers has been read by over 25,000 patients and caregviers. Written by Adam Pick, a former patient, this step-by-step guide helps patients avoid stress, know what to expect, and enhance recovery. Learn more.

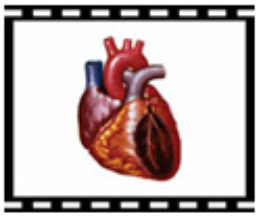
Use the Surgeon Finder – Created by thousands of patients, caregivers, surgeons and cardiac centers, the Heart Valve Surgeon Finder is the world's only patient-recommended database of heart valve surgeons. You can search by location, by name, by problematic valve and by surgical procedure. Learn more.

Northwestern Memorial Hospital
Brigham and Women's Hospital
Florida Hospital Cardiovascular Institute
Cleveland Clinic

Research Heart Valve Clinics – To help you research leading cardiac centers that specialize in heart valve treatment, our new 'Valve Clinics' section of the website was just launched. Now, with a few simple clicks you can go on virtual tours, meet surgeons, meet nurses, see patient success stories and more. Learn more.

Meet Other Patients Like You! You are not alone. Meet patients -- just like you -- at our online community of patients and caregivers. This global community was designed to help you learn from other patients, stay connected with your support group, and empower you. Learn more.

Visit Adam's Heart Valve Surgery Blog – Recognized as one of the 'Top 50' surgical blogs on the Internet, Adam Pick provides patients and caregivers the latest news, technology updates, patient tips, surgeon interviews and patient success stories. Learn more.



Watch Educational Videos – Learn about heart valve disease, diagnosis and treatment options from the world's leading cardiologists and cardiac surgeons. Learn more.