[MUSIC PLAYING]

KEN CHERRY: Good evening, and welcome to Smith & Nephew's presentation of same-day surgery involving total joint replacement. I'm Dr. Ken Cherry. I'm joined by my practice partner, Dr. Chris McClellan and Dave Berkheimer, the director of our anesthesia program. Tonight we have a pretty full schedule for you. I'd like to go over what we're going to do this evening and explain to you what you're going to see.

So to give you an overview, this is what we're going to do over the evening, give you a history of our Surgery Center, how we've established protocols, talk a little bit about our pathways, what I believe is our recipe for success. We're going to show you an actual surgical procedure. You'll get to hear from our patient about her experience. And then we have, also present in the room, what I consider to be our panel of experts.

We're joined by our Director of the Home Health Care Service, Amy Hancock. Our CEO and Administrator, unfortunately, Dave Davies, left for vacation. He was available at the 7 o'clock show. He is also going to be available by contact information. So any type of questions with insurance, et cetera, that we can't answer, we'll do our best to get it to you.

And again, you can watch the previous presentation, some of the questions were address there. So with that said, I'm going to turn it over to my partner. Chris is going to give you sort of an overview of our history. Chris?

CHRIS MCCLELLAN: All right. Thank you. So just some information about what we've done so far. We have to actually accomplished 126 replacements with measured outcomes, 55 hip replacements, 71 knee replacements, all starting back in December, 2012.

And we all are a freestanding surgical center. We are not attached to a building. We are not a 23-hour program. We're actually a 0.125 stay. You will see you tonight that a patient is home in roughly three to four hours after their surgery, and it's because of some highly advanced protocols that we've developed.

Some of our patient demographics-- aged 22 to 72, a BMI less than 50-- females 68, males 58-- ASA classification of a 1 and 2 only. And we've actually had our first revision. And as far as discharge goes, well, there really is no another option. These patients are all going directly home.

And in order to do this, it requires excellent communication between all the providers and a care pathway management. I think this has to be the most accountable care you can have. Between the surgeon, the anesthesia team, the home health providers, and the pharmaceutical companies who actually provide the IV medication we need, it requires constant and complete communication between all of us.

Now, where to start. Well, you want to understand your practice and patient demographics. If you live in an area where that's completely of elderly patients, you don't have a lot of private insurers, potentially. This may not be where you want to begin. And that requires an in-depth look at your own practice to see what kind of graphics you have.

You definitely want to assess your team's clinical capabilities. Do you have the right surgeon in the area? Do you have good anesthesia? Do you have good physical therapy at home or locally?

You need to evaluate the service-line resources. Is your therapy-- are they good, but also are they able to go to different homes? Can they go outside your own zip code? And you have the same with the home nursing program, are they big enough to accommodate what you need to do?

Are they all allowed to do the things that you need to have done by each individual patient? And the home pharmacy, do you have a local pharmacy that you can contact that can actually set up the IV medications necessary?

Negotiating with payer contracts in advance-- this is something that's quite important. You want to make sure you actually do these procedures and get reimbursed properly. Also, you need to understand the cost and necessary resources for the outpatient program.

Your facilities, do you have the right amount of operating rooms? Are they big enough? Do you have the right instruments? Do you have enough instruments to perform multiple cases?

Staffing-- are your staff equipped to do replacements, are they trained to do replacements? And we also think that implementing a joint coordinator-- which a lot of places can't do that-- but it is very good thing to have. We have one ourselves, which really helps to coordinate the complete package that we have. And you want to identify some team leaders. There's going to be some individuals who want to take charge-- surgeons, anesthesia, local home nursing providers that could be the team leaders, and some who can take charge and embrace the protocols.

Now, communication, this is huge. Without good communication, this is very difficult to do. And it begins with the first office visit. This patient, that you're going to operate on on an outpatient basis, will be inundated with information. But it's repetitive, it's going to happen over and over again.

Cloud Based Care Pathways-- this where you have multi-disciplinary contacts between all the providers, between all of those involved with the direct care of this patient. Open communication-- we have cell phone services for all of our providers. To the anesthesia, we talk back and forth, and it's a must-do. You must be able to communicate with your Anesthesia Department, your home nursing providers, they all have to be on the same board, all together.

Now, the care is protocol-driven. We don't just do this-- wake up in the morning, come do the operation, do our own thing. Any change in patient status or care or condition is communicated to all the providers.

If something changes on my end, my anesthesia team needs to know. If something changes on the anesthesia end, I need to know. If something were to change on the home therapy end, we need to know.

Protocols are changed and implemented at Board level. At our surgery center, we do have an official board. We also have a board of those involved with the actual care of the patient and the joint protocols. Nobody can deviate from these protocols. If you want performance at your center, we think it's very vital to have strong protocols that everyone follows, evidence based, and no one can change them based upon their own ancillary information.

Preparation-- now you definitely want to educate your referral base of these newly-improved patient options. Obviously it's going to be new to the area. You're going to have to educate other people about the outpatient program.

You want to educate your office staff and the care teams. They need to know-- even from the secretary walking into your building-- that you offer outpatient and what it is, what exactly it means to do that. Care Pathways, implementation, home nursing, the therapy, and the home pharmacies-- the surgical team needs to know exactly what we're doing with the anesthesia protocols, the procedure, and the care pathway implementation as well. And you can train, you can practice, you can discuss, you can do surgical run-throughs, equipment supplies-- these things all need to be checked before you proceed without outpatient programs.

Data collection-- Process Improve with Care Pathways is very important. The reason is because when we first started, we sorted thermal nerve blocks, patients weren't really able to move their legs very well. And we've actually improved the program over time. It worked then, it's even better now. But the key was having strong protocols that were developed by the surgeons doing it, and along with anesthesia, and with home nursing, to make the experience and the outcome very good.

So the implementation, now. So you decide to do it, and how are you going to implement it? Well, it begins in the office visit. Obviously you select a patient you think's a good candidate. They've went through all their other alternative ideas and injections and therapy, and you've found the perfect candidate.

Now, you want to find a candidate-- they may be a good age, they may be in good health, but maybe they're not motivated. You want to find someone who's motivated. You don't want the person who wants to sleep in the hospital all day-- this isn't going to be your ideal, typical outpatient patient. And you want somebody who wants to avoid the inpatient stay.

So there is a selection criteria that have, and we can discuss those details later. You can always ask this question about this, but it might be a little bit too long in detail to discuss tonight. Patient education is absolutely vital. And like I said before, the patient will be inundated with information that, again, is repetitive.

It's based upon the protocols. Nothing changes. This patient will be told by myself, anesthesia, the Joint Coordinator, the Home Therapy Program. Everybody knows their exact role in this patient's recovery.

So initiating the Care Pathway begins with our Joint Coordinator. In our own office, a patient decides to have the outpatient replacement, and they're first going to see the Joint Coordinator. And after this is all said and done, one the most critical things that we have to do is have the home exam.

We to make sure this home is safe. Do they have a million steps to get to the house? Is safe in the home to actually go home when on an outpatient program? So in order to give you more information, we're going to go and have you listen to our Home Health Care Agencies talk about the home health visit.

AMY HANCOCK: Hi. I'm Amy Hancock, the CEO and Founder of Advantage Home Health Services, also an Occupational Therapist. I'm a company today with--

SHEENA HENRY: Hi. My name is Sheena Henry. I'm the Director of Nursing with Advantage Home Health in the Altoona office.

AMY HANCOCK: We're here today to discuss our Clinical Pathways and Care Pathways for the Advanced Center for Surgery Patients. We are wanting to discuss our process and our successful outcomes that we have experienced for the past year. Typically, when an advanced surgery center patient is referred to a Advantage Home Health Services, the referral comes in three to four weeks in advance. At that point in time, the Home Health Agency's billing office will go ahead and do an insurance verification and check all the patient's out-of-pocket expenses so that we're able to share that information with the patient in advance to lessen their concern when it comes to the financial piece of this surgery. Then, two weeks prior to the surgery date, the physical therapy provides a home assessment, which is really a twofold process.

The home assessment, first, is a checklist that will look at all the areas of the patient's house, as well as the outside environment. We're able to determine, at that point, and assess the patient for any safety and risk concerns that we may have with them coming home from the hospital on the same day following a hip or knee. Such things that occur during that home assessment are also the baseline vitals are measured, as well as patient education teaching tools are also provided.

The second part of that home assessment is what we call the SAFE-- the Advantage Safe Total. The Safe Total is a stratified assessment for excellence. It's really a risk assessment tool that was specifically designed for the Advanced Center for Surgery patients, in which we were able to then identify any potential risk factors that that patient may experience that may put them at a moderate, high, or low level risk level for this procedure.

We look at such things as medications, the introduction of new medications, the preoperative functional ability of the patient, their home environment-- as well as the safety support system they have with their caregivers-- and then determine any potential needs that they will have upon discharge that will potentially put them at success or risk. Once those assessments are done, Advantage Home Health Services shares those results with the hospital themselves, and the physicians directly, to then determine-- on a collaborative nature, through an interdisciplinary team approach-- if the patient will be successful to for this procedure.

Finally, as we approach the week the surgery, the patient will then receive a call on Monday, prior to surgery, from the concierge-- the patient concierge-- who will ask for any additional questions, concerns, or thoughts that they may have that we may be able to help alleviate any of their concerns prior to the surgery. Now we're going to move on to the day of surgery and what that procedure looks like. Sheena?

SHEENA HENRY: On the day of surgery, the Surgery Center will communicate with us, here at the Altoona office, and let us know, approximately about 30 minutes prior to the patient's discharge. They also call as the patient is leaving. So we then, at the office, contact the nurse and the therapist so that they are at their house when the patient arrives.

During the risk assessment and the home assessment, they actually are aware of that. They know to stay in their car due to the fact of the spinal anesthesia, due to the pain medication. We want to make sure that they safely get into the home.

So once the nurse and the PT gets there at the home, they assess the patient at the house, get everything setup, consents are signed, the nurse does a complete head-to-toe assessment, does the vital signs, incision check. The knee patients have hemovac drains usually. So the nurse is going to educate them on all the aspects of properly draining it, properly looking for signs and symptoms of infection, DVT, pain medications, their side effects, all of those critical things that the patient-- and the caregiver as well-- is going to need to know to get them through the night until the nurse arrives the next day.

They also, for the hips, they go home with an On-Qpump, so they also have to be educated on how to adjust that in order to maintain their pain control. The nurse also administers an IV, and the surgery center lets us know when the preoperative antibiotic was originally administered. So we know approximately eight hours, that patient needs the second dose of antibiotics.

The next day, they also will get the second dose. Physical therapy also treats them, evals them the same day. They start supine exercises. They measure their active range of motion, their passive range of motion.

When the nurse visits the next morning, they do another full assessment, which is vitals, incision check, pain control, monitors the femoral insertion site or the hemovac drain, whichever is applicable. They administer the last dose of antibiotics, and then they discontinue the IV. They also obtain bloodwork to make sure the patient is not anemic from the surgery. And if those results-- depending on those results-- post-op day two, they may also need to draw another CBC.

If that lab is low, we are in contact with Dr. Cherry's office, either with him himself, the PA, or the nurse. Everybody has the contact information at any time, so that no matter if there's a problem at 7 am or 7 pm, the patient and caregiver are going to be satisfied that they're going to be able to get a hold of somebody, and therefore we are going to be able to get a hold of Dr. Cherry. Therapy also will start seated range of motion on post-op day one. They'll also continue to measure their active range of motion, passive range of motion each day.

The last and final day that the nurse is there is the post-op day two. They remove the hemovac drain or the On-Qpump, whichever is applicable. They obtain that last CBC. The ACE bandage will come off, and then the silver Ion dressing that is there remains on for seven days. At that point, the nursing aspect usually will then proceed to the next week.

Therapy will see them on Saturday for that third post-op day. So they're getting therapy four days in a row, nursing three days in a row. After the critical three to four days, then our frequency does change.

Nursing usually stays in until the follow-up visit, which is usually two weeks post-op. The frequency usually is two to three days a week the following week and then once as the final discharge day after the MD appointment. Each nursing visit, each therapy visit, you're doing the same incision check, therapy, measurements, to make sure that the patient is progressing as well as they should. If there any concerns along the line, again, we're in constant contact.

AMY HANCOCK: In summary, to look at the way we execute the care path for Dr. Cherry's patients and these orthopedic patients, we look at then our outcomes. We've been involved with this project with Dr. Cherry since last October, for a year. And we're really proud to say that, in tracking the hips and the knees, we're able to look at our average age of the clientele. That ranges anywhere from age 56 to 59 years old. The average length of stay of that patient is typically two and half to three weeks long.

Nursing is typically in with the patient 6 to 9 visits total, and rehab anywhere from 9 to 14 visits total for those patients. The amazing part working so closely with this surgery center directly, and establishing these Care Pathways and protocols as we have, is that we've been able to document a 0% re-emission rate back to the hospital, as well as no surgical complications. Once again we thank you from Advantage Home Health Services.

If there's any further questions or comments or feedback that you're interested in specific to these Care Pathways, or outcomes, and our patient satisfaction that comes along with that, please feel free to contact us directly. Our name and email and number will be listed at the end of this presentation. Thank you.

CHRIS MCCLELLAN: This is our patient arriving, and I want you to notice the time in the bottom-right corner. And it's 6:23 in the morning, and this is not her first time here. She's been here already to visit the anesthesia team. She is calm and relaxed. She knows exactly where she is.

And it's because she has been told, at least three times now, exactly what's going to take place today. She knows that when she arrives, she's going to check in, she knows the nurse is going to come get her and take her back to her area, and it's not an unfamiliar place. So therefore, right off the bat in the morning, she's already feeling very comfortable and ready for her operation.

And then she's going to come into the presurgical area, and again, she's already been here. She's been through this area already. It's not unfamiliar territory. There's not a bunch of people running around in the morning, trying to figure out what we're going to do, who's this person.

And usually once the patient gets in here, she's assessed by the nurse, and then I'll make my entrance to give another discussion with the patient. And again, this will be the third time that this patient's going to hear our conversation about what's going to take place. So I've just entered the room, and I'm going over it again, what's going to take place during the day.

And I've reviewed with her husband as well, so that he knows the game plan, and again, he's heard this already, multiple times. I'm going to mark her leg, which we typically do. And the next step would be our Anesthesia Team.

And they're going to roll in here, and our Director of Anesthesia is going to bring in his machine to start the nerve blocks that we do. And I'm going to lend this part over to Dave now, who's going to go ahead. He's our Director of Anesthesia, and talk to you about the nerve block.

DAVE BERKHEIMER: My name's Dave Berkheimer. I'm one of the CRNAs and co-founders of Same Day Joints. I would like to take some time and talk about the process, from the preoperative to the intraoperative and the postoperative processes that we'll be evaluating, and helping you guys start your own programs hopefully very shortly.

So let's go ahead and start. From the preoperative side, we initially started our process in a very conservative fashion. We talk about BMI restrictions of 40, H&Hs, preoperative evaluations. And we started initially with a Care Pathway that we established, that starts about when the patient first visits the doctors in the office.

And when we first determine that that patient is a surgical candidate, we then immediately drop into the process. That is a Care Pathway that we've established. That allows that process to go ahead and take on its own life.

The surgeons no longer have to worry about where that patient is in the process, and the patient can almost fluidly go through the process of seeing anesthesia, getting their home checks, and having their process for their preoperative evaluation taken care of-- which, by the way, should be done 7 to 10 days out at minimum. Preoperative testing, H&H, CBCs, lab work, urinalysis, EKG, we have all of those done.

If the patients have them performed within the last six months, we do accept those. So we're not real staunch about having processes or extra cost to the patient as far as a lot of preoperative testing. But again, we want to see those patients, and make sure that they're healthy and successful, and adequate candidates for our process and for our team.

So 7 to 10 days before all of our surgeries are done, that patient does a physical exam with me personally. I see that patient in particular so I can establish that their coexisting mortalities and morbidity are well controlled. And as we've gone through our first two years, we have continued to expand on our comorbidities and mortalities doing much sicker patients, I should say.

And again, as we've presented in the past, I think what you will find through this program is that this probably is the adequate process for even Medicare populations, which expands that health care economic venue quite a bit. And we can talk to that subject later as well. Airway, airway, airway-- a very, very important part of this is making sure your airway's adequate. This is outpatient ambulatory.

We do not have 23-hour observation capabilities. Patients cannot be admitted to the hospital. So far, 135 patients, and we have not admitted a single patient. We have had very, very minor complications. So I think that we've produced evidence to show that it's safer and more efficacious than a hospital setting.

Our techniques are very important. Probably the thing that has determined and made the changes to allow patients to go home within three hours have been the pain control-- multimodal techniques along with multiple regional blocks and anesthesia techniques that are ultrasound guided and very, very pinpoint accuracy and very specific. So if your anesthesia team is not capable of doing that, you need to educate them, get them up to speed. That's very, very key in this process. And again, as soon as the patient's seen in the office, as soon as the patient's seen here in our center, the education process begins. So we'll go from there.

If we want to talk about the intraoperative care, from an intraoperative standpoint, most of our patients, maybe all, make sure, of course, we have all of our standard equipment, standard protocols and procedures for disposables-- obviously-- all the implants, our visionary needs. It makes us very happy to have less equipment and have Smith & Nephew's in the building with their equipment. It is very, very user-friendly for an ambulatory setting.

I'll also talk about our proper patient identifiers. We're very, very strict. We're very, very careful. We don't do any wrong-site surgeries, because we are very specific about performing our blocks and our timeouts in a timely fashion.

All of our patients are identified by our surgeons before any of that's implemented. Positioning, preparation-- most of our total knees and our total hips, I would say only-- out of 135-- 2 patients with back fusions have not been done under spinal anesthetics. It is a short-acting, 90-minute spinal anesthetic. Periarticular injections are used, either in the knee or the hips, to maintain the rest of the pain control.

We've gone through quite a process over two years, going from controlled pain pumps, to multiple different periarticular injections to the one we currently have in place, which reduces the motor weakness and allows for great sensory blocks. So many people have come here and said we basically have created or found the holy grail in the respect of having that adequate pain control, yet not causing any motor weakness-- which is really, in the orthopedic setting, what you're really looking for-- we found that. And at the center here it has made all the difference-- reduction in PT home therapy, patients have pain scales of 0 to 2, even three days out, so it's been amazing.

Second-- or I should say third-- is hemostasis control. And again, there's been some literature out regarding the tranexamic acid we use. TXA-- no doubt about it, a gram beforehand, a gram after, intravascularly. Many different ways you can also administer the tranexamic, but I would say the way we administer it is reduction in blood use and blood loss by at least 7% to 10% or more. And again, the minimally-invasive surgical procedures, I can't emphasize enough, our surgeons-- Dr. McClellan and Dr. Cherry-- they use minimally-invasive surgical procedures, different approaches, lesson insult, and we have less tissue trauma and less bleeding. So from a postoperative standpoint, again very, very key is that we get the patient through the building safely.

And something that you have a consider is that Home Therapy and Physical Therapy actually has to get to their home and assist them getting into the building. So one of the things we found that was most challenging was getting the patients back to their home. We got them out of building safely and under pain control and no nausea and no vomiting, successful surgery, and then we would realize they had 14 stairs to get up to their home, so it was a little bit of a challenge getting them in. So now gate ambulation transfers, rapid-safe recoveries-- so we do have home therapy as well as physical therapy, meet them at the door, and assist them getting in the building.

We have a very, very aggressive post-op nausea and vomiting protocol that starts in the beginning. Again, a multimodal protocol includes post-op pain management and post-op nausea vomiting considerations when we're beginning the process, even when the patient hits our building with some preoperative medications-- nonsteroidal as well as some antiemetics. Very important you have the same communication with your whole team-- your surgeons, your post-op, and your preoperative team members. So I thank you, and I hope you enjoy your show.

So we start mid-thigh here, guys. Little ultrasound. We're looking for this arteriousus muscle, which we've found already. And the superficial femoral artery, which you can see right here-- superficial femoral arteries, arteriosus muscle, and here's saphenous nerve sitting perfectly where it's supposed to live.

And I'm going to give you a bee stings, sweetie, OK? I apologize. There's going to be a pinch and a burn for moment. One, two, three, big pinch. Lots of burning. Burn, burn, burn, burn, burn all the way down. I apologize for that burning.

And there's my needle, and we're right in the saphenous nerve. Now aspirate. We're going to inject a little local anesthetic in the saphenous nerve area. And you can see us lifting it up perfectly right next to the artery.

We're going to put another couple CCs right there. You can snap a photo right there as well, one of the live. That's perfect. Give me two right there. Yeah. Good.

So we got five CCs right on the saphenous completely covered. So now, the adductor canal we like to slide out a little bit here. And you can see the needle going now. The adductor canal is actually the tissue plane just below this sartorius muscle.

And as you can see, my needle is now just approaching it. And now we're in the adductor canal, and you can see us injecting local anesthetic. You can see the plane actually opening up. So there goes the local anesthetic, in between the sartorius muscle and the adductor. So there it goes, nicely out the canal.

Cool, man. So what we're going to do now is, neuraxilly we scan out or map out the spinal process for us. So we're going to map out her spine. It shows us the anterior opening and the inner spaces for us to easily access the spine for the spinal process, or for the application or introduction to the spinal. This makes it a lot easier for us.

So, Carrie, I'm going to set you up now, sweetie, OK? Oh, you're in Margaritaville, girl. Ready? One, two, three. We're going to sit straight up.

Good. And so, Seth is scanning right now horizontally, and you can see the sawtooth pattern on the ultrasound. And what you are seeing is some transverse processes. Now we've switched over so that we're crossing the cross section of the spine. And you can see, Seth's going to point out spinous process.

And right there is the opening. So you can see the anterior part of the cord right there. The ultrasound beam is going all the way through the spine, bouncing off the anterior vertebral body, and then reflecting back to us. So we wouldn't be able to see that far. So Seth's going to mark us out here.

I got the probe if you want to. So the dark line, up at the top, is the spinous process. So we're mapping out midline, and then we're mapping out laterally, and you're going to see us make a little 'X marks the spot' here. Perfect.

We're going to take a little gauze. I'm just going to clean this jelly off. And now we've got a great spot for us to go ahead and access the spinal.

KEN CHERRY: What I'd like to do is just briefly show you what we call our recipe for success, and then we'll get on with the show, so to speak. So the recipe for success is basically three parts. It starts with the Journey BCS knee. It also involves the use of VISIONAIRE patient-specific cutting guides, and then our Patient Education and Management Program.

The Journey II BCS knee is really a revolutionary knee, is a knee that was designed with the goal to achieve more normal knee function. When we look historically at patients who have had knee replacements, if you look at this graph-- a very popular graph-- light blue are control subjects and what they're able to do, dark blue is what total knee patients are able to do. And only 14% of total knee patients can squat, historically, satisfactory. And you can look all the way down this bar and see that we've fallen well short of what normal patient's activities are.

Another way to look at this has been done in the ULM study, and also in the *Journal of Bone and Joint Surgery.* But basically, most of you know that the premise is is that total hip patients improve their activities after replacement surgeries, and historically total knee patients decrease their activities. Up to 20% of total knee patients are not happy with their outcomes.

I believe, as we're going to show you tonight, not only everything that we fit together with the Journey knee, the this knee and its design is going to make major inroads into reducing those number of dissatisfied patients. Dr. Mark Snyder in Cincinnati has already done some revolutionary work showing that his post-op Journey total knee patients' outperform his total hip replacements. And that is published and available.

So to understand why knees don't work, I think we need to go back to some basic anatomy. We're looking at here a normal knee versus a conventional, fixed-bearing total knee. As you can see on your left, a normal knee exhibits external rotation and rollback. There are many physiological reasons for this, but the basic function is to improve quadricep's efficiency, improve patellar tracking, and allow for better motion.

The more conventional total knee, on the right-- as you can see as the video is running-- starts in a posterior position, undergoes what we call paradoxical motion, slides forward, never really rotates, and never really allows the quadriceps to gain its advantage. When you look at total knees, most companies do not try to and match anatomy. They make pretty much generic-type shapes.

As you can see in this slide, symmetrical joint lines with symmetrical implants result in a posterior sulcus. It definitely reduces inventory, but results in abnormal proprioception and this concept that we introduced called paradoxical motion. When you look at the slide, you look at a normal knee on your far-left standing. You look at the more traditional and conventional knees, you can see in both cases, the femur is starting way posterior to the normal axis. When you look at the Journey II or the Journey II BCS, you can see that the femur is positioned well anterior in a much more normal position to start.

Again, as a result of this, the goal was to designed a knee that is kinematically correct. This is a video study that has been shown time and again, that again shows the conventional knee on the left, and the Journey II BCS on the right. And as you can see, as you watch this move, it's amazing that the artificial knee performs much like the real knee. You see early external rotation around a medial pivot, and then late rollback of both sides to clear the posterior condyles and give you that really deep flexion that we're all looking for.

So just once again, this is kind of an overview, looking at the design components of a Journey II knee. If you look on the left, you're basically looking at how the polyethylene matches the lateral and medial sides. On the medial side, you have the normal concavity, and on the lateral side you have the convexity that allows that posterolateral corner to rollback. You can see the differences also on the femur, that it's much more physiologically shaped. These enhancements allow this knee to perform like a more human knee.

So again, you're going to see this very nicely demonstrated in the surgery. Dr. McClellan will demonstrate this, what we call tremendous mid-range stability because of design features. And also the anterior posterior stability that you cannot get with conventional knee replacements.

This Journey II BCS design provides for this anterior cam to resist anterior translation, anterior starting point, and then physiologic rollback. And we will demonstrate this to you in the operating room. These key components are what allow people to get up and trust their knee quickly and rehabilitate much more quickly with confidence.

It is a very robust system. It now has stems available and constraints available for bailout, but obviously our goal is to try to be as anatomic as possible. And usually we stick with the more kinematic options. But as you can see, there are bailout options available if you need them. So it is a robust platform.

We gained a lot of experience. This is a fairly dated slide. The first implant was placed in 2011, December. I'm proud to say I put the first one of these in.

At the time of this slide, there were well over 7,600 of these. I believe that number is now up to somewhere between 12,000 and 13,000. But obviously gaining a lot of information, a lot of data. More specifically-- I have said this time and again across the country-- these are the happiest patients I've had in a 20-year career.

I've used a number of other knee systems, I've been a consulting surgeon with other companies, and these people do the best. Our group-- I think this was as of June-- had done a little over 700 Journey II cases, over 171 with one-year follow up. The things that jump out are very a low length of stay-- that number is now down to 1.2 days-- we're not doing-- as you you'll see today-- a much higher number of these as outpatients, very, very good function-- even at discharge-- low amounts of rehabilitation requirements, and very little pain, and improved function. And I think that always should be our goal.

The second aspect of the recipe is the VISIONAIRE technology. This is the patient-specific technology. For those of you that aren't aware, basically we are using MRI, and-- what is considered the gold standard-- a long leg standing X-ray-- to design and create a knee to match the patient's anatomy and mechanic axis.

The engineer, by generating these three-dimensional images in parts, reduces the number of steps in the operating room, eliminating a number of decision making. However, having said that, I will tell you that of all the benefits of this system, I think this is the least benefit. This is great, it helps. A good surgeon knows how to do a total knee. But the information provided by this system will reduce soft tissue trauma and improve your patient outcomes.

Absolutely reduces the amount of instrumentation needed for surgery, as you can see in this slide. Absolutely, in an outpatient center, you can't afford to have multiple, multiple trays sitting around. You don't have the room. The picture on the right, limited number of instruments is certainly more desirable-- turnover is easier, inventory is less, you can be more efficient.

The VISIONAIRE plan-- I've said this many times-- it lets me know exactly what to expect. I can predict problems before they happen. As Dr. McClellan will show you, he's come onto this relatively recently, but you will see it. It's definitely less invasive, reduces our instruments, and I believe it's made me a better surgeon. It helps me think about knees different than I have in the past.

So again-- these are some examples of a picture-- but again, I know exactly what to expect with each plan. When you look at these plans and look at the numbers, you know what's going to happen. The plans are also very moldable. They're not set in one position. You can adjust them if you need to.

We're not going to go into the details of that for purposes of tonight, but I will tell you there are ways to use the VISIONAIRE equipment that will blow your mind. You have a dedicated engineer. And again, when you show this technology to patients pre-op-- as part of their pre-op education, and you show them that you're helping design a knee for them-- it improve their confidence tremendously. And confidence is a key into getting these patients out quickly.

I've done over 1,700 VISIONAIRE cases. And in my experience, these patients have less pain, shorter length of hospital stay, less physical therapy, lower blood loss. And this is an example of a one-month patient demonstrating tremendous flexion, ambulating independently, and this system proves this time and time again.

So basically, just quickly before we move on into the surgery again, our goal as good knee surgeons is to create balanced flexion and extension gaps. That's the goal. If you can do that, you're going to have a good outcome. Absolutely I believe the kinematics of this knee makes that outcome even more superior. But the goal of surgery-- whether you're a gap balancer, a measured resector, femur first, whatever-- is to obtain rectangular flexion and extension gaps.

This is just briefly an example of a VISIONAIRE plan. It provides you a wealth of information. These numbers, as you can see on the screen, are just telling you what you're going to take away from the bone as part of your surgical operation. When you combine that with your pre-op exam and you know the deficiencies-- in this case, the left-hand side of the picture as you face it-- has less bone resection and the lateral.

So it'd have to be accounted for in soft-tissue release to create a rectangular extension space. And as you'll see Dr. McClellan demonstrate tonight, when you understand these numbers, you do not need to strip the tibia, expose major portions. You'll be able to see great, put everything in, and you'll see how easily the knee is to balance.

CHRIS MCCLELLAN: Great. We're back to the operating room now. You can see our patient being wheeled in. She's already had her nerve block, and at this point in time we're going to get her set up to do the spinal anesthetic. And once we get set up here, Dave's going to go ahead and demonstrate what he does for the spinal.

DAVE BERKHEIMER: So as you can see, we're preparing the patient for the spinal. And this is most important, where the neuraxial mapping comes into play. You see that we have the patient's spine mapped out. As you saw earlier, this spinal procedure can take quite a few needle passes if you haven't actually mapped out the spine. So if you're not mapping out the spine, you really should.

So you'll see our technique here is a very short-acting, 90-minute spinal. Our surgeons are excellent, as we've talked about. Typically we're talking 30 to 45 minute procedure time for knees to hips.

And you can see we're introducing our introducer needle, 27-gauge pencil-point spinal. And we're going to drop in the mepivacaine, 2% plane. It's isobaric-- it gives me 90 minutes reliably. You're going to see some clear CSF coming out here very shortly. And it's very nice because we can rapidly position the patient, and it's very, very reliable.

So again, being isobaric, it's not going to move a lot on me. And 90 minutes gives me about an extra 20 to 30 minutes to play with, just in case we need any extra cuts or any extra time the operating room. But the spinal was key to the success.

So in a moment here, we'll be moving forward. But we're injecting mepivacaine, 2%. And typically, 40 to 45 milligrams is what we use to get that 90 minutes, depending on patient height.

KEN CHERRY: Chris, before we get started, I thought we would just talk a little bit about your patient selection today and a little bit about what all these papers mean on the wall. And then obviously we'll get into the surgical technique.

CHRIS MCCLELLAN: Great. Well, thanks for the introduction. This is a 54-year-old lady who's had pain for approximately two and a half years now. And she's had the injections, physical therapy, bracing. And finally, her life has been miserable, and she's decided to undergo elective joint replacement.

And she decided to do the outpatient program because of several options and reasons-- is that, one, she is a healthy individual, she has good home support, no major medical issues, and therefore she'd like to go with the outpatient program. And you can see her X-rays here in our VISIONAIRE plan. And the X-rays are here. Here's her VISIONAIRE plan, which we've already reviewed and obviously decided to go with this plan.

And some of things on here that I look for briefly are just the size of the implant, how it fits, the cuts I have-- which I expect to have those types of cuts in the operating room. And it helps me to plan for our intraoperative surgery by looking at these preoperative plans. And I could tell here how the implant's going to fit. And also it gives us our angles in the sizes that we have here.

And we have a little form right here that Dr. Cherry has implemented, that I utilize as well, and it works very, very well. And I think it's key to have a good outcome with the VISIONAIRE and the Journey II knee. So after review of this, we decided to go with this plan. And I know to expect going into here because of the values we have listed here. But it helps me really plan beforehand what to expect once I get inside.

So this is our patient here. We just had the patient prepped and ready to go. And I'm marking some lines here with regards to my incision. And I like to use two fingerbreadths above the superior pole of the patella. I try you just use one, two if necessary if I can't see, and right down to the tubercle itself.

KEN CHERRY: I think it's important to notice, you saw there, this patient has a flexion contracture. That was identified preoperatively and accounted for in the plan. Chris, I know that you're using a tourniquet. I find that I do my knees tourniquetless. I think it helps them recover, but you've not found that to be an issue?

CHRIS MCCLELLAN: I haven't so far, but certainly not outside the realm of me trying here in the future, though.

KEN CHERRY: Tell us a little bit about your approach.

CHRIS MCCLELLAN: So I like to do the approach inflection, it helps the skin easily move out of the way, and it helps with the dissection just do it by itself without having to have retractors in the skin, causing any kind of more soft-tissue damage. And then, once I get down to the capsular area, I'll then go ahead and extend the knee. And then I'll move more proximal and move up as much as I need to to get up just in the top portion of the quadricep, just above the corner of the patella.

And again, I won't go real far unless I have to. I would never compromise the position of an implant for a small incision. You can see here, the incision is pretty small. And we can go ahead and see the approach to the knee here.

KEN CHERRY: So, Chris, you're using medium patellar traditional approach to the knee. I really think that this is dealer's choice-- midvastus, subvastus. Chris mentioned the key is, you need to be able to see what you're doing to do the surgery adequately. I prefer a trivector approach.

It's adjusting to the substance of the VMO. But again, the key is exposure. Do what you're comfortable with. That will work. So tell us what's going on now, Chris.

CHRIS MCCLELLAN: So what I'm doing right now is, I like to clear the tissue from around the interior surface of the distal femur, because your guide's going to sit on there, so some of that soft tissue can impinge upon the placement of your actual guide. And then, here, what I'm doing right now, is I'm actually placing my AP axis-- which I'll also then go ahead and do the transepicondylar axis. I do this every single time on an MRI knee and/or a traditional knee. And it helps me verify multiple times throughout the operation that I'm appropriately axial rotated in regards to the femoral component.

KEN CHERRY: That's a critical point, that these blocks are very specific and very accurate, but they are no reason to turn off your mind in surgery. You need to use your visual clues. What we're seeing now is that the block takes into account the nuances of the patient's anatomy. The more deformed the knee is, as you can see, the better the block fits. Chris, tell us about your technique here.

CHRIS MCCLELLAN: So what I like to do is, I place the implant on here with a two-finger technique. And these lines that I'm showing you here are the lines that line up with the lines I have just drawn. And they actually act as another check for me to make sure I'm properly rotating. You can see here I'm really rocking this implant to make sure the guide sits under it very nicely.

And here I'm going to pin it. And I do it the same way every time. I pin one articular surface first. I'm still holding it with two fingers. Place two more pins in the top area to hold it in place.

And again, I'm still going to hold onto there. And I really don't have to. You probably could leave one, but we suggest two. I make another pinhole on the other side, pull this pin out, so that way, when we make this cut here, my assistant can put that pin back in there very easily.

KEN CHERRY: I think this is critical. We talk about the three-pin technique. That third pin keeps that vibrating block from moving at all times. Having three pins in place assures that your cuts will be accurate. So, Chris, tell us, you're going to complete your medial side?

CHRIS MCCLELLAN: So complete the medial side first, where the pin is absent. And obviously I'm going to go and let the saw do the work-- don't bend it, don't try to flex at all in the air-- it'll cut very nicely for you. And it's key to remove this piece of bone. Although it sometimes can be a little bit difficult, you want to get that out of there, because the next pin's going to go in and you don't want it to throw it into different hole.

KEN CHERRY: I think that's a key point, and this is something I've learned from my partner after doing a large number of these is, when you cut that first side, that piece can wiggle a little bit, and it can influence the way you place that pin. So getting it out a way and pre-drilling that, now you know you have that in the same spot, and you haven't moved the block at all-- little technical things that I think will improve your satisfaction with this. So, Chris, you've completed the cuts.

CHRIS MCCLELLAN: So if we--

KEN CHERRY: Do you measure your cuts to see that they're exactly what the plan told you they were?

CHRIS MCCLELLAN: I don't anymore, but honestly I used to. I think it's a good idea, when you first start to use the VISIONAIRE system that you should use it, and measure them, and actually it'll help you to trust the system over time. So we're just removing the pins now, and you can see the one hole there on the lateral side. And then we're going to go ahead and see the other hole.

And what I'm going to do now is, I'm going to show you that I like to check the rotation again. I'm going to check my holes, and I'm going to place something across these holes to line them up to make sure my rotation's good. And I'm loving that right there. So a third check to make sure that rotation is good, and I'm very happy with what we've had so far.

KEN CHERRY: So here you can see the four-in-one block is being applied to the femur. Some things about this, the journey system is a little different than conventional knees in that the femoral block is adjustable, and this is critical. I've received phone calls, physicians complaining the cuts are inaccurate.

This block, for the conventional instruments, can be adjusted anteriorly or posteriorly two millimeters. And what we're demonstrating is, if you have a heavy leg, and you're not paying attention, that block could be pushed into a different position. So you have to assess that it's in the truly neutral position, tighten it, and then watch that it doesn't get moved. Because it's designed to be flexible, the plan was designed to cut this block in neutral. Chris, tell us about your pin technique.

CHRIS MCCLELLAN: So the pin technique I use is what you're seeing here. I pinned one in the side, I pinned one in the front. And my partner does it a little bit differently, and I think I'm might have to copy him off it, but he can tell you what he does with his.

KEN CHERRY: So, again, I think this is dealer's choice. You can see there's multiple pinholes to choose from. I choose to use the middle holes, the one that Chris has in the front, and one in the back. And I do that for a number of reasons. One, the pin will not interfere with the saw blade in the smaller sizes. When you get to the smaller sizes, that medial pin can make it so you can't make the cut.

Secondly, you have two pins in the verging planes. You have your anterior-posterior pins diverging, anterior to posterior. You have the two pins on the block, which are straight in. So all four pins are in diverging planes, which I think gives you the best ability.

You notice with this system there's an additional cut. There's a fifth cut, which is an anterior chamfer. That is because of the uniqueness of this knee. The posterior condylar cuts are made in flexion. So the cut will looks smaller to you in the front of the knee than the back.

But the advantages of sloping that posterior condylar, number one, you get a better fit, you match the anatomy better. Two, it has better push-off strength. And you'll see, for the range of motion, by matching anatomy, you get a better range of motion. So what Chris is showing here is that the anterior portion of that cut will look smaller than the plan told you, but you really need to measure it at the posterior aspect where it's most accurate.

CHRIS MCCLELLAN: And you can see here, we are now just subluxating the femur. And I try not to make it-- to go back too far, because we don't want any kind of injury, any kind of tissues back here. But just enough to remove the meniscus and clear a pathway for the next guide, which is our tibial guide.

KEN CHERRY: Historically, the tibial block is the problem. This is where I get calls that it doesn't fit, it's not right. The tibia is harder to image, but if you look at what we're showing you here, the anterior face of the tibia has nuances-- not as many as the femur, but enough to create a custom fit.

My technique, or our technique, is we call it a two-finger technique. What you want to do is make that block fit that anterior surface of the tibia. Chris is demonstrating it here very nicely. Those two panels that are up on the plateau may not fit perfectly.

This is an MRI-based system, and on that hard collar or bone, it may not see it enough to give the engineer good information. But if you make that anterior surface fit, and use your reference points, this will work. Chris, do you ever use a visual alignment checker, or anything to check your cuts?

CHRIS MCCLELLAN: I don't now. I used to, just to double-check my alignment of the guides. And again, I think it's crucial in the beginning when you're doing these that you definitely do it, so you can convince yourself that you are in the right planes of all the cuts, and over time you will trust the system.

KEN CHERRY: Again, you see it's a three-pin technique. The block also has a notch there to assess the tibial tubercle as a reference point. But again, this is very technique-dependant. That three-point technique holds that block so it can't move when this vibrating saw is making the cut. So, Chris, describe what you're doing now for us.

CHRIS MCCLELLAN: So right now I'm making the tibial cut here, and I want you to take notice of the medial side there, if you can as we're doing this. So first of all, they're taking the pin out, taking the other one out to make cut on the lateral side. But we didn't have to strip very much because the plan-- I knew, that the gaps look pretty good on the plan, and that the amount of stripping necessary was going to be minimal.

So I didn't have to strip very much. And you can see there, as I made the saw cut to the posterolateral side there, I didn't go all the way deep there, because you can see the popliteus tendons sticking its nose at us. And if you take that saw blade back here, you could easily injured that.

KEN CHERRY: I think that's a great point. As I've said many times, I have no problem with cracking this piece off and leaving that little posterolateral corner. You have a nice flat surface, and you can then finish that cut under direct vision.

The block somewhat obscures, especially in the larger patients. So you can see there's the tendon. There's a little bit of bone to remove, but I think this is a great technique to crack that off and then finish it under direct vision. Chris, you're putting the tibia on. Tell us a little bit about that.

CHRIS MCCLELLAN: So the tibia, it has rotation holes that we've already drill before. And a lot of times they do follow that, but obviously you can move that around as you feel necessary. But a lot of times you'll find-- over time, again-- that these are going to be pretty much real close to dead-on what you want to use anyway. You could still use an external guide to make sure you're in the appropriate rotation and in alignment. But again, over time I haven't had to use it anymore, just because I've trusted the system.

KEN CHERRY: And the key is here, you see an anatomic tibia with a smaller lateral surface and the medial, that really allows you to get excellent coverage of the tibia to dial in your rotation. I believe that systems in use symmetrical tibial plateaus sacrifice position for sizing. So you can see, you've got great coverage on both sides. I think this is a key part of the operation. And tell us what's happening now, Chris.

CHRIS MCCLELLAN: So what I'm going to do now is, I'm going to check my flexion gap. And I knew in my preoperative plan that I shouldn't have much of flexion gap problem. However, I'm still going to check it, and I really cranked down on this [INAUDIBLE] splitter here.

And you can see there, I have a nice rectangular box in the flexion space, no asymmetry, and I was very happy with that. I didn't have to look and mess around for any kind of release to do. I knew ahead of time I was likely not going to have to do those.

KEN CHERRY: This is a key. I think people call this measured resection, and technically it is. But you can gap balance with measured resection.

And that's what we are showing you, that there is no fiddling with the flexion gap and adjusting the tension. It was predetermined, and we knew going again that it would be very close. Chris, tell us a little about putting the femur on.

CHRIS MCCLELLAN: So the femur in this system, the posterior cuts head up at a direction, as opposed to being a flat cut posteriorly. So you have to put it on at a really flexed position, and then bring your hand up into an extended position to get the implant to fit perfectly for you. And it's really key, because if you don't do that, you could certainly injure the femur. And the reason for doing this is that it gives us great, great flexion, and especially deep flexion.

KEN CHERRY: I think there was a really key thing you just saw there. Another beauty of this system is, you can adjust this femur with the trial on to decide where to put your box. You saw Chris move it a little bit, medially, because he liked the position. The companies that they have an artificial box preparation, that don't look like the femur, don't give you that level of accuracy. So that little tap was subtle, but I think it's really critical.

Obviously this is the box preparation. Fairly standard, but what we're going to want you to pay attention to in a minute is, once we remove this, I'm going to let Chris described what you see. But this is probably one of the biggest things that I believe is an advantage over anybody else in the market. Chris has more experience with other implants, so I think he can tell you his experience a little better than me.

CHRIS MCCLELLAN: So definitely, you'll see here, once we remove this-- when I move the instrument here-- and you can see that we've taken very little from the inner-condylar space. And look at that bridge of bone there, and I'll point out here. That is very important. Not only the fact that we're moving less bone, but also structurally-- less likely to have femur fractures, and in fact we're preserving some of the bone here.

KEN CHERRY: I think that's really critical in the smaller sizes. We're placing the collet. And now tell us about your--

CHRIS MCCLELLAN: So for the polyethylene, I think it's key to get-- you have to get deep, deep knee flexion to get the polyethylene in. And you'll see my technique here. And I'm just putting the implant in here, just the trial. And it's a little bit better here.

And my assistants are really raising up here. Lift the femur, flex it, put the polyethylene insert into there, and then bring it to extension. It'll pop right in for you every time. Now, if you recall, preoperatively, we had a nice flexion retractor-- I'd say five degrees. I knew that ahead of time.

And as Ken said before, these MRIs make you a better surgeon. They make you pay attention. And I built that into the system beforehand.

Now, what I do here is what I call the Belly Test. If there was any contraction there whatsoever, that knee will pop up with no problem. And you can see there, it was in full extension. Here we're in flexion, and you can see absolutely zero instability in deep flexion, mid-flexion-- which is always the pain with some of these implants. And of all the implants I've used, this Smith & Nephew JOURNEY II knee has, by far, the greatest mid-flexion stability that I've seen. You can see here, easily, I cannot budge this thing any planes of motion.

KEN CHERRY: One little tip, too, is you noticed when you do that technique with the tensioning of the flexion gap, pretty much you can ask for the polyethylene one size, one time, one trial, and you're done. You're not guessing 10, 11, 12-- you have a good idea. Chris, tell us about your patella technique.

CHRIS MCCLELLAN: So I still do an in-set technique. I'm not good with the free-hand, and the Smith & Nephew allows you to remove nine millimeters all the time, so there's no math to be done-- which helps make the surgery a little bit more efficient. And it's easier for me to do it this way. It's just the way that I perform it.

KEN CHERRY: You resurface all your patellas?

CHRIS MCCLELLAN: I do. I have resurfaced every single one of them.

KEN CHERRY: And I agree. I think it's very hard to have to explain to a patient why you didn't do this and you have to go back, even though, admittedly, it's small.

CHRIS MCCLELLAN: Now, here's a little tool that we use to remove the femur with. You're going to see here, this is a really nice instrument. Because you can't just use them mallet and whack off this femoral component, because you could easily injure the posterior condylars of this femur by removing it with a mallet. So it's a special tool here, and you want to wiggle it and flexion extension, and it comes right off for you.

KEN CHERRY: This is, again, another thing I-- I'm a big believer in efficiency of movement. And although we didn't show it, that single tool can allow you to disassemble the entire knee. And so, again, it's efficiency. This is critical. Tell us what's going on.

CHRIS MCCLELLAN: So here I'm checking, again, the extension gap here, and I have equal balance on both sides. I have that nice rectangular box you want to see here. So we saw it in flexion, we see it again in extension. I'm checking for some posterior osteophytes that may have been retained-- there are none.

KEN CHERRY: And I think that's critical. There was very little time spent balancing this knee. The time was spent making the cuts accurately and putting the implant on, but very little time. Chris, tell us what's going on now.

CHRIS MCCLELLAN: So this is the periarticular injection that we're performing. And we feel that no matter what injection you're going to use, this is the technique you want to do. We have a 22-gauge needle-- spinal needle-- and you can see we're injecting right into the periosteum. And you want to see that periosteal tissue, and/or the posterior tissue here, really bubble up like you saw there earlier.

KEN CHERRY: All right. So we're onto cement technique. Go ahead and tell us what you do that's a little different.

CHRIS MCCLELLAN: So I do use the antibiotic cement like most people do, but I actually mix my own. I've been mixing for about four years now. I use two packs of tobramycin per pack of cement. And I found it to be quite effective. There's a lot of good literature supporting it, and it's quite a cost effective and has worked well for me over the last four years.

KEN CHERRY: One of the questions we had from the earlier show is, do we use pain pumps, do we use Q balls, and we do not. With that anaesthetic technique that you saw Chris demonstrate, a local anesthetic, if you do a good technique, you don't need those things. And it's, again, dealer's choice. We use a cocktail that's specific to our center. It's our mix.

There certainly are commercial preparations out there, but the key is covering all the tissue that you've operated on. It's technique dependent. But with that, you don't need the Q balls, you don't need the femoral nerve blocks. As Chris said at the beginning of the show, we did that early on. But by data collection and performance improvement, we found that we don't need that.

So now we're on to the femur. Again, you see that bridge of bone between the two condylars, it's robust and you just won't see that on any other posterior stabilized knee. Chris, tell us about putting the femur on with the metal already on the tibia.

CHRIS MCCLELLAN: So again, obviously, this knee, you have to get a deep-knee flexion, because you don't want to potentially scratch anything, or do anything like that. But regardless, the same technique as I put the trial on with. I want to make sure I'm in a flex position, and then bring it to an extended position in order to protect the femur itself.

KEN CHERRY: And that was a nine-millimeter polyethylene. That's the tightest gap you're going to see. And you can see, even at that, at no time do those posterior condylars contact that tibial surface and injure or scratch the articular surface.

CHRIS MCCLELLAN: And again here, the same techniques as you saw with the trial, I get this started in deep-knee flexion, with my assistants pulling up and flexing the knee. And then bring it through an extension, and it'll pop right in place for you. And then you use the inserter to make the final connection.

KEN CHERRY: I think that's really key. You don't need to subluxate that tibia. Snap the polyethylene, and then put the knee through the trauma to reduce it. You could start the polyethylene-- the dovetail mechanism is very forgiving-- start it, bring the knee into extension, and finish it. And it works every time. What you see now is the final patellar preparation and cement. How about your closure technique?

CHRIS MCCLELLAN: So I still use an OPDS suture to close the capsule. And know that you do something different at this point in time.

KEN CHERRY: I use a quilt suture, a V-lock, a barb that we've run. I just think it gives you a water-tight closure. It's a little quicker. But again, I think that's dealer's choice.

CHRIS MCCLELLAN: And again, here's our technique of infiltrating the local tissue with our injection. And again, every few millimeters you want to inject the fluid and see that bubbling of the soft tissue, and you know you have the correct technique occurring. And again, I typically close with staples. I think Ken does this up a little bit different with the knee.

KEN CHERRY: Yeah. Again, I think it's all psychological, but I use a subcuticular quilt suture. I think if the patient looks at their knee and doesn't see staples, they think they had a little lesser operation.

CHRIS MCCLELLAN: So here's our dressing we're using. We you use the PICO dressing from Smith & Nephew. And as we know, most of us use-- or at least we do-- the silver lom-based dressings, which work great. They're absorbent dressings. This has the added benefit of not only that, but also a suctioning device to help remove some of that fluid, that serious fluid that can occur within the first few days.

It really helps with swelling, it really helps with the cosmesis of the incision, and it's very, very inexpensive to use. And we think that's important, because it can really help decrease the amount of swelling people have, drainage issues, possible readmissions.

KEN CHERRY: I think that last point was probably the most critical. You saw earlier, in our Home Nursing Agency slide, zero readmissions. This may look like fluff or added expense or luxury, but I really believe that every measure of this, every little thing, adds into the no readmissions, the no complications.

So sealed wounds have been shown in the literature to have a lower incidence of infection in total knees than traditional wound management. Negative pressure is even better. So this is what we're showing you here.

CHRIS MCCLELLAN: And now, this is our patient here. She's an hour and a half post-op. You can see, it's 10:36 AM. And again, hour and a half post-op, we're just checking her here in the recovery room.

She's got great range of motion of her ankle already, she has no pain at this point in time, and she actually has motor motion of her right leg, which is key. It's kind of the holy grail of anesthesia we've been looking for. She has great pain relief, she's got the ability to move her quad, the ability to move her ankle. And it's on a dead, phantom leg that we're used to having with the nerve blocks.

Now she's being wheeled into our second part of the recovery. She's much more awake, and she's not nauseated, she's not sick, she's drinking water already, and again, hour and a half postoperatively. And the reason is, it's multimodal.

We have preoperative cocktails we use, we're using Decadron IV preoperaratively, Decadron postoperatively tomorrow morning, and zero narcotics-- IV or spinal-- absolutely zero narcotics. She will get narcotics maybe tomorrow or the next day. Oral only, but never any IV in narcotics, which we think is key to a patient recovery.

KEN CHERRY: As Chris mentioned, I think that that's critical. One of the things I get asked is outpatient surgery urinary retention. We obviously see it in the hospital, but avoiding those perennial narcotics, we just haven't seen it. It may be eventual, but it's certainly going to be much more rare than you would see in a conventional setting using the perennial narcotic medication.

CHRIS MCCLELLAN: And you can see here, she's now going to start to get up, two to three quarter hours post-op. And she's comfortable. And again, she already knew today she was going to get up at this point in time. She didn't believe it at first, but after multiple discussions, she knew exactly what was going to take place. And she knew she was going to do this.

So already we have embedded in this patient that she's going to do it, and somebody that's just what needs to be said to a patient, that you're going to do this. And you're going to see her walk here.

Now, we talked about process improvements. We used to use femoral blocks. They were great. No pain, but they had to drag the leg like a stroke victim.

After meeting multiple times we said to ourselves, we gotta find a better way. Let's make it better. Let's make it easier. And by doing that, by meeting together, and coming together with the anesthesia, this is the regiment we've come up with to work really well.

And she's going to walk a little bit more here. And today, she's going to walk today more than she will in the first 24 or 36 hours in a hospital, without question. Any patient who's had both the outpatient and inpatient program will tell you, that was a huge difference.

KEN CHERRY: I think one of the keys, again, you see the patient's getting ready to leave, but if you remember at the beginning, our Home Nursing Agency was alerted. They've been called, patient is leaving. They're going to be sitting in her driveway waiting for her when she pulls in.

That is a tremendous confidence booster. It's going to help her get into the house safely. And again, they're all little details, but they all are necessary in order to accomplish this successfully.

CHRIS MCCLELLAN: And you can see here, she can do some straight leg raises for us here. She's two and three-quarter hours post-op. And again, Ken was right. These nurses not only are taking care of the patient, they've made the phone calls that we have in the protocols at a certain time to make the calls.

So here's our final sign off to the patient, and she can be heading home on her regiment program. But maybe you should hear from the patient herself. She'd like to give little testimonial.

PATIENT: I had a few people who had already done this procedure here at the center and heard good reviews. And I liked the idea that I can come in here, get it done, and go home the same day. I like that. I believe healing at home is much easier than being in the hustle and bustle of a hospital.

And it's quieter at home, loved ones there all the time. That's what I like. I feel really good. I feel a little fuzzy in the head yet. But it's only what, been two hours, something like that. But as far as pain, this knee, this leg, nothing hurts. It just feels like it's a little restricted, because there's a brace on in and stuff, but that won't take long to come off.

My expectations are great. I won't live with the pain. I had pain in it constantly. I'll be able to be more mobile, get back out, do some walking for exercise, and be able to do better in my job.

I think it's a good thing. Within an hour, I'll be going home. Great. I feel wonderful!

SPEAKER: Good. We're glad to hear that.

PATIENT: Thank you very much for all your help.

SPEAKER: You're welcome.

KEN CHERRY: OK, well, that concludes our video presentation for the evening. We have a little bit of time left. We can entertain questions. So we'll go right to some questions that have come in over the last hour and a half.

And the first question was, do we have backup sets available in case the blocks don't fit-- as far as from Smith & Nephew-- and the answer is absolutely. I trust the system. I've done almost 2,000 VISIONAIRE cases.

I've changed one femur in my entire surgical experience, but you still need backups. So you need a set of instruments there in case something does go wrong. So the answer is absolutely, and I would never do a case without backup. Chris, do you agree?

CHRIS MCCLELLAN: I agree, yeah. We definitely have the backup systems. It's an absolute necessity.

And these are things we talked about before about your facilities. Do you have everything ready to go for events like that? So of course we need to have backup sets for, god forbid, things were to fall, you lose something, something didn't arrive on time, so we always have to have backup sets.

Next question is, do we use tranexamic acid? Absolutely, we use it. It's part of our protocol. We use it preoperatively a gram. We use it another gram postoperatively when we're closing.

And we think it's been a game changer. I mean, the blood loss in transfusion has been absolutely minimal. And I can't remember last time we transfused a patient with a knee replacement.

KEN CHERRY: I agree.

CHRIS MCCLELLAN: Another question from the audience. In a day where lawsuits are rampant and more visible to the patient that they were even two years ago, is there any fear of the unknown when it comes to any liability associated with the fresh subject matter of outpatient replacements? Well, I think that in any setting lawsuits can happen. But these patients are so well-informed of what's about to take place that they trust us, they know that complications can occur-- inpatient, outpatient-- and I think as long as we explain to them exactly what we're doing, I think the lawsuits are going to be-- we feel that would be low, because we explain to them more in the outpatient program than we do for the inpatient program.

KEN CHERRY: I think that's key. Communication is critical. One thing we didn't cover is that we talked to the family postoperatively. Typically we'll call that night. I usually call six or seven o'clock at night, how are you doing, how are you feeling?

Here's my phone number tonight. If you need me at any time, call me. I have had zero calls from patients at night.

I get more calls from nurses in the hospital for Tylenol orders than I've ever had from a patient in an outpatient setting. And I think if you make them comfortable, and you make yourself available to them, we all know the communication is the key to tort reform. And so I think it's critical, what we do, and I feel protected.

CHRIS MCCLELLAN: Yeah. I would agree. Given the patients our cell phone numbers has been an outstanding thing to do, and they feel that if they need to get a hold of us, they can.

We do this a thousand times. It's their first time, it's their day, and they should always feel comfortable to give us a call. So they never have the chance of, I couldn't get a hold of you, I couldn't get through to your office. They can simply call our cell phone numbers. Another question, are you still using drains in your total knees?

KEN CHERRY: This is great. This is the beauty of this. We've had this discussion just recently. I do use drains.

Even with the TXA, I think a hematoma of even a small degree is uncomfortable and blocks movement. The issue is that some agencies will not remove drains. And so Chris had a different experience that forced him away from drains, because the patients had to come back to the office to have the drains removed. We now have an agency that will remove the drains at home. So I do, I use them all the time.

CHRIS MCCLELLAN: Right. How do you change your block techniques when a patient has a history of back surgery? I'll leave this question for Dave.

DAVE BERKHEIMER: Occasionally we'll see a patient-- I think we discussed that earlier-- about 2 patients out of the 135 patients had previous back fusion. There is a way around that. Obviously we can resort to the old fashioned femoral blocks, sciatic blocks. Just put the leg down and do the patient under a light sedation or a propofol drip.

The second technique, obviously, is a backup with general anesthetic. So two patients have actually opted for that because they've had a fused spine. So certainly you're not going to access that. So that's simply the new aesthetic techniques. General anesthetic is just as reliable and safe.

KEN CHERRY: This next question is one of my favorites. As we said, our administrator-- who really could speak to the insurance and the cost-- isn't present. But I'm going to let Dave, as our Director of Anesthesia, who's very familiar with this.

The question is, can you discuss the cost to the insurance difference of a total knee between a hospital and surgery center? So, as you saw, we've done 130 cases with primarily one health care provider. And I'm going to let Dave tell you what difference we've made 130 cases.

DAVE BERKHEIMER: Yeah. So this is a great question, and we discuss about publishing our data here in many fashions. And perhaps a health care economic journal would be the one that we should first publish it in, because as much as we're all concerned about the patient's quality of care, I think the almighty dollar obviously still drives this. So we know that on average, in our community, we're looking at about a $30,000 to $35,000 inpatient cost for a total knee.

Our recent costs for our total outpatient joint program are $13,000 to $13,500. So you're looking at about a $20,000 cost savings per patient. So recently we saved, in our 135 cases, about $2.8 million to our local payer. So yeah, we have a little bit of attention in our area, and do you think this has legs to take off in your community? Absolutely.

Is this the Affordable Care Act? Well, maybe this is what we're looking for. It's accountable care, it's efficient, it's safe.

Is there higher risk, is there risk or concern that we're going to be sued? Absolutely not. We follow the same protocols, the same policy and procedures, the same evidence-based practice medicine that you're getting in an inpatient setting. And I would argue that it's actually safer for even the septuagenarians and the octogenarians that we're going to see when Medicare finally approves this.

It's less insult to the patient, they don't get the hospital saves, they don't have the iatrogenic 400,000 patients a year getting sick or killed in the inpatient setting. So when they do go home, they're safer in their in their own climates, they don't see that ICU psychosis, they don't see MRSA, they don't see VRE, and they certainly don't see angry nurses giving them medication errors. So it is by far going to change what we do.

KEN CHERRY: I think that's great. And Dave touched on one thing about Medicare. If you tune into the 7 o'clock, our administrator-- who I think is really an expert on this-- was asked about Medicare.

And he sits in on the panels with the Medicare people at with this point. And he believes that in the next 18 to 24 months, Medicare is going to have a diagnosis code, and this is going to be a recognized procedure. Because they can't ignore evidence-based medicine.

CHRIS MCCLELLAN: Another question we had was, do we use the drain plus the PICO device. And in some cases, yes, and I think Ken may do it all the time. But I definitely have used both, and it makes a tremendous difference.

KEN CHERRY: Yeah. So the drain, the PICO, or a silver nitrate, SilverIon dressing, again I think it's dealer's choice. I just think the negative pressure wound management will give you a much more cosmetic scar and a happier patient.

DAVE BERKHEIMER: Another question we have on this side is, can we share our multimodal pain protocol? Certainly we can share that protocol with you. Again, our contact information will be at the end of the show. So certainly feel free to contact us.

Some of these protocols are rather extensive-- they're weight-based. Many times I'll reduce the amount of local anesthetic or even medications that we're administering based on the patient's age or the comorbidities and mortalities. But initially, what we do in a multimodal, we use a nonsteroidal-- some type of Lyrica, Celebrex, and OxyContin-- often we originally are giving IV Tylenol, a gram preoperatively. But those costs have shot through the roof as well. You may see that in your facility right now, where IV Tylenol has gone to $37 a bottle.

We're going to go over to PO Tylenol, one gram preoperatively, postoperatively, and then post-op day one I believe they're also getting a gram. So we'll just go to that, because the bioavailability of Tylenol at two hours, IV NPO are the same. So you're just basically throwing $37 a bottle down the drain for that, and it really hasn't shown to really reduce any pain. It's a nice antipyretic.

As far as Reglan, Pepcid for the antiemetic protocol, those are all medications given intravenously as soon as the IV is in place. Our patients do return home with an intravascular access for the first 24 hours to get those antibiotics and some of the medications, such as that IV Tylenol and possible Toradol, as need be. The anesthesia protocol is again, very extensive. It's been something that has really, really matured over the last two years from sciatic and femoral blocks, blind procedures to ultrasound-guided specific blocks, to something where we, again, really were concerned about the motor weakness. And an outpatient, if you want to talk about liability, the biggest concern for us was having a fall.

Well, we went through periarticular injections and we've come up with a cocktail that works really, really well. Post-op days two and three were even still seeing pain scores of 0 and 2, 3 and 4 when their physical therapy is actually working on them. That cocktail is a mix of local anesthetics and adjuncts that have been in the anesthesia literature, and they're evidence-based.

Again, it's weight-based and it changes based on each patient. So if you're welcomed to contact us, we'd be glad to get back to you, and certainly assist you guys getting your programs up and running. Because if you don't do it, someone in your community is going to do it.

CHRIS MCCLELLAN: Another question we have, have you made a decision on whether or not to go to oral antibiotics postoperatively? I still think we should do the IV antibiotic postoperatively. There may be a trend to do that in the future, but at this point in time, I don't think we would do that.

KEN CHERRY: I don't think we've really discussed that at length yet. But I think it's like anything else. If you have protocols, evidence-based protocols established, you meet and discuss it. As Chris had mentioned earlier, in our committee, if you want to make any change, you have to come for the committee and you have to bring evidence-based medicine. You have to back up your request with the literature.

And I will say I'm not real familiar with that at this point. We typically give one dose post-op. It's weight-based, but that's it. So pre-op and one dose post-op is traditional.

OK, before we go on, this is a good opportunity to address any questions that you may have up to this point. First question comes in-- and we're going to give to Dave, our director of anesthesia-- and it's asking us, please walk us through your preoperative labs, swabbing for MRSA. What, if anything, is done differently for these patients? So Dave?

DAVE BERKHEIMER: There's not a whole lot that we do different. As a matter of fact, we're very, very conservative on our lab work and our preoperative testing processes. There is a preoperative CBC chemistry profile, urinalysis, and EKG on all of our patients. Most importantly is the preoperative personal visit to check the functional status, the airway, as we talked previously.

All of our patients have to be MRSA free to come to our outpatient surgery center. That's kind of a Department of Health, in the state of Pennsylvania, requirement. So we don't swab anybody, extra swabs or do anything unusual, unless they've had a history. Again, most of our patients are MRSA free.

Nothing exceptional though. Any lab work, EKGs that are done within the last six months, we do accept those. We have a lot of our total joint replacement patients that are returning to us rapidly, some of them even within eight weeks. So we do not repeat those labs if they're all within normal limits previously. So thank you for the question.

CHRIS MCCLELLAN: Another question we have from the audience is, how did you educate the insurers, and what ultimately convinced them to issue billing codes for reimbursement for the procedure and plan cost? And for that question, I'll defer to our CEO Dave Davies.

DAVE DAVIES: Thanks, Chris. The engagement insurance companies really happened as a product of our relationship as a practice with the insurance companies constantly looking for ways to decrease their payment levels for the episode of care related to total joint replacement. So the insurers were engaged by virtue of the fact that we already had established relationships. But what was really convincing for the insurers is when we were able to demonstrate that we could maintain a high level of quality and reducing complication rates and reducing the episode cost for the care delivery to these patients to the extent-- to between 40% and 70%. That got the attention, primarily of our primary commercial carrier-- Highmark in our marketplace-- and certainly was something that they were prepared to address in terms of payments levels for our reimbursement for the procedure at the facility level, as well as covering the carve out for implant cost, so that we could make it financially feasible for the surgical center.

KEN CHERRY: I'm going to let Chris handle this. But the question is, how many calls post-op from the center office to the patient-- I'm assuming that means after the surgical encounter-- and what is the frequency and intervals for the calls? This is in addition to your Home Health Group. And what follow-up protocol do you use?

CHRIS MCCLELLAN: Well, the follow-up protocol is, we actually have a two-week follow-up appointment and a six-week follow-up appoint for all toe joint replacements-- either inpatient or outpatient. The frequency of calls can vary, but it's very, very small amount of phone calls for several reasons. One is that we have a lot of education both prior to and afterwards as well. And also that every patient has our cell phone number, so that if there are any questions they have. But to be honest with you, there's not many calls that take place postoperatively, unless there's an actual complication.

A question from the audience, do we used tranexamic acid? Yes we do. As part of our protocol for both the outpatient and the inpatient, we typically follow the Mayo Protocol. It has great literature behind it. And we use a gram preoperatively, and then we also use a gram while we're closing the wound.

KEN CHERRY: Yeah. I think, as we all pretty much know, that's what I'd call a game changer, because it's absolutely reduced the transfusion rate in total joint replacement surgery. Next question is, what are your tactics to getting them to commit to the surgery center operation? I would tell you there are no tactics. I think our tactics are-- sometimes we have to talk them out of it. The word has spread on this.

I think, Chris, you'll agree with this, we have people coming in, and they're actually disappointed if they can't do this. I think, again, when you sell to them the concept of the surgery is more simplified, it's predictable, we're going to be there, here's what we're going to do, and do you want to be in the hospital, or do you want to be home in your own bed. I think the program sells itself. Would you agree?

CHRIS MCCLELLAN: I would agree. I think that it's also the patient's psychology. Who doesn't want to recover at home? I mean, I'd rather be at home.

I'd rather be there in my own surroundings, my own food. And psychologically, people recover quicker, they do. They recover much faster, and they know this has been a completely patient-centric driven.

KEN CHERRY: I think the take-home point from tonight though is, they're not comfortable going home if they don't know what's going to happen. And I think Chris said time and again, the information that's provided, the assessments by the nursing agency, their ability to be there when the patient gets home, all those little things-- the stability of this knee, the no pain, the holy grail of anesthesia-- again, this is a big undertaking. But you can't do it without fitting all those parts together.

CHRIS MCCLELLAN: Are the custom jigs always accurate? Do you ever have to revert back to the original set of cutting guides?

KEN CHERRY: I've done almost 2,000 of these now. Chris I've convinced now, this is the way to go. I can tell you that I trust them implicitly. The interaction with the engineers is great.

I think if there's a problem with that, it's going to be something with the imaging center. But you have to communication. And if you have communication with your engineer early on, if there was something that they didn't interpret the way I did, it's just a matter of working through it.

You can't expect that maybe the first five cases are going to be perfect, because there's a learning curve. There's someone looking at that, making their human assessment of what the anatomy is, and then communicating that to you. So the key is being involved, looking at them, providing feedback.

But I can tell you, in almost 2,000 cases I've changed one femur, I occasionally change the size of the tibia. But in all those cases I've only ever change one femur, and I have never bailed out to conventional instruments. Chris is-- I know your--

CHRIS MCCLELLAN: I would agree. I have never changed a femur, and I have sometimes changed a tibial size. And sometimes they're just a little bit picky about where it sits. But other than that, I've never had to revert to conventional instrumentation.

KEN CHERRY: We have a question. Do you CPM at home? That just makes me cringe.

I think that is absolutely terrible. These patients have to be responsible for their care, and that is a bailout. So, no.

CHRIS MCCLELLAN: No.

KEN CHERRY: No, no, no, no, never, ever use CPMs at home or in the hospital.

CHRIS MCCLELLAN: How is the patient charged different for inpatient versus outpatient? I'll leave this to Dave Davies, our CEO, to answer.

DAVE DAVIES: Well, the difference between the inpatient and outpatient charge is based on whatever the fee schedule is for those institutions. But I can tell you from a payment perspective, patients who now have, in many cases, high-deductible plans, are now experiencing cost savings in the center like ours, versus what they would otherwise be forced to participate with in a hospital-based setting. The episode cost, as we described earlier, is substantially different, as patients now have the opportunity to participate in some of those savings by having the surgery done in a center like ours.

KEN CHERRY: This was a question for Dave for the spinal. Is it Ropivacaine, is it spinal or intrathecal?

DAVE DAVIES: It is Mepivacaine, 2%. So it's not Ropivacaine-- Ropivacaine's going to give you a four to six hour block, that's much too long. So it's Carbocaine or Mepivacaine, 2% plane, isobaric. It is a spinal, which is intrathecal, and that is going to give you 90 minutes reliably.

KEN CHERRY: And the follow-up to that was for Dave Davies. Do you have arrangements with local payers or regional payers? How would you describe that arrangement?

DAVE BERKHEIMER: Our prayers are generally the regional payers. Highmark, which is the Blue Cross Blue Shield Plan of Western Pennsylvania, is our primary commercial payer. We do not have contracts with a variety of other smaller commercial payers, just by virtue of the fact, that most of them have not accepted-- do to the fact that, policy wise, Medicare does not approve this procedure on an outpatient basis. So many of those payers have been less enlightened and have decided not to allow some discretion in paying for these procedures.

KEN CHERRY: I think I'll just follow up, because I get asked that a lot, Dave. Do you see Medicare eventually coming on-board with this? What do you see as the next five with this?

DAVE BERKHEIMER: Currently, much of the data that we're collecting is actually part of studies that are being performed by Medicare to look at approving these types of procedures to be performed in a freestanding center. I would anticipate that within the next 18 months to two years that you would see Medicare approval for these procedures. Which I think, then, opens a door-- as both you and Chris have indicated-- a population that could very well be served by this kind of procedure.

KEN CHERRY: Do you have a lot of out-of-network patients?

DAVE DAVIES: We do not. Currently Highmark is the primary commercial payer. These are in-network payments that we participate in. We do not participate at a network.

CHRIS MCCLELLAN: The question here, how has this affected your relationship with the local hospitals? I'll leave this question to Dave as well.

KEN CHERRY: Yeah. We're going to leave our administrator to handle that one, too.

DAVE DAVIES: Yeah. Local hospitals, as you can imagine, aren't thrilled with the level of complication that this sort of procedure provides. But as you know, and has been indicated by Chris, progress is progress.

And most of our hospitals recognize that this is the kind of thing that they're going to have to become adapted to. One of the things that they benefit from, quite frankly, is that the clinical protocols and the clinical advancements that are part of the process that were established at the surgical center can be applied in a hospital-based setting as well. And that includes such things as more efficient surgery, less time spent in a hospital, and reductions in complication rates and cost that would potentially be absorbed by the hospitals.

KEN CHERRY: Thank you for participating. We've enjoyed the time we spent the night. And again, this is something that the people in this room are very passionate about. We make ourselves available, and we would love to see this concept expand nationwide. Thank you again.

CHRIS MCCLELLAN: Thank

DAVE BERKHEIMER: Thanks.

[MUSIC PLAYING]