

Editorial

"In My Experience...Lessons from Over 16,000 Outpatient Joint Replacements"

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The author reviews lessons from over 16,000 outpatient joint replacements.

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I've been in practice since 1987 when I joined my fellowship director, Tom Mallory, at Joint Implant Surgeons, now JIS Orthopedics. If we think about how we approached patients in the 1980s and early 90s - all the patients were seen as sick patients. We brought them into the hospital the day before surgery and they were seen by Internal Medicine. At that point, they hadn't been prepped or primed, if you will. They hadn't been optimized, which is our current terminology. My length of stay when I started was about 10 days. We put the patients in a mini intensive care unit (ICU). We

wrapped the knee patients up in big cotton Robert Jones dressings and kept them immobilized in the mini ICU for about 2 days. We used Charnley compression buttons for our hip patients. Those are foam pads that looked like giant marshmallows. The best part about them was they held the dressing in place; the worst part was if you put them on too tight then the skin didn't look so great underneath them.

We started to evolve. We moved away from keeping patients immobilized and got them up and walking, but we still had lengths of stay of 5 days. Then we did this little

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Dr. Adolph V. Lombardi, Jr., of New Albany, Ohio, was born and educated in Philadelphia. He received his Bachelor of Science degree from Saint Joseph's University, medical doctorate from Lewis Katz School of Medicine at Temple University, and residency training at Albert Einstein Medical Center. Dr. Lombardi pursued two fellowships in Adult Hip and Knee Reconstruction: one with Dr. Thomas Mallory at Joint Implant Surgeons in Columbus, and the other with Dr. Gerard Engh at Anderson Orthopaedic Institute in Arlington, Virginia. Joint Implant Surgeons, the group he joined in 1987, has grown under his leadership into a multi-specialty practice and is now known as JIS Orthopedics. Dr. Lombardi's vision for a physician-owned musculoskeletal specialty hospital spurred development in 2003 of New Albany Surgical Hospital, which is now part of Mount Carmel Health System. Ten years later he and his partners opened their first of several ambulatory surgery centers, White Fence Surgical Suites, where they have performed over 16,000 outpatient arthroplasties. Dr. Lombardi is dedicated to research and education, having authored hundreds of peer-reviewed articles and chapters, and has served as chairman and faculty at countless educational programs worldwide. He is a Clinical Assistant Professor in the Department of Orthopaedics at The Ohio State University. He holds multiple patents related to instrumentation and implants, and he is a surgeon designer of several implant systems. He is a reviewer for numerous orthopaedic journals and has been an oral examiner for the American Board of Orthopaedic Surgery since 1997. Dr. Lombardi served as President of The Hip Society in 2011 and The Knee Society in 2017. He is Deputy Director of Current Concepts in Joint Replacement. He has been a volunteer surgeon for Operation Walk and Team Hope in Motion, traveling to Nicaragua and Guatemala. In 2011 he founded Operation Walk USA to provide charitable orthopaedic care across the United States, and is its Executive Committee President. For his humanitarian work, Dr. Lombardi received an honorary Doctor of Humane Letters degree from Ohio Dominican University in 2011 and the American Association of Hip and Knee Surgeons Humanitarian Award in 2015.

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shift where we would keep patients in the acute hospital for 2 to 3 days, then discharge and readmit them to another part of the hospital that was a skilled facility floor. The hospital was profiting both ways, first from the acute care and then from the subacute care. When the government and payors figured that out, we had to transfer our patients out of the hospital, which actually was better for me since I didn't have to do rounds on 50 people. I continued working in downtown Columbus, at a nice hospital, but still downtown in an urban setting. I then came up with the idea that maybe we should have a specialty hospital.

In 2000, I put together a proposal for the hospital to create a specialty hospital that would be 50% owned by physicians. Well, the hospital didn't like that. We had to break off, start our own limited liability corporation, get our hospital going - and we did. With that I had 40 beds, 8 ORs, and was running a hospital, and I had no room for everybody if I kept them there for 3 to 4 days. Enter minimally invasive surgery (MIS). If we look at the onset of minimally invasive surgery era, the best thing to come out of it was not the small incision but how to control the patient's postoperative pain and how to make that recovery journey better for the patient. We started using all those techniques and making our incision smaller, but also improving perioperative pain control. Soon we were able to get our length of stay down to 2 days, then a day and a half. By around 2010, I'm looking at the patient the next morning and saying, "Hey, how are you feeling?" And they're saying, "I'm great." And I would say, "Well, all right, we'll get you breakfast, and you'll be out of here." And I said to myself, "Why is this patient still here? Why isn't the patient home? They could have slept in their own bed last night."

We started thinking can we do outpatient arthroplasty? We set up a little program at our specialty hospital to do outpatient surgery. A great advantage I had in my practice was that I had always worked with one general medical group for preoperative optimization. I would send that group all of my patients, no matter who sent them to me. Sometimes I annoyed other general practitioners, but they never wanted to come to the hospital anyway to see their patients. The general medical group doctors would clear the patients for surgery, optimize them, and then see them postoperatively. We started that program around 2011 or 2012, put our toes in the water, got people home same day, then looked at ourselves as a group and said, "Why can't we have our own facility?" We then built a facility called 'White Fence Surgical Suites' that opened in June 2013. The first thing we did was sit in a room, put all the instruments out and asked ourselves, if we were going to perform a hip replacement, what do we really need to do that hip replacement? What can we live without? We thus streamlined our instruments - for our hip replacements, knee replacements, shoulder replacements.

That's only part of the operating room (OR). We picked experienced people to help us. Probably my best move was bringing in a nurse administrator I knew well who was working and consulting, going to different hospitals setting up orthopedic practices and orthopedic floors. She came through and we realized that the company we had hired to

help us build this facility didn't understand we were doing total joints. We don't have just 2 trays but might have 5 trays for a single case. They had put a little mini washer sterilizer under counter, which was completely inadequate. You need to think ahead and ask, "Okay, what is my goal? Is this going to be an orthopedic facility? Are we going to do joints? Are we doing spine? What then is the capacity we need in central sterile?" Another thing to consider is if the electricity goes off, is there a backup generator? We added a generator, but we hadn't thought about it initially. Another consideration is the square footage. One of the big mistakes people make is to build a monstrosity with perhaps five ORs. You don't need that many because the more ORs you have, the more people you need to staff it, and if an OR is not being used for at least 7 to 8 hours a day, it's not profitable. We did two ORs and there were five surgeons in the practice. We could each get a day and use two ORs, or at least that was our simple thought initially.

You must build the facility so that your preoperative bays can become your postoperative bays. We put seven of those dual-purpose bays in, as well as four walled bays so that we could move patients from what we call phase one to phase two recovery. While the patient is still in phase one, the nurse can bring the family member ahead into phase two and instruct, "Okay, we're done with the patient's surgery. Everything went well. Here's the game plan. Here are the medications Dr. Lombardi has prescribed. Here's what you need to do. Do you have your post-surgery appointment? et cetera." The design aspect of the facility is really important, building the place in such a way as to ensure an efficient, smooth operation.

The next thing is partnering with the right anesthesia group because they can make or break you. Our rule is that the OR is for the operation. If you want to put a block in, it should be done in preop. You want a spinal, do it in preop. We've got everything there for you to do it. We discussed what blocks and doses will be used for our knee patients. We use an adductor canal block and an iPACK (infiltration between the popliteal artery and capsule of the knee) block, as well as a local. For our hip patients, we use a short-acting spinal because we want to get them up and moving. The goal is to do the operation. Hopefully, our patients are as comfortable as possible postoperatively so we can discharge them in a reasonable amount of time. Our average length of stay now is 4 hours. They're in and out. I get to see them multiple times because I see them preoperatively. As soon as they come out of surgery, I'll walk by phase one and ask how they are doing. When they get to phase two, I've already gone out and talked to them. I say, "Hey, everything looks good. Have they gotten you walking? Yeah, okay? Do you have your instructions?" I get to be a little more personal with the patients at the outpatient center than I can in the hospital setting.

Patients walk in our facility. It's a very nice place. It's very comfortable. It has a nice waiting room. They get great service and care, from the receptionist to the nurse who brings them back to the OR to the postoperative nurses. Everyone is very nice and professional, and they're all on your team. They're great people and they're all working for

you. That was the culture at the specialty hospital when it was physician-owned because they were working for me then. Unfortunately, the government changed the law, we had to sell the hospital, and now they're working for a healthcare system. I'm still there because I'm president of the management company, but it's not the same relationship. In the outpatient facility, we started slow and initially avoided selecting patients who had more than one comorbidity. However, as we got more comfortable with doing patients in the outpatient setting, we expanded to increasingly complex patients. We've done over 16,000 outpatient arthroplasties. We've done all age groups. We've had at least 200 patients who are age 80 or older.

We do have an advantage that some facilities don't in that we can provide overnight stay if it's needed. That option has been utilized by about 3% of our patients, but half of that was for convenience. If I operate on someone after four or five o'clock, and they live more than 2 hours away, if they express any concern about traveling home, we offer to keep them overnight because we have a call system and people who care for them that night. Most of the time they're left early the next morning before I even get in, usually by 6:00 am if they've stayed for convenience.

Now our routine at new patient appointments is I tell the patient that it's an outpatient procedure. I ask who they have in their family to help if they come by themselves. If there are significant others with the patient, then I direct questions to them. People are now coming in asking me, "I'm going to go home, Dr. Lombardi, right? Because Uncle Al went home and Aunt Susie went home. I'm going to go home, right?" And I tell them, "Yes, you're going to go home that day." It really has become the norm for our entire practice. What lessons did I learn in the beginning? I cheated there a little bit because I learned a great deal from our experience with the specialty hospital. You've got to have everybody on the team speaking the same message. Everyone, from the cleaning person to the receptionist to the nurse, everyone has to be saying, "This is an outpatient procedure. You're going to go home the same day. You're going to be fine. We've done this." If your people are always giving the same message, then everything's going to be fine. But that means one other thing - you have to believe in your heart that you're doing the right thing for your patients. I believe that in changing the mantra to treating the well patient, not the sick patient, because if you come to me, you need your knee or hip replaced. If you're sick, I can't operate on you. I've got to get you medically optimized and you have to be in a healthy state. If you're in a healthy state, then all I'm doing is putting an implant in your knee or your hip, and the best thing for you is to get up and move.

Regarding venous thromboembolism or pneumonia, I just don't even think about those issues anymore. It's a different patient I'm working on now, from when we had them stay in the hospital laid up for 2 to 3 days. You would put a Foley catheter in them. I kept an intravenous line in when I first started. It was a project. The whole paradigm has changed. Outpatient arthroplasty is here to stay, and I think you can manage it. Personally, I am managing 95%



Figure 1. Typical instrument set up for a primary total hip replacement. Instrument sets have been streamlined for each hip, knee, and shoulder replacement to include only essential items needed to complete the procedure.

of my patients in this fashion. Even patients I take to the specialty hospital are going home that same day. Fifty percent of the patients I take to the tertiary hospital because of concerns of the general medical group can go home the day of surgery. If they have no adverse event during the surgery or immediately postoperative, they go home.

It has been a steady and fulfilling journey to outpatient joint replacement surgery.

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Figure 2. In one of the seven dual-purpose preoperative bays at our center, the anesthesiologist is administering a short-acting spinal to a patient about to undergo primary hip replacement. The patient will be brought back to the same bay after surgery for phase one postoperative recovery. The rule our center is that the operating room (OR) is for the operation, which maximizes efficiency and room turnaround, while reducing room traffic and infection risk during setup. Regional anesthesia including nerve blocks and spinals is administered in the preoperative bay.



Figure 3. After initial recovery from anesthesia in phase one, the patient is wheeled to one of four walled phase two recovery rooms. There nurses will discuss the discharge plan with family member or caregiver, review medications, get the patient up and out of bed, and assist the patient to ambulate to the bathroom. These walled rooms also accommodate patients requiring an overnight stay.

