

# **HANSARD**

**NOVA SCOTIA HOUSE OF ASSEMBLY**

**STANDING COMMITTEE**

**ON**

**HEALTH**

**Tuesday, May 9, 2023**

**COMMITTEE ROOM**

**Investment in Robotics**

## **HEALTH COMMITTEE**

Trevor Boudreau (Chair)

Kent Smith (Vice Chair)

Chris Palmer

John White

Danielle Barkhouse

Hon. Brendan Maguire

Rafah DiCostanzo

Gary Burrill

Susan Leblanc

### In Attendance:

Judy Kavanagh  
Legislative Committee Clerk

Gordon Hebb  
Chief Legislative Counsel

**WITNESSES**

IWK Health Centre

Dr. Douglas Sinclair

VP Medicine, Quality and Safety

Nova Scotia Health Authority

Dr. Gail Tomblin Murphy

VP Research, Innovation and Discovery, and Chief Nurse Executive

Eileen MacGibbon

VP Operations, Central Zone

Dr. Greg Bailly

Physician

Dr. Gail Darling

Physician

Nelson Ventura

Director of Innovation

Dr. Tara Sampalli

Senior Director, Implementation Science and Evaluation, and Global Health Systems  
Planning, Research, Innovation and Discovery



House of Assembly  
*Nova Scotia*

**HALIFAX, TUESDAY, MAY 9, 2023**

**STANDING COMMITTEE ON HEALTH**

**1:00 P.M.**

CHAIR  
Trevor Boudreau

VICE CHAIR  
Kent Smith

THE CHAIR: Order. I call this meeting to order. Thank you, everyone.

This is the Standing Committee on Health. My name is Trevor Boudreau. I'm the MLA for Richmond and Chair of this committee. Today we will hear from the Nova Scotia Health Authority and IWK Health Centre regarding investment in robotics.

I'd ask everyone, if you have a cellphone, to please put it on silent. I will start with the introduction of committee members. I'll ask committee members to introduce themselves for the record, stating their name and constituency, starting with MLA Smith to my left.

[The committee members introduced themselves.]

THE CHAIR: For the purpose of Hansard, I'll also recognize the presence of Chief Legislative Counsel Gordon Hebb and Legislative Committee Clerk Judy Kavanagh.

As I mentioned just briefly earlier, the topic today is investment in robotics. What we're going to do now is have the witnesses first introduce themselves, and then once they're introduced, if any have remarks, we'll do the remarks after introductions. I'll start to my left here with Dr. Gail Tomblin Murphy.

[The witnesses introduced themselves.]

THE CHAIR: At this time, we'll open it up for witness remarks. I believe Dr. Tomblin Murphy has remarks.

GAIL TOMBLIN MURPHY: Thank you so much, Chair, and also to the members of the Standing Committee on Health. Thanks for this opportunity to talk today about a really exciting opportunity we have in Nova Scotia, and that is investment in robotics.

I look forward to this group sharing with you, through your questions, some details first about some of the groundbreaking work that's happening in Nova Scotia and how we're leaders in this country in robotics; how it's impacting the lives of people in Nova Scotia, our patients and our families; the economic impact that it is having in terms of retention as well as recruitment of clinicians who want to work here and to be trained and use robotics; and also how grateful we are around how quickly we have moved into the role of global leader in robotics.

We're truly thankful to have Dr. Sinclair, as well as Dr. Bailly and Dr. Darling, here today. They definitely have brought surgical as well as clinical leadership.

From B.C. to Newfoundland and Labrador, I think it would be fair to say that people are noticing the innovative technological solutions. It's not surprising to see why. In a very short period of time, we have five surgical robots, and there have been 1,000 surgeries to date. We have lots of information that we can share today.

We have the da Vinci surgical system, the Medtronic Stealth Autoguide for neurosurgery, the Medtronic Mazor X System for neurosurgery, and the Stryker Mako, both at the QEII Health Sciences Centre as well as the Dartmouth General Hospital, for orthopaedics.

Let's talk a little bit more about this. We don't have Dr. Dunbar with us today. He was unable to come. He would have been otherwise. We have done over 144 Mako cases to date: 90 at the QEII - and this is focused on orthopaedics - and 54 at the Dartmouth General. In fact, it is this minimally invasive surgery and technology that is being used on total knees, as well as hip replacements.

When you think about what some of the impacts are - and I'm sure you're going to ask many of those things today, but to have that personalized medicine, something that focuses on you, as an individual - those smaller incisions, those reduced lengths of stay, less scarring, and reduced blood loss during surgery are big. When you think about getting people back on their feet and enhancing and improving their balance as well as their longevity, as well as other things, like readmitting people and the costs that are associated to have revisions done to some of these things.

You are going to ask many questions. Many of them, I hope, will talk about patient impact. Not that long ago we were able to celebrate Dino Di Quinzio - who actually met Dr. Dunbar - who had a lot of pain. He did work where he was down on his knees in the cold - a pipefitter. In fact, he went home after receiving a full knee replacement. I think what he would say is, how great is it when I can now go back out shopping with my wife? His wife, Teresa, was pretty pleased on that.

Not only does it enhance the impact on people's lives, it also can be life-saving, and that is incredibly important.

What I would also like to suggest, and we know from our evaluation from our research, is that clinicians are trained in robotics. They want to stay. They are not going back to anywhere where there aren't robotics, so this brings some of the top minds. It's more than surgeons. We have teams who are wrapped around these surgeons - people, for instance, who are physiotherapists, occupational therapists, nurses, and many others who are very key to this field.

As we move forward, we see ourselves as leaders, not only in the surgery but in philanthropy and the donations that are coming in to support our research and innovation in this part of the country. In fact, the QEII Health Sciences Centre Foundation, as well as the Dartmouth General Hospital Foundation, have been incredibly supportive of and through donations - you'll hear more about those today. We will be pleased to tell some of those stories.

The government's Action for Health plan is clear, but we need to do certain things. The three things that we believe robotics are making a difference in are around retention and recruitment, access to care, and outdated infrastructure.

As we explore these today, we're happy to talk about each of those issues. Thank you very much for this opportunity.

THE CHAIR: Thank you, Dr. Tomblin Murphy. Were there any other remarks?

Dr. Sinclair.

DR. DOUGLAS SINCLAIR: Just speaking from the IWK Health Centre perspective, certainly in pediatrics, the present status of robotic surgery would be very limited. We don't do that type of surgery, largely because of the special requirements for children.

Again, as Dr. Tomblin Murphy will tell you, there's all kinds of exciting work going on and certainly potential down the road. The same with our gynecology surgery - that's the non-cancer surgery. Again, you'll hear some of the exciting robotic work, but in

some of the, shall we say, more routine gynecology surgery, not yet. But there's lots of potential, lots of work ongoing. We hope to be part of this program as it expands.

THE CHAIR: Thank you, Dr. Sinclair.

Any further opening remarks? Okay, seeing none, we'll begin the question-and-answer period of our meeting today. I think the clerk went over how it works. There will be questions asked by the members, I'll introduce you, and your light will come on. Witnesses can speak at that point.

Each caucus gets a first round of 20 minutes of questioning followed by up to 10 minutes, I think, of questioning after that, a second round. We'll try to stop at around 2:40 so that we can do other committee business at that time. At that point, if you have closing remarks, you can do that as well.

Normally we start with the Liberal caucus, so I'll look to them to begin questioning. I see MLA DiCostanzo has her hand up.

MLA DiCostanzo.

RAFAH DICOSTANZO: Thank you, Chair, and thank you for the opening remarks.

I'd like to just say from the bottom of my heart that I know that Dr. Dunbar would be here. We are very sorry for his big loss. I was there, actually. I have known his parents for over 30 years. He is an amazing forward-thinker who brought a lot of technology, especially . . .

HON. BRENDAN MAGUIRE: And a great father.

RAFAH DICOSTANZO: A great father and husband, but also an amazing doctor who we should be very proud of. Our heart goes out to him for what he's going through right now. I start with that.

I also wanted to thank the three foundations - the Dartmouth General, the QEII. It's amazing the focus on robotics and what they've done, really - a lot more than what governments have done in the past - are the foundations that, really, we need to thank today for the money they've raised and for the donors. We must say that out loud and thank them.

Last but not least, I'm very happy to hear about Dino. I've known Dino for 35 - 40 years, and not only did he go back, he retired and went back to drive a school bus, and the kids love him. Dr. Dunbar gave him that as well. These are the three, and I will start with my questions.

My first question is: How are the operations that are using robots being prioritized, the surgeries? Is there a process, and are they being given priority over the old method of operating? If you can just let us know how they are chosen and what percentages of operations are done by your robotics.

THE CHAIR: Is it open to all witnesses?

RAFAH DICOSTANZO: I would like an answer from whoever is knowledgeable in that field.

THE CHAIR: I'll look to Dr. Bailly, and if anybody else has anything to add after, just give me a heads-up and we can add you as well.

DR. GREG BAILLY: It's a good question. I think it's important that everybody in here understands what robotics is, because it's a little bit - when you think about what's happening in the OR, who's doing the surgery, essentially, we've had - I'll speak on the da Vinci robot. The da Vinci robot focuses on oncology or cancer cases, primarily in urology, and we do prostate cancer and kidney cancer. Currently in those particular cancers, it's pretty much doing 100 per cent of the prostate cancer surgery, and I would say about 80 per cent of the kidney cancer surgery that requires a partial nephrectomy, and that means removing part of the kidney and leaving the remainder of the kidney behind.

For those very large tumours, other kinds of kidney cancer, we would be taking the entire kidney out, and we would be doing that laparoscopically, which is also minimally invasive. Our open surgery that we do in urology - and we do about 350 prostates a year - our open surgery really has gone away with respect to prostate cancer. Kidney cancer has been pretty much replaced. Robotics has replaced laparoscopic surgery for partial nephrectomies, so we do very little open surgery for kidneys as well.

For gynecology, the priority's also oncology, of course, and it's primarily for uterine cancer, although there is a move into ovarian cancer. The priority in that particular patient population is those women who are overweight or obese, who have a much longer course in hospital, a much more difficult time having the surgery done in the conventional way. Quite often, those women were not receiving surgery; they were being treated with radiation because they were not good surgical candidates. Now the priority is being given to women with uterine cancer, and uterine cancer is the most common cancer in women. Thirty per cent of women who present with uterine cancer would be considered obese with a BMI greater than 40, and 80 per cent are greater than 30, which is also in the obesity range.

They've done about 200 surgeries in the last four years and two months, and many of those patients would not have been able to have surgery, so they're prioritized for women - and men, on our side - women and men who have these malignancies. That's really the standard of care. It's pretty much everywhere in the country in terms of academic



tertiary care centres. Centres of excellence are doing robotic surgery for those particular ones. There's an expansion, and we probably will get into that, with other subspecialties as well.

Currently, the last four years, the priority has been cancer. That would make up about 95 per cent of the surgeries that are done robotically in Halifax for the da Vinci. I can't speak on the orthopaedics or the - and perhaps Gail could add something.

[1:15 p.m.]

THE CHAIR: Dr. Darling.

DR. GAIL DARLING: I would just like to add that in answer to your question about how we prioritize patients, there are certain indications, as Dr. Bailly has just said. There are multiple more indications for robotic surgery. We are just limited by the availability of the technology. We have one da Vinci robot. The da Vinci can do body cavity surgeries, so chest and abdomen surgery. If we had more robotic time, we would be doing more robotic procedures.

The procedures that are specifically benefited by a robotic approach are complex procedures. A partial nephrectomy, as opposed to taking that whole kidney out, is maybe a little more straightforward (Interruption) I defer. Also operating in the pelvis - that's why the prostate, why gynecologic procedures, and why particularly these very obese women because it is not possible to do minimally invasive operations on them because they are just too big. Then they have to have an open operation, and then they are in hospital a week or 10 days. They have more complications. With a robotic hysterectomy for endometrial cancer, they can go home the next day. We're even looking at sending them home the same day. That would not be possible without the robot. As we have more robotic capability, we will expand into doing chest operations - thoracic, lung cancer, that sort of thing.

RAFAH DICOSTANZO: Actually, you're leading me to my second question. Are we using those robotics to their maximum? Is it because we don't have enough machines? Is it that we don't have - whether it's beds, whether it's staff, or whether it's nursing? Are we using the robotic machines to their maximum? Are we using it at 30 per cent or 50 per cent of what it can do? If you can let me know where we are in the usage and the percentage of - if it can do more.

GREG BAILLY: We could be running the robot more hours per day and per week than we currently are. As with many of the challenges in the health care system now, it really comes down to people, the people who are required to run it - which would be nursing, technicians, physicians - the nursing and the beds that are required to have the people go afterwards, the post-recovery; there are many cogs in the wheel.

We're using it almost five days a week now, but we could be doing some extra cases if we had more people to help participate in the teams that are required to support robotics. When we started the robotics program in March 2019, we tried to estimate how much we would be using it, what our need would be. We underestimated it, and that's because something happened that's inevitable, and it has happened at other places, and that's called centralization of care. That means that when we started doing robotic surgery in Halifax, much of the oncology, or cancer, surgery that was being done elsewhere in the province - and sometimes elsewhere in the Maritimes - was being funneled into Halifax so our demand went way up, and our activity went way up.

For instance, to address some of the shortcomings of human resources, the province, thankfully, has supported the hiring of another robotic surgeon who will be joining the urology practice in the Fall. That's the first urology position since 1980.

The demand is there. We could run more with more people, more nurses, and more beds. Hopefully, as we see health care improve over the next three to five to ten years, and we address some of these issues, we can facilitate that. For the da Vinci, I think that we could easily run two robots full time.

Just to give you a quick background, in 2018 when we proposed getting the robot, there were already 31 robots in Canada. The only academic centres in Canada were Halifax; Kingston, Ontario, where Queen's University is; and Manitoba. Since that time, they have them as well. We now have 40 robots in Canada. We were pretty late to the table getting a robot, but since we've gotten it, we've caught right back up. In most centres - and Doug and Gail can speak on their experience in Toronto - most centres around the country now have two or three or four robots - big centres.

GAIL TOMBLIN MURPHY: To Rafah's question, which I think is very key, what we are seeing, as we now have the number of robots that Dr. Bailly has shared, and some of them newer than others, is we've done over 1,000 cases, as you know. If I add to that the QEII Health Sciences Centre Foundation, as well as the Dartmouth General Hospital Foundation, the extent to which we've got over 1,500 donors who have put their lives, their money, behind robotics. That's really important. The \$100-million We Are campaign of the QEII Foundation, a percentage of that is focused on robotics. Where I was going to go with that, Rafah, is when it comes to people and it comes to resources.

As the chief nurse executive, I must say that what nurses are looking for is innovative ways to deliver care. They want to be involved in different things. They want to be involved in state-of-the-art types of things like robotics, and what we see through the investments, for instance from the QEII Foundation, is that about 20 per cent of that actually will come back, as it relates to the research and innovation. With more innovation, we are able to recruit more people to come and also to stay. We are seeing, through innovative things like robotics, health care workers want to be involved in that.

RAFAH DICOSTANZO: I know that we've actually lost doctors because we didn't have the technology and they went to the bigger centres. It not only attracts nurses, but it attracts doctors, which is very important. What I didn't get was an answer. The machines that we have - I'm going to call them machines - at what percentage of capacity are they being used right now? Do we know? Are they being used at 60 per cent of their capacity compared to what they are being used in the U.S., for example, for the same machine?

GAIL DARLING: Good question. I think it's probably being used at about 80 per cent of its capacity, limited only, as Dr. Bailly said, by human resources to run the machine. Of course, if we want to run it more, we can run it seven days a week. We could probably use it even more, but I think that people need their time to recover. Faculty, staff need time off. To Dr. Bailly's point, we could certainly use at least two robots, even just to cover the urology and gynecology practice, not even beginning to bring in the new work: the colorectal surgery, the thoracic surgery, and head and neck surgery.

RAFAH DICOSTANZO: That brings me to the next question, which is the hip and knee. I was hoping to ask somebody who actually works on those. The wait times, right now it's 843 days in Halifax for a hip replacement. That's one of the examples that I have here. It was in the election promise to have wait times down to the national average of 18 months. Where are we with that, and was that a realistic goal to have announced during the campaign?

GAIL DARLING: Everybody is very concerned about wait times. I think it's a big source of moral distress for doctors and surgeons. I would point out that before the pandemic, the wait times for hip and knee replacements were actually almost at the national average. Obviously, like everything else, it was thrown off course by the pandemic. We're really only now getting back to normal. Even though we still had slowdowns because of COVID-19 earlier this year, our wait-list is down by 16 per cent just in this past year. The target was to do 2,500 more cases. That's all cases, not just hip and knee cases, and we've done over 5,000. We are making progress.

With regard specifically to the hip and knee patients, traditionally those patients would have stayed in hospital one or two nights at least. We're now doing a huge majority, 75 per cent, as day patients. They come in, they have their joint replacement, and they go home on the same day.

The people who are waiting a long time right now are the people who couldn't be done as day patients. Because of other medical issues, they would have to stay in hospital overnight. That's what we call long waiters. Now that we have the beds opened up from COVID-19, we're in a position to start getting those patients done as well.

With the strategies that the Nova Scotia Health Authority has used, where we're doing the straightforward joint replacements primarily at Dartmouth General and the

complex or revision joint replacements at the QEII, we're able to really increase the throughput of first-time joint replacements, if you will, at Dartmouth General. We now have four orthopaedic surgeons there doing arthroplasty surgery. We also have arthroplasty surgeons at the QEII. We are impacting and we have a lot of confidence that we're going to bring that wait-list down to the national average very soon. I think it was a realistic position to take.

DOUGLAS SINCLAIR: Maybe just another comment to amplify that - when you look at surgical wait-list times, they require multiple things. Dr. Gail Tomblin Murphy and her team have developed an e-referral system that's really quite revolutionary that will funnel research. As Dr. Darling has said, it's that management of the wait-list. Surgical robotics is a very exciting area and has excellent outcomes for those patients who get it, but let's be clear: That's a very small percentage. The surgical wait-list issue - I shouldn't say almost another topic, but this is a component that - we did have a previous session on that. We could talk more, but I think the surgical wait-list issue has multiple components, of which robotics is an important but only one piece.

RAFAH DICOSTANZO: I'm going to keep it on the political part, and I apologize for that. The election was during COVID-19, so they knew the limitations, what COVID-19 was doing, and they still announced that. Is that realistic? That was my question. Also, if you think it's going to, can you give me an approximate time so we can give them an extension of that promise? You said soon, but do we expect soon to be to get it to the national average? That's what I'm hoping. If you can just maybe end it with this until my second round.

THE CHAIR: Ms. MacGibbon

EILEEN MACGIBBON: As Dr. Sinclair said, I think it is really important to talk about wait times for surgery in a broad-based way. Robotic surgery is a strategy that enables us to have better use of beds, better use of facilities and sites, so that we can perform surgery in the most appropriate setting and use our settings as optimally as possible. To your question about wait times and how long it will take, this year we have a very aggressive plan for the achievement of, as Dr. Darling said, 2,500 additional cases. We're on track to meet that target. Our intention is that for hips and knees and their wait times against what would be considered national average or national targets, we should be seeing those kinds of results by this time, say, next year and then the next fiscal year. We really are moving at a pace that's much different than we have been over the past three years due to COVID-19.

RAFAH DICOSTANZO: I just want to say thank you. I'm sorry to give you a hard time, but I really wanted to make sure that we're on track with that. I have a few more questions, but I guess I can leave it till when I have more time.

THE CHAIR: I see MLA Leblanc's hand up. MLA Leblanc, your 20 minutes will start now.

SUSAN LEBLANC: I just wanted to know if Dr. Sinclair recognizes this robot from the IWK Health Centre. (Laughter) Is he still around? It was a thrilling moment when I went to the blood clinic at the IWK and this guy was programmed to talk to my daughter. It was really fun. It helped us get the blood drawn, I guess.

I wanted to pick up on a couple of things Dr. Bailly was talking about because I just find this super-fascinating in terms of the women's health aspect. I want to ask a couple of questions around that. Just to clarify, if a woman has too high a BMI, so is considered in obese categories, then she was not able to get a surgery for uterine cancer, ovarian cancer because it is too risky and therefore she was just getting radiation. Therefore, would you say the case is that people who are in high BMI categories are having worse outcomes, in terms of those cancers?

[1:30 p.m.]

GREG BAILLY: There are basically two groups. There were women who were obese enough that they couldn't have a laparoscopic procedure and they would require an open procedure. With an open procedure, instead of going through three or four small holes, you are going through an incision maybe this big. That requires a long length of stay in hospital. There is good evidence and there are lots of publications on the increased risk of bleeding, post-op recovery pain, wound infections that go on and on. There are a lot of costs associated with that. There is also some outcome on cancer outcomes, cure outcomes and that kind of thing.

The second group were the patients who were too large in body size to undergo an open surgery, too big to do an open incision. The obesity factor was much higher. Those patients were given radiation and/or chemotherapy.

This is a little bit out of my area of expertise, but this is my understanding. I've talked to gynecologists about this. That would be considered an inferior treatment to having surgical removal of that, but that was the safest thing for them. Now those patients can be treated with robotics and be out of the hospital the next day, so they are getting a better treatment.

SUSAN LEBLANC: You said about 30 per cent? Just nod on that one.

GREG BAILLY: Yes, 30 per cent of women with endometrial cancer meet the criteria for morbid obesity, 80 per cent for obesity.

SUSAN LEBLANC: Would you say that women's health is now vastly improved because of this da Vinci robot?

GREG BAILLY: I would say the management of uterine cancer has vastly improved.

SUSAN LEBLANC: I just wanted to clarify that. I also wanted to know - you also mentioned that if - and this is outside of the scope of just women's surgeries - in terms of the da Vinci robot, you could see two robots being used full time. If that was the case, let's just say we had the two robots, what would we need to have, on top of that, to make that happen? What impact would that have on wait times and health outcomes? How would it relate to the general surgery wait time lists that we're looking at?

GREG BAILLY: In oncology, regardless of what specialty we're talking about, there are wait-lists and wait times. We work on wait times. There are standard national averages of what's acceptable to make a patient wait to have surgery. It's different from wait times or wait-lists for, let's say, knees or hips.

For oncology, we try to live within those wait times. In order to do so, with the robot we have now, we try to maximize the use. We have several surgeons who are trained to do it. They can work only so many hours a day and so many hours a week. For example, the two robotic surgeons we have now each do two to three days of robotic surgery per week, sometimes in combination and often on their own. They have to see patients on other days to manage non-surgical things.

Currently, I did ask for the wait time. In four years, we've done 960 cases on the da Vinci robot. In the last 12 months, we've done 307. Our efficiency of cases has gotten much better. We're doing more volume per time, and we've maxed out the surgery that these guys can do.

We still have, as of yesterday, as of last night, 107 patients waiting for prostate or kidney surgery on the robot. I have two or three surgeons to do them, who are working full time. Each week we get more and more referrals. If we hire more people, more surgeons, and have more nursing support staff, anaesthesia, and also the capital to purchase more equipment and the operational funding to run it, then we can do more.

I think that many centres around the country have also - not just in the last year, but years ago - gotten into doing colorectal surgery for the exact same reason: much, much better for the patient, much quicker recovery, better outcomes, less bleeding. Thoracic surgery and cardiac surgery - we haven't even delved into that yet. If we do, which we want to, I assume that we will have two da Vinci robots running full time.

SUSAN LEBLANC: I guess all of this points to this big question, which is, if this is all the case, then why do we rely on hospital foundations to raise the money for these robots? Does it not seem like this should be part of the standard of care that we now have come to enjoy but also come to rely upon?

I'm wondering if anyone - perhaps Ms. MacGibbon - can you speak to that? It seems to me that relying on health foundations or hospital foundations creates a huge inequity in health care in Nova Scotia.

For instance, I represent a community where one elementary school has all kinds of money to buy the best playground equipment in the world, but the rest of the elementary schools in my riding have crappy playground equipment. There's no special fundraising happening, and they rely on that small amount from the Halifax Regional Centre for Education.

How does that comparison work with this type of technology in our hospitals? If the Dartmouth General and the QEII - which are great, don't get me wrong; they're great organizations - if they're able to fundraise better, does that mean people in Yarmouth and Cape Breton are not going to have this type of technology and these better outcomes?

DOUGLAS SINCLAIR: I think it's an excellent question. As you can imagine, at the IWK Health Centre, we have this debate and discussion all the time. Our new emergency department is government funded; previous pediatric ICU and neonatal ICU were fully fundraised. I think that's what's unique about the robotics program, in that what we really want to do, under Dr. Tomblin Murphy's leadership, is say - and this is what donors want. They want to be involved in innovation and what's new. So the challenge is that we need - the foundations have a really important role to kind of test out some of these new technologies.

As Dr. Bailly said, where we are now with robotics, it's moved beyond that stage. There are some areas, of course, like orthopaedics, but as Dr. Bailly said - and I had the same experience when I was at St. Michael's Hospital. It was over 15 years now from when they started. The robotics area in urology and gynecology is well established.

You're right. That's an area that should be moving into more capital funding, and the foundation should be focused, as they always have been, on the innovation side.

It's always a balance. We've always been underfunded capitally in our health care. I think we've seen changes in the last few years across Canada in that, but it's an excellent point. How do you get that right?

EILEEN MACGIBBON: I just want to add a few points. It is an excellent question, Sue. I think what's most important to remember is that when you think about the comments Dr. Bailly made about the Vincis, as they were purchased across Canada, they were all purchased by way of foundation support - every single one of them. I think, as Dr. Sinclair said, it's the balance to use high-tech capital dollars in the most balanced way possible, so we would shift and make priorities within areas that wouldn't enable enhancements and advancements like robotics to be possible.

Those strategic partnerships have enabled, but as we move forward and as it becomes more of what we consider to be a standard of care or an expectation of standard of care, I think we'll start to see a definite shift, as was mentioned, on how we invest and where those dollars are coming from.

I think, as was mentioned, donors are excited and they get excited about innovation like this, so it was a win-win for us to have foundation support in advancements with robotics, but going forward, I think that will change.

GAIL TOMBLIN MURPHY: If I can just add to those two points, I think that from a donor's point of view, again, they are interested in the innovations. In this province, we're pretty fortunate. We have 42 health care foundations, and as much as we think that some of them are small, some of them actually have more money than some of the bigger ones. I think that, to your point, Susan, Stephen Harding chairs that group of health care foundations, and I have seen over the last four years how they're actually working together.

Donors around robotics are also interested in things like the training piece and the education, innovation around using virtual reality for people to put on the headsets. These are learners, these are providers across this province and are really important.

Business cases that go forward to foundations, as well, they don't go forward as just looking for donations. In fact, as the Nova Scotia Health Authority and our responsibility, we do this by year and by what those maintenance costs are going to be, what the operating costs are going to be, so that when we come to the table with the board of the foundations, for instance, Nova Scotia Health is also bringing to them their commitment for these ongoing pieces to make sure it is sustainable as opposed to a drop in the bucket, some technology. We're also hearing from the foundations - again for instance, the \$100-million campaign We Are - that robotics is an area that our foundations across this province are interested in having a piece of and investing in.

SUSAN LEBLANC: Yes, I understand that donors like to donate, and people like to give, and people like to be involved. I just think that if something is changing the course of health care and making sure that women are not dying of cancer at an out-of-proportion rate, then we should probably just be paying for it with our public purse. Anyway, we could talk about this forever.

I want to go back to wait times for hips and knees. First of all, we've been talking about national averages, but is that the same as a national benchmark? It doesn't feel like it's the same. Are we interchanging the words "benchmark" and "average?" We have the benchmark for knee replacement surgery at 182 days. It seems much less than what my colleague was talking about in terms of an average. That was the target that the government had promised to meet after 18 months. We've now passed the deadline of 18 months and we know that the surgery wait time for knees is 1,372 days. Almost four years. That's not counting the consults in advance.



I'm wondering if someone can talk about this, perhaps Dr. Darling. What is the situation? Why are these numbers so startlingly high? How is this robot program impacting these numbers?

GAIL DARLING: I think the robot can impact this in two ways. The orthopaedic robot allows the surgeon to be very precise in how they put the screw in, and so on. They enter the data into the computer before the patient is even asleep so that the operation is, basically, thoroughly and accurately planned before it even starts. This may be a bit disturbing to non-surgeons, but the idea of tapping a screw in and going, oh, that's not quite right, and readjusting it - that doesn't happen with the robot. We can do the procedures more precisely and in shorter time for each procedure, because it's all planned out and the robot adjusts the angle just the right way so that the screw goes in exactly perfectly the first time. That's one way it helps.

[1:45 p.m.]

The other way it helps is, because it's more precise, there is less need for revisional surgery. You're not having people coming back to have that redone because it wasn't quite right the first time. The robot does help with that.

SUSAN LEBLANC: I'm actually asking about real numbers. In terms of our wait-lists, at the QEII, for instance, and this may have been said already but I am trying to think about it in real time again: We've talked about post-COVID-19, that we're catching up a little bit, but in terms of the use of the robot, how is that cutting into the list? How much faster are things happening because of it?

GAIL DARLING: I think that it's not being used for everything, so that's the first thing. Not every hip and knee is being done with the robot. The acquisition of the robots for orthopaedics is relatively recent, so it's just coming into use.

I think the orthopaedic group is well-organized and very efficient at how they strategically book cases to maximize the throughput. The robot can help to a degree but it's not for every patient; it's not for every case. It's just one part of their strategy for reducing those wait times.

I think the other part was just going to the same-day surgery, where they could come in, have a joint replacement and go home the same day so we weren't dependent on beds. That has made a huge difference in terms of getting patients through the system.

THE CHAIR: MLA Leblanc, a little less than three minutes.

SUSAN LEBLANC: I guess I'll just stay on this then. Again, I'll go back to that startling number of four years waiting for a hip or a knee replacement. What has contributed to that? It can't just be COVID-19. Is it that we are lacking clinicians? Is it the

nursing shortage? Is it that our population is aging, so there are more people who need them? Why are we waiting four years?

GAIL DARLING: It's multi-factorial for sure: aging population for sure, obesity for sure. We know that people who are overweight are more likely to have joint problems. So, yes, there's increased demand.

Up until COVID-19, these patients all required an in-patient stay of several days. Then we got back to the bed issue. I think that some of it is related to the old way of doing things, if you will. You just couldn't put the patients through the system as fast as we can now.

I also know that wait-lists for individual surgeons vary quite a bit. Some surgeons have 500 patients on their wait-list waiting for a joint replacement. With the Ocean eReferral system, we will try to even out those referrals. Within the orthopaedic department, they are trying to redistribute some of those referrals, but you can imagine that patients saw Dr. So-and-so, they want their surgery done by Dr. So-and-so, not Dr. X, so they are giving patients the option to go to a different surgeon who has a shorter wait-list.

They are working on it is all I can say. Based on what they did before COVID-19, I'm confident that they're going to be able to get that wait-list down, significantly impacted within a year.

EILEEN MACGIBBON: One thing to add, Susan. I think I mentioned earlier about the optimal use of locations. One of the things that will come by way of us having increased access and use of Scotia Surgery Inc. as a facility on the Dartmouth side and the Dartmouth General Hospital is very progressive and innovative with respect to use of their site as well, as evidenced by the work they are doing with robotics, too. That enables us to use the sites that need in-patient beds when we need them and access to those sites in the most efficient way. That's something that is relatively new in terms of the number of sites that we're optimizing in the current year. That will assist with the current wait-list in achieving targets.

THE CHAIR: Order. The time for the NDP first round has expired. We'll move on to the PC Party. I see MLA Palmer has his hand up, so go ahead.

CHRIS PALMER: Today is an example of a day that I am excited to be on this committee, just to get a chance to hear some of the innovative things that are happening. I'm sure that health care today looks different than it did 20 years ago and I'm sure that 20 years from now it will look a little different in how things are done.

I'm sure that a lot of Nova Scotians aren't aware of a lot of things that are happening, so our job is really to communicate some of these things to Nova Scotians. Thank you for outlining some of the things in progress and wait times that innovation in

robotics is making and the shortened convalescence time in hospital. It is important for people to know some of the things that are happening with robotics and innovation.

My question is both general and broad. My first question is basically about the process that brings these world-class technologies to our province. Can you just tell us about that process, maybe Dr. Tomblin Murphy and anyone who would like to add to that? How does that happen? How do you decide what would be the next robotics to come along? Just talk more about the process.

GAIL TOMBLIN MURPHY: The diligence process is incredibly important and diligence for us means that we have patients and families involved in the very beginning conversations around things like robotics. We also have our clinicians. We have about 28,000 employees in the Nova Scotia Health Authority, and we've got some brilliant employees who have good ideas, they've seen other experiences, and they know the evidence.

We bring the patients and the families. We bring the clinicians to the table, and we bring our private industry partners. Many have thought about - whether we are talking Medtronic, whether we are talking about Stryker, it doesn't really matter. Our private industry partners are key to this. In addition, we bring our foundations to the table.

What is it that we do? Well, in our portfolio we have an opportunity to do market scans, and we do market scans pretty quickly. What is out there? Who is using what? What impact are these robotics actually making on patient care, as well as all of the health system outcomes that people have asked about so far? We can do the market scan and then we do the diligence process. We have many, many private industry partners that have many different kinds of technology. It is important for us to do the diligence, the business diligence, so we have business development and have invested in business development in this province to make sure that we are making the right decisions about the best products.

The diligence means having criteria that are set ahead of time. We look at that best evidence, we look at the market scans, we bring the clinicians together, and we do demos. For instance, where do we do those demos? We would have people come and in the basement of the Bethune Building, for instance, we have clinical simulation that the QEII Foundation has generously supported. In addition, on the Dartmouth side, Dartmouth General Hospital, as well as other foundations across this province, have this simulation type of experience. We can go in, bring our clinicians, wrap around, get a feel for.

Dr. Darling has talked about the personalized medicine - getting that screw and making sure that that arm is actually working in the way the surgeons think it should be working, for instance. Diligence means a lot of things. We have the criteria, we bring the people to the table, the market scans, and we make the decisions about those best products. Our private industry partners - they stay with us, they help us with all the other people at the table, and we see value in those partnerships. Oftentimes they make contributions to

research and development, research and innovation in this province, which helps us, again, to use that data to understand the research, and we wrap our clinicians around much of that research.

It's quite an extensive process. The decisions don't come easy and there are a lot of people involved and a lot of evidence.

CHRIS PALMER: Thank you very much for that. I'm sure a lot of people around the province in rural areas are taking advantage of these opportunities for robotic surgeries when they come to the city or to the bigger hospitals. Robotics innovation in general - could you talk to me a little bit about some of the things that are being done to promote innovation, and maybe robotics in rural parts of the province, as well, in places like where I am, in the Annapolis Valley? Maybe talk about how those rural people are able to take advantage and benefit from this technology.

GREG BAILLY: We are pretty fortunate here in Nova Scotia, based on our geography, our size, and our population. We are all pretty much very well connected across the four different zones. People have access to robotics in Halifax because we have representation all over the province. In each zone there is pretty much a representation of each of the sub-specialties, like urology, general surgery, orthopaedics. Those patients are often seen by their local urologist, for instance. If they're diagnosed with prostate cancer or kidney cancer, they will be referred on to Halifax, where that particular surgery would be available to them.

There is absolutely no discrimination at all, or difference in access to care, amongst patients who live in different parts of the province. I would say that's for most things. As a tertiary care centre, 20 or 30 years ago, you would have a lot of different surgeries being done in all corners of the province. That doesn't happen as much now, and that's a good thing. You don't want a lot of people doing a few things; you want a few people doing a lot of things in terms of surgical volumes and outcomes, and that's proven. That's evidence based. Access is the same, regardless of where you are, where you live.

GAIL DARLING: I just wanted to add to what Dr. Bailly said about access. There are certain specialties in surgery which are only offered in Halifax: thoracic surgery, vascular surgery, cardiac surgery, neurosurgery. We're used to having patients come from all over the province to Halifax for those procedures. That allows the operating rooms in the other communities to be used for things that are more common, what we might call bread-and-butter surgery, but things that people in those neighbourhoods need every day, every week. Then they come to Halifax for tertiary-level care. They have access all the time to that care. Whether we do it robotically or some other way, it's available.

GAIL TOMBLIN MURPHY: If I can just add on the innovation piece, if we look at the recent investments of our academic institutions in this province - leaders like St. Francis Xavier University, like Cape Breton University, like Saint Mary's University, as

well as others, which have the innovation - not only just the planning, but the spirit and responsibility to be involved, it's a good day for health and health system.

Robotics also have to do with our biomedical engineers, like Dr. Janie Wilson, who works with Dr. Michael Dunbar. We also know that it means data and analytics around that data. The robotics, having the most in the country, and the data every day on every patient, that's only going to increase. The work that we're doing across this province with those academic institutions, as an example, will continue to put us on the map, and that's incredibly important, those investments.

DOUGLAS SINCLAIR: There's some lessons learned from colleagues south of the border where robotics has been quite expansive to all kinds of hospitals. I shouldn't say it's a marketing ploy, but they have really expanded without any kind of thinking because of their different system. In Ontario, they struggled a little bit with that, but kept it sort of under control. That's how we have such an excellent opportunity here in Nova Scotia, because, as Dr. Bailly said, everything is so well connected. We can make sure that we have the expensive technology in the right place and have the patients in the right place because, again, we're connected, and it's a small province. I think that's a real advantage that we have here.

CHRIS PALMER: I just want to thank you all for your in-depth answers and thank you for highlighting this for all Nova Scotians today. I'm going to pass this on to my colleague MLA Barkhouse.

THE CHAIR: MLA Barkhouse.

DANIELLE BARKHOUSE: Dr. Sinclair, in your opening statements, you said that you see lots of potential. I'm just kind of wondering - I'm inquisitive - what you see, what the potential is.

DOUGLAS SINCLAIR: I think it's still very early days in that regard. If you think of pediatric surgery, it's smaller numbers - obviously smaller numbers of surgery and smaller patients, if you will, from a physical point of view. I think that's very early. In preparation for that, I did make some contacts at the Hospital for Sick Children. Again, even a world-class place like that is still very much more on the innovation side. I think there's more to come, but it's still very early days. I think we'll see developments.

We didn't get a chance to talk about some of the very exciting areas in neurosurgery, in neuro-interventions. I think you'll probably see that expand before pediatrics, but who can predict these things?

DANIELLE BARKHOUSE: Fair statement. Could anyone please share with the committee a bit more about the centre of excellence strategy?

[2:00 p.m.]

GAIL TOMBLIN MURPHY: A centre of excellence strategy around robotics is one that brings together some of the answers that we've already talked about. It has to do, first and foremost, with improving experiences and patient outcomes, and we've heard a lot about those today. This will continue to be a focus of the strategy.

In addition to that - again, using a centre of excellence as a teaching organization - I've oftentimes heard that we bring the best, we bring the finest fellows. We are now seeing them in our medical schools before they become fellows, as well as in other health-related professions. They come again to be trained in robotics. We know that as we move forward in the innovation, in the data pieces as well as others, this is going to continue. It's an important part.

The education and training are more than what we're doing right now in classrooms, and more than what we're doing in clinical placements, and more than what we're doing in simulation labs, for instance. Part of the strategy is using innovative ways, whether it be virtual reality, which I've spoken a bit about, but it's also across the province, for instance, as we move forward with mobile kind of simulations, so that whether you're in rural parts of the province or if you're in downtown Halifax, the learning needs to be accessible. Part of the strategy is how we actually do that education and training.

As well, the strategy - incredibly important - is, again, around the innovation piece. I think Dr. Sinclair talked about some of the recent examples as they relate to brain and spine robotics and others that we're talking about that have to do with epilepsy and other things. Every day, there's something that's coming forward. A centre of excellence strategy is where that best evidence and the best partners and those best outcomes and how we train people come together. That would be part of the strategy. It's more than buying robots; it's having robots, but also having a strategy that I think Dr. Sinclair was just referring to, where in the south, they've gone (Inaudible), and I think we're here with a strategy that is going to make a difference.

DANIELLE BARKHOUSE: You gave us a little tidbit, but that leads me to ask if you're able to give us an indication or a sneak preview of some future projects coming out of the Innovation Hub. What exciting work are you up to right now?

GAIL TOMBLIN MURPHY: I definitely will get started. I definitely think that there are many solutions to transform health care. Some of those solutions within the Nova Scotia Health Authority Innovation Hub, we have a model to test and try. Let's try things, let's get some people in through the door, let's do some diligence, and let's figure out whether they work or not. Examples around robotics, for instance. If you think about what Dr. Sinclair has said, we're much better set up today, where we have more robots, we have people thinking about the innovation, for instance, the testing and trying of additional kinds of robotics that would make a difference to impact the lives of Nova Scotians.

Dr. Darling has talked about and given a sneak preview in terms of the impact on thoracic surgery. Dr. Bailly has also talked about if we had another da Vinci robot, just think about what we could do. The sneak preview into the work that we're doing around health innovation is: What are the pain points? What are the needs of Nova Scotians? How do we need to be doing things differently? The test-and-try models are part of that.

Sneak preview is also a centre of excellence means that we can't just say we have one, but in fact that the QEII Health Sciences Centre Foundation has made generous board decisions around - as well as the Dartmouth General Hospital Foundation, and others - the types of funding that we need to continue on this journey.

THE CHAIR: MLA Barkhouse, you have about five minutes.

DANIELLE BARKHOUSE: I'll pass it on. There are four of us, so I'll pass it on to my colleague, MLA White.

THE CHAIR: MLA White.

JOHN WHITE: I just want to say how amazed or impressed I am on this topic. This topic really has opened my eyes to a lot. I feel very privileged that we get to sit here and have this conversation, and the briefing notes we've had beforehand to know. It's so exciting what's going on in Nova Scotia. You folks are amazing in what you're doing. I'm just honoured to be here with you to hear this. I truly mean that.

The reason I say that is because one of the things you talked about earlier was changing hospital recovery times from a week to 10 days down to one day and now being released in the same day.

The only question I want to ask you now is if you can maybe give us a little more elaboration on how some of the robotic surgeries are truly impacting patients, because that's what it's about. Ultimately, that's what we're here for and that's why we're doing this stuff. Can you tell us maybe a little bit about how the robotic surgery is helping patients and maybe some personal stories of people - of course, keep the confidentiality - but just the impact. I am truly amazed by that.

GREG BAILLY: I think that has been one of the most satisfying parts of bringing robotics into Halifax into our practices: observing the patients and the outcomes and the experience that they've had. They love to share it.

Up until we did robotic prostate surgery, the average length of stay was two or usually three days. Now it is typically less than 24 hours. Patients go home taking Tylenol, if anything. They have very little pain. They are up walking that night and they are up walking out of the hospital the next day, because it is done through four very small incisions half an inch long versus a four-to-six-inch incision.

The recovery and pain, discomfort, everything that goes along with it, affects your mood. The pain killers affect your bowel function. The recovery at home for everybody is prolonged when somebody has had a big surgery. When someone has had a smaller surgery with less pain, everybody recovers better.

In the surgery itself, there's less blood loss. Everything is precise. There's risk associated with blood loss and blood transfusions. We rarely see blood transfusions now with our surgeries that are done robotically. There's less risk of infection, which goes on to reduce the complications associated with wound infection and everything that goes along with it, less need for antibiotics. There's a quicker return to society and societal contributions - going back to work and participating in society. That's not something we can measure and it's not something - oh, we can measure it but we can't measure it financially from a health point of view. It comes from a different bucket of money, but that's important to patients.

Up until we had robotics, those in Nova Scotia who were wealthy could go to the United States and have robotic surgery. They could fly to other parts of Canada and have robotic surgery. That is not very common now, but the average person couldn't pay \$50,000 to go to the United States to have it, so our health care was really two-tiered, even though we didn't know it.

One of the reasons the donors came to the table was, as they explained to me, although the majority of donors were people who gave \$25, \$50 and \$100, some of the bigger donors said we're doing this for our employees. We're doing it because we can go anywhere. We can go the Mayo Clinic or wherever, but our employees can't. That was really big. That was eye-opening for me and that's the majority of Nova Scotians.

When you reduce the time in hospital, the other thing that happens is you have less cancelled surgery because every day we come in for surgery we wonder if there are enough beds for the patients who are booked for surgery that day. If there are too many patients in the hospital, then I might have to make a decision on cancelling one of my patients that day.

We don't see that as much now. Yesterday, Dr. Rendon did two prostates and a kidney before two o'clock in the afternoon and all of those patients went home today. Five years ago, it would have been very different. They'd still be in the hospital between three and seven days. We've opened up beds for more people to come in. That would be an example of the impact it has on patients.

THE CHAIR: MLA White, you have five seconds.

JOHN WHITE: Quality of life, its impact, work labour shortage, all those things are impacted, so . . .



THE CHAIR: Order. The time for the PC Party's first round is over. I see MLA DiCostanzo has her hand up. We have 10 minutes for each caucus. MLA DiCostanzo.

RAFAH DICOSTANZO: I'll just continue on that quickly. I have other questions. To me, and as my colleague MLA Leblanc mentioned, this is about efficiency. You're just telling how much time it saves. Why are we waiting for donors and not as government? This is not about helping just the employees. This is how we can do things more efficiently. We save dollars for the government if we go the robotic way. This is where we should be heading for the patients. It has so many other wonderful things. To look at it from a dollar value, it is the way to go, and we shouldn't be waiting for foundations to do it for us. I agree. That was something I was going to say earlier on, but that was that.

The other thing that I really also wanted to ask especially concerns the QEII redevelopment that was announced in 2017. I remember that I was so excited because robotics is something new that brings doctors. New hospitals bring new doctors. Was that redevelopment envisioned for better space for robotics? Is there a vision for that? I know that two parts of it have been continued, which is the Dartmouth side and Bayers Lake, but they have stopped the QEII. What was planned for the QEII when it comes to robotics? What is happening at Bayers Lake for robotics? If you can tell me, I can tell my constituents. I would love to hear that part as well.

EILEEN MACGIBBON: That's something we're very excited about. I think the announcement in January to do more faster has the entire team at every level and every team excited about the possibilities now in a short time frame. What you're asking about specifically with robotic surgery is part of the planning now, because we know we are making changes to our operating rooms at the QEII, which is where we would be doing robotic surgery in addition to the Dartmouth General Hospital. The planning that's under way is to determine the best ways for us to optimize the space we have to enable us to have the capacity we need for the future and to give us all of the extra elements that aid in that and support a growing robotics program into the future.

RAFAH DICOSTANZO: But the redevelopment, the three locations - we're bringing services to where patients are. The plan in 2017 was to have robotics rooms. How does space and a new hospital affect having more robotic machines, using maximum capacity of the robotics? Does that help? What is in the plan? Is there going to be day surgery at the Community Outpatient Centre in Bayers Lake with robotics for the future?

EILEEN MACGIBBON: Our plan right now is not to have robotic surgery at Bayers Lake. The resources we would need currently would make more sense at the QEII and the Dartmouth General, but that's not to say that we're not, as we talked about earlier, optimizing all of our sites to ensure we're doing surgery in the most appropriate location to get the best utilization. Originally, there wasn't a plan to have enhancements to our operating room theatres at the QEII, but that is now part of the plan.

I think there's a misconception that we need to add a lot for robotic surgery, but as Dr. Bailly can attest, it really isn't huge enhancements. We have done a lot with what we have. It's not as though we have to do a lot to the physical infrastructure to enable added capacity. It's just generalized added capacity that we are working towards, but robotics is obviously part of that planning.

GREG BAILLY: It may help. Almost all robotics equipment is a plug-and-play model. They're on wheels. You wheel them into any operating room, really. I think that there are some modifications that we're talking about making to some of the rooms. We anticipate an expansion of robotic surgery. It's quite remarkable how these are set up to be able to wheel into any room. The room that we have it in at the - is about the size of this table. It's a small room, but we can do everything we need to do. The new ORs are much bigger, and we'll be prepared for that. When we need the room for something else, we unplug it and roll it out.

[2:15 p.m.]

RAFAH DICOSTANZO: That's wonderful, and I hope the new hospital will attract more doctors who are able to do robotic surgeries. I'm also wondering about the training. The old doctors, I should say, who are trained to do it the old-fashioned way, are they resistant to doing it with robotics? How much resistance do you get? Can you train old doctors on robotics? What percentage is being trained?

GAIL DARLING: That's an excellent question. As an old surgeon, I can probably answer that very well. We already have surgeons who are trained on robotics who are not using robotics because we don't have it yet. For example, colorectal surgery: We have two surgeons who are currently trained to do robotic colorectal surgery. They have a plan, if and when we get another da Vinci robot, for how they're going to train their colleagues. Intuitive, which owns da Vinci, takes surgeons down to their training site, they train them up, and then they send proctors to that surgeon's home hospital to supervise them, to help them as they start their practice.

We already have surgeons on site who know how to do robotic surgery, both in colorectal and in thoracic surgery. We already have a plan for how we're going to bring those other surgeons up to speed on robotics.

I think there will always be surgeons who don't necessarily want to embrace the new technology, but they're not standing in the way. They're not a barrier to the other surgeons learning. It's always good to have somebody who knows how to do it in an open fashion just in case. We already have a plan for how we're going to train those new surgeons. There is a simulation trainer for the robot, so that before anybody actually - for example, surgical trainees, before they start on an actual patient, are going to be down there training all the time, learning how to use it before they ever go to the operating room.

Once they're in the operating room, there's a dual console for the surgeon who already knows how to do it and the resident trainee who's learning how to do it. The surgeon at the console controls everything. It's very safe. It's incredibly safer than the way we used to do it.

THE CHAIR: MLA DiCostanzo, you have about two minutes.

RAFAH DICOSTANZO: That says a lot, that we need a couple of da Vincis. Many Italians here are going to do a very good job. (Laughter) What is the dollar value of another da Vinci? The \$1.6 billion that we just had, extra money, why didn't we have another one or two da Vincis when it makes efficiency and it actually saves government money? How are we not advocating for that as doctors, as people, that this is the way to go? Is it \$2 million, \$3 million for a da Vinci?

BRENDAN MAGUIRE: No, I bet you it's way more than that.

RAFAH DICOSTANZO: My question is: How much is a da Vinci?

GREG BAILLY: For the original da Vinci that we purchased in 2019 or 2018, the entire business plan was \$8.2 million, of which I believe \$3 million was for capital and the other \$5 million was for maintenance and disposable or consumable equipment. Those costs have come down, fortunately, so in our business case, we actually were able to do more cases than we had targeted because the costs have come down each year.

Up until now, there has been one player - it's been Intuitive - but Medtronic is getting into it and some other vendors in Europe are working on them, so we expect that there's going to be a reduction in price. Those centres across the country that have recently purchased da Vincis have gotten them cheaper than we got them.

THE CHAIR: MLA DiCostanzo, you have 15 seconds.

RAFAH DICOSTANZO: I hope with this lower cost that we should be without question having more, because the savings are probably three times the amount of money that that costs, and we need to move . . .

THE CHAIR: Order. Thank you, MLA DiCostanzo. It's now the NDP. MLA Leblanc.

SUSAN LEBLANC: Speaking of innovation, I want to talk about the website that the Progressive Conservative government promised that would track in real time the number of surgeries taking place in a day, what types of surgeries, how are the numbers, how the wait-lists have been impacted on a daily basis. It seems like we have some of that in place now with the Action for Health. It shows the numbers of surgeries performed each day and week, but not the other information that was promised.

I'm wondering if anyone can speak to that - if that information will be added to the system or to the website, and when.

GAIL TOMBLIN MURPHY: Thank you so much for raising that, Susan. That would be information that we would have to get back to you, around the Action for Health and the dashboard and exactly which other parameters will be shown and when. We wouldn't be in a position to speak to that, but we will make sure that you get that information.

SUSAN LEBLANC: Great. Thank you very much.

We were also talking about the eReferrals. We're happy, of course, that that is happening, but wondering - we understood when that was first announced that the eReferral system would be a key tool to see how many people are waiting for consults. Do we know how many people are waiting for surgery consults right now?

EILEEN MACGIBBON: That's the work that's under way, to be able to quantify - by surgeon, by speciality, by area, by site - what those numbers look like in the most quantified way. Currently, we have lists that are maintained by surgeon or physician offices, but all of that will move to the new platform. That is part of the Ocean strategy.

DOUGLAS SINCLAIR: When we talk about the scope of change - and I think to the previous question on will surgeons change or resist, this is a huge change. I'm a bit peripheral to this, but I've been in health care 40 years. I'm very excited about this. Traditionally, the family physician referred to surgeon X and the administrative assistant at surgeon X's office kept a list. This is a huge change, and I would say it's being embraced.

Is every surgeon and family doctor signed up? Not yet, but it's pretty close. All of these things, it does take - I know you don't want me to say it takes time, but it really - my view is that it really is on track, and the right things are being done. I don't think it's going to take that long before we start to see it, but there is a period of time to get it set up and test it.

It's a huge change - a much bigger change than robotics, frankly. (Laughter) It doesn't sound very exciting, but it is. (Laughter)

SUSAN LEBLANC: Listen, as a parent who is waiting to hear back from a pediatrician right now, I am all in.

I guess that begs the question: Do we have a timeline? Do we have a target of when everything would be in place, and the system up and running?

GAIL DARLING: It's an excellent question, and I don't think we have a precise answer. We can say, as Dr. Sinclair said, that almost all the surgeons have registered. A

huge number of family doctors have registered - not all yet. The system has only been in place a little over a month. There are some growing pains.

I can't answer your question directly, but I do anticipate that it won't be too long. Is that six months? Maybe six months.

SUSAN LEBLANC: Well, we'll work with six months, and then we'll ask again. That's great. Thanks. (Laughter) You heard it here first, folks.

Also, we understand that there is a goal of incorporating diagnostic imaging, like MRIs and CTs and ultrasounds. Do we have a timeline for those things to be online?

GAIL DARLING: Diagnostic imaging is next in line to go onto the Ocean eReferral system. I don't know exactly when, but I would think that's actually imminent.

SUSAN LEBLANC: Great, thank you.

I wanted to know about wait times. It was reported recently that around 22,000 people are waiting for surgery. I'm wondering if we know what that number is today.

EILEEN MACGIBBON: I don't have the numbers as of today, Susan, but I am happy to provide those in follow up.

SUSAN LEBLANC: I might ask just one more question and then pass it on to my esteemed colleague. I wanted to ask about the Canadian Cancer Society calling on the government to create a public plan to clear the backlog for cancer care surgery. I'm wondering if this is happening, if the government has a plan to do this.

Obviously, there are certain types of cancers that we have talked about today, but in general, do we have a plan, or is that being worked on?

GAIL DARLING: I might just start. I think the surgeons, if we look at the wait-lists and who is on the waiting list, we know that the cancer patients, yes, are waiting, but they are being prioritized. The individual surgeons and surgeons' offices will prioritize their cancer patients. Specialties that deal only with cancer, for example gynecologic oncology, don't have as many patients on their waiting lists as, say, the orthopaedic surgeons do for hips and knees because they basically see the patient, and they get booked. I can't speak to the government's plan but that's what surgeons are doing because they know those patients have to be prioritized.

DOUGLAS SINCLAIR: At the IWK Health Centre of course, we do all the breast cancer surgery for the Central Zone, and we have been meeting those targets for breast cancer surgery for women right through the pandemic. Again, the cancer surgeries really are at the top and prioritized.

THE CHAIR: MLA Burrill.

GARY BURRILL: Briefly, Dr. Tomblin Murphy, I just wanted to ask a nursing-related question. We keep bumping into the question that, with these technological advances, there are blockages occurring because of human resources problems, and it's preventing us realizing some of the advantages of what has become technologically possible.

In our constituency offices, where we see the world not so much clinically but more through a patient's eyes and from the eyes of workers in the system, we have been contacted by quite a number of nurses, particularly around the thank-you bonus, particularly those who have been excluded for various reasons, often because of their work situation, having to do with their health sometimes, often because of cancer treatment and so on. The response they have been receiving is that the case needs to be taken to the employer.

As the employer, is the Nova Scotia Health Authority in a position to be able to really address these gaps in the thank-you bonus and speak to some of the difficulties about morale in the sense of being left out that has been caused by this?

GAIL TOMBLIN MURPHY: That is an incredibly important question. I have studied health human resources planning for many years and have focused on nursing. There are a lot of things - the evidence tells us that nurses need to be valued, they need to be respected, and a monetary incentive is one piece of that.

In addition to that, there are other strategies like supporting them in ways to get full-time positions. We are offering full-time positions to students who are in their second year in programs across this province so that they feel valued, and they know they have a career ahead of them. We bring them in early, and that's through some of our programs that we have in place. That seems to be working. Students are making huge contributions, for instance.

Also, nurses who are working in the organization need to be incented - not to work around the clock but instead be involved in innovation and that type of thing. The incentive around the money is clearly a partnership across the board and with government. I think government would be better to speak to that. As the chief nurse, what I can say is over those 149 nurses at this point to have received that \$10,000 with the two-year . . .

THE CHAIR: Order. The time for the NDP's second round has expired. We will move on to . . .

THE CHAIR: Order. The time for the NDP's second round has expired. We will move on to the PC Party. I see MLA White's hand up, so MLA White.

[2:30 p.m.]

JOHN WHITE: Just before I pass it over to my colleague, MLA Smith, I wanted to continue my question, the last one I had. I was telling you how impressed I am with robotic surgery. I know it's about patients. It's quality of life. It's really - we're talking about here - whether that's working or just quality of life in general. It's amazing.

I've got one question: Can you tell me, or can any of you guys give me a hint into how you imagine the impact that investments in robotic surgery may have on health care over the next 10 years or so? What's that going to do to health care in Nova Scotia with these investments today?

GAIL DARLING: Maybe I will start. Thank you for that. It's an excellent question. I think the advantage that robotics brings is the ability to do precise surgery every time, perfect surgery every time. Surgeons are just human, and sometimes we're a little off, or we do our best, but the robot is going to eliminate - maybe eliminate is a bit strong, but virtually eliminate the room for technical human error in surgery. It is my belief that it is going to improve surgical outcomes for all patients.

GREG BAILLY: Just to make one general comment: I completely agree. To put it simply, our whole mandate as heads of the department and as leaders in the hospital is to provide timely access to top-quality care. How do we do that? We have the best technology, innovation, equipment at our hands, and we recruit the best people. You get those two things and they bring on more good people. Not only are we in the business of providing clinical care, but we're a university hospital. People come here because they want to do clinical work - surgery - but they also want an environment of scholarly activity.

Nobody wants to come and just be a surgeon. They wouldn't come to Halifax. You would come here to take advantage of the best things that are available anywhere else in the world, and to be around other like-minded people. The more robotics that we have, whether it's in orthopaedics, neurosurgery, ENT, urology, whatever, it really creates this culture of robotic scholarly activity, and that's where, I think - I'm not downplaying the importance of clinical, but that whole other envelope of the importance of having a robust centre of excellence in robotics is apparent to me. I think that's what you would see in 10 years; not just the clinical, but you'd see a centre of people who'd want to come here, people who'd want to come and work, and nobody would want to leave, I hope.

GAIL TOMBLIN MURPHY: In addition to that, an MLA earlier has talked a lot about efficiencies and enhancing productivity. If we have the right teams in place to deliver care based on their scopes of practice and working together, that's incredibly important. What robotics brings is, again, the precision, but also it brings the right care to the people. It's more than surgeons. It's bringing teams together, but it's also our teams are broad - back to Dr. Janie Wilson. Having biomedical engineers, having our industrial engineers

who help with our flow and thinking about input, throughput, and output - incredibly important.

At the end of the day, robotics in surgeries that we've talked about today, when we look at the advancement of robotics, we also will be seeing where we're testing and trying already, but robotics in many areas of delivery of health care beyond the surgery into what's happening on the floor, what's happening in our kitchens, what's happening in our primary care in Bayers Lake, what's happening in many places. It's the way of the future, and we're in a brilliant place to be learning from the evidence.

DOUGLAS SINCLAIR: MLA White, I just want to take your question further to say what are we looking at in 10 years? I've been practising over 40 years, and this is a really exciting time because I think what you're hearing in the surgical robotics is a move to personalized medicine. We hear that a lot. It's gets thrown around a lot, but we really are very closely there, in terms of designing - that patient X needs this type of precise surgery from robotics, and it goes beyond that. It may be a topic for another day.

We have a world-class lab here with the Nova Scotia Health Authority and the IWK with some of those molecular genomics. Now we do a blood test to decide, does the patient need chemotherapy X or Y? Soon I, as an emergency physician, will be looking at people and saying you need antibiotic X or Y, based on not even taking blood from some test we can put on - just from your skin.

I know there's lots of hype about this, but we really are very closely there. I think some of this innovation you are seeing - I mean, that's what's going to happen: Medicine will be transformed by this technology that is right in front of us. That may be another topic you want to hear more about.

THE CHAIR: MLA Smith, you've got four minutes and five seconds.

KENT SMITH: I need only about a minute. I'm sure the witnesses will take up the other three.

I've said this before in committee in that we come prepared with a list of questions and we're ready to ask and learn as much as we can about the topic that we're dealing with. Inevitably the questions that we have prepared get touched on or answered one way or another, so I don't want to be repetitive with my question. I want to make sure that we've covered everything thoroughly.

With respect to patient outcomes, we've talked about that a lot, that recovery times are less, the incisions are less invasive, they spend less time in the hospital, so that's obviously a benefit to opening up those beds. There was something interesting that Dr. Darling said when it comes to the surgeons who are performing these that tightening the screws - they can be precise with that type of procedure.



My question is about the folks operating these robots. Have we covered everything? Is there anything else that these robots are doing to enhance the capabilities of the surgeons? Anyone who has operated one.

GAIL DARLING: I think the robot has an incredible degree of magnification and I think in the binder it talks about they're using a microscope. You are suturing with sutures that you can't even see with your eye but because you can see them with a microscope, you can use them. It's very similar - the robot has this incredible magnification so you can see better. If you can see it, you can do it.

The other piece of that is that the instruments that are used give you almost the same degrees of freedom as your own wrists. The other minimally invasive surgery you are operating, and people called it chopstick surgery - you are operating with these very long instruments - they could only turn certain ways. You are relatively limited in what you can accomplish compared to doing open surgery. The robot gives you all that degree of freedom and movement that you had with your hands normally, like in open surgery, but in a minimally invasive environment. So the ability to do precise surgery is increased.

There are some ergonomic benefits to the surgeon because you are seated, your arms are supported, you are not standing up shrugging your shoulders and getting a headache all the time. Dr. Bailly can probably speak to that better than I can. There are a lot of benefits for the surgeon as well.

Some people say their surgical career may be extended because they are not going to have the aching back or the sore neck. There are advantages in terms of - in the operating room a surgeon is almost completely independent. They don't need one or two assistants, for example, because they can control it all through the robot. So having an experienced assistant becomes less critical because the robot is your assistant. Your assistant doesn't get distracted or look away, cease to retract the way they used to. These are practical things, but it eliminates all of that.

GREG BAILLY: Just to add, there's no question that it's way better for the surgeon. I've done several hundred open prostatectomies for cancer up until 2015. It was bothering my back all the time, because when you do pelvic surgery, you are kind of twisted and looking down into a deep, dark hole.

I stopped doing them and had a couple of back surgeries. The guys who do them now sit in their sock feet, their hands are in these little gloves, they've got a pad that their head goes into - this three-dimensional camera that's high-definition. The music's on, they get up and they're done. It is very different than this kind of thing for several hours . . .

THE CHAIR: Order. That concludes the question-and-answer period for this afternoon's meeting. We'll now go into closing remarks if any witness has closing remarks.

GAIL TOMBLIN MURPHY: Thank you so much, today, for the questions that have come forward and, clearly, the impact on patients, on providers, as well as Nova Scotians is pretty clear. We really look forward to working with you and many people in communities to continue to advance in innovations, and in particular around robotics. Thank you so much for this opportunity today.

THE CHAIR: Any other further comments or closing remarks?

Hearing none, I'd like to thank you all for coming. You're now excused. We're going on to committee business. I'm going to take a four-minute recess.

[2:41 p.m. The committee recessed.]

[2:46 p.m. The committee reconvened.]

THE CHAIR: Order. We'll call the meeting back to order. We're going to move on to committee business, and there were two items added to the agenda, I think yesterday.

Item No. 1 was correspondence from Deputy Minister Lagassé in response to the committee's April 18<sup>th</sup> request for suggestions of community partners to invite as witnesses at the meeting on Implementation of Additional Mental Health and Addictions Supports in addition to the Office of Addictions and Mental Health. Deputy Minister Lagassé has suggested Starr Cunningham, CEO of the Mental Health Foundation of Nova Scotia, and Karn Nichols, executive director of the Canadian Mental Health Association.

I'm looking for discussion.

KENT SMITH: I have a motion to put forward to support those recommendations if the Chair would like to accept it now.

THE CHAIR: There is a motion on the floor.

KENT SMITH: I can read it formally if you'd like, sir.

THE CHAIR: Yes, that would be appropriate.

KENT SMITH: I move to add Starr Cunningham, president and CEO of the Mental Health Foundation of Nova Scotia, and Karn Nichols, executive director of the Canadian Mental Health Association, to the PC topic of Implementation of Additional Mental Health and Addictions Supports.

THE CHAIR: We have a motion on the floor. Any discussion on the motion? Seeing none.

All those in favour? Contrary minded? Thank you.

The motion is carried.

I do apologize. I'd skipped over it because I saw March, but it was - in committee business, it says March 4<sup>th</sup> and March 5<sup>th</sup>, but it's actually May - for the record, it's May 4<sup>th</sup> and May 5<sup>th</sup> that those emails came in.

Item No. 2: correspondence from May 5<sup>th</sup>, email from the deputy minister for the Department of Health and Wellness. This was volunteered suggestions for witnesses on some of the topics. Again, this was forwarded to members yesterday. Is there any discussion on this? I will note that these suggestions were unsolicited, so this was not something that the committee had requested. We'd already gone through our witnesses with our committee when we had our actual committee agenda-setting, but if there is discussion, I'm open for discussion.

RAFAH DICOSTANZO: For us, when we put up a topic, we ask for our witnesses, so we don't need assistance or telling us whom we should bring. We're fine with whatever we've given, but if the government had put up a topic and they wanted to add, and that was their choice, there's no problem. We're okay with that.

SUSAN LEBLANC: I just wanted to confirm. In Deputy Minister Lagassé's email, I believe it was for the EHS offload times. I remember reading it and she had suggested the paramedics union - the people, like Mike or Jeff and Kevin, Kevin MacMullin and someone else from the paramedics' union. Anyway, my point is that because that's a Liberal topic, I just want to get clarification that the Liberals . . .

THE CHAIR: I believe they're already on that one, like, on our committee . . .

SUSAN LEBLANC: Yes, that's right. That's what I'm saying.

THE CHAIR: I will be honest: I think this was unnecessary. I think it came - we already have our witnesses. Everybody's had their witnesses, we approved them at our last meeting. This was for information. It was delivered, so we wanted to make sure the committee got it. I don't know if we really have any . . .

SUSAN LEBLANC: Okay, so we're good, right?

THE CHAIR: I think we're good. I just wanted to bring it to everybody's attention because it was sent to the clerk so that everybody saw it. If we're okay with that - MLA Maguire?

BRENDAN MAGUIRE: For our topics, the Liberal topics, we just want to keep the witnesses that we had approved. It's great that the deputy minister had volunteered witnesses, but we're going to stick with the ones that we had already approved.

THE CHAIR: I think that's appropriate.

BRENDAN MAGUIRE: Thank you.

THE CHAIR: Any further discussion on that item?

Seeing none, is there any other business?

Hearing none, our next meeting is scheduled for Thursday, June 15, 2023, from 1:00 p.m. to 3:00 p.m., Mental Health Supports for First Nations Communities. Witnesses include Tajikeimik - Mi'kmaw Health and Wellness, the Mi'kmaq Nova Scotia Health Directors Committee, the Nova Scotia Health Authority, IWK Health Centre, Office of Addictions and Mental Health.

With that, the meeting is adjourned.

[The committee adjourned at 2:50 p.m.]