HANSARD

NOVA SCOTIA HOUSE OF ASSEMBLY

STANDING COMMITTEE

ON

HEALTH

Tuesday, May 31, 2022

LEGISLATIVE CHAMBER

Improving Cardiac Arrest Outcomes in Nova Scotia

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HEALTH COMMITTEE

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[Hon. Patricia Arab was replaced by Hon. Brendan Maguire.]

In Attendance:

Judy Kavanagh
Legislative Committee Clerk

Gordon Hebb
Chief Legislative Counsel

WITNESSES

Dr. John Sapp: Professor of Medicine, Physiology and Biophysics, Assistant Dean of Clinical Research, Dalhousie University; Attending staff, Division of Cardiology, Heart Rhythm Service, QEII Health Sciences Centre; Cardiologist/Electrophysiologist, Maritime Heart Centre

Dr. Santokh Dhillon: Associate Professor, Dept. of Pediatrics, Dalhousie University; Pediatric Cardiologist/Electrophysiologist, IWK Children's Heart Centre; Braveheart Support Society

Dr. Andrew Travers: Provincial Medical Director, Emergency Health Services; Professor, Department of Emergency Medicine, (Cross) Department of Community Health and Epidemiology, Dalhousie University

Mike Janczyszyn: Advanced Care Paramedic; EHS AED Registry Program Coordinator, Emergency Health Services

Kathryn Rand: Director of Health Policy and Systems, Heart & Stroke Nova Scotia

HALIFAX, TUESDAY, MAY 31, 2022

STANDING COMMITTEE ON HEALTH

2:00 P.M.

CHAIR
Trevor Boudreau

VICE CHAIR
Kent Smith

THE CHAIR: I call this meeting to order. This is the Standing Committee on Health, and I am Trevor Boudreau, the MLA for Richmond and Chair of the committee. Today we will be hearing from witnesses regarding improving cardiac arrest outcomes in Nova Scotia.

I will remind members and guests to please turn your phones off or put them on silent. In case of an emergency, please exit through the back door to Granville Street, then walk down the hill to Hollis Street, and gather in the courtyard of the Art Gallery of Nova Scotia. Please keep your mask on during the meeting unless you are speaking. They say that as Chair I am exempt from this rule, but I tend to put mine back on as well.

Now what I'll get committee members to do is introduce themselves for the record by stating their name and constituency. I'll start with Ms. Leblanc.

[The committee members introduced themselves.]

THE CHAIR: For the purposes of Hansard, I will also recognize the presence of Legislative Counsel Gordon Hebb and Legislative Committee Clerk Judy Kavanagh.

As I said in my opening remarks, the topic today is improving cardiac arrest outcomes in Nova Scotia. We have a number of witnesses with us today, so before we get started, we'll get the witnesses to introduce themselves, starting with Dr. Sapp.

[The witnesses introduced themselves.]

THE CHAIR: Perfect. Thank you, everyone.

We are allowing witnesses to have some opening remarks. I think we've extended a little bit of time for this session. I see here in my notes that we have a specific order. I believe, Ms. Rand, you'll be starting with opening remarks.

KATHRYN RAND: That's correct, thanks. Good afternoon again, everyone. I just want to start by saying that I'm honoured to be here today with my colleagues from Emergency Health Services, the Nova Scotia Health Authority, and the IWK Health Centre. I want to start by thanking all the committee members for inviting us to talk about this incredibly important topic of improving cardiac arrest outcomes - or to put it plainly, saving more lives.

Cardiac arrest is when the heart suddenly stops beating. It's not the same as a heart attack. A good way to explain it is that a heart attack is like a plumbing issue. It's when the blood flow to the heart is slowed or blocked. A cardiac arrest is more like an electrical issue. It's when it shuts off and stops beating. Not surprisingly, this is going to lead to death if it's not treated immediately. It can happen to anyone, at any age, any time or place, without warning. Cardiac arrest signs include sudden collapse, being unresponsive to touch or sound, and not breathing normally.

The key to improving survival rates involves equipping Nova Scotians with the equipment needed to provide a layer of protection to cardiac arrest victims when an emergency strikes - a similar sentiment to the all-too-familiar public health recommendations of masking and physical distancing as a layer of protection against COVID-19.

The first step is for a bystander to recognize when someone is in cardiac arrest, and have the knowledge and tools to jump into action. The first action to take is to call 911 or your local emergency number. The next step is knowing how to perform high-quality, hands-only CPR or cardiopulmonary resuscitation. This involves pushing hard and fast in the centre of the chest with one hand on top of the other. Think of the beat of "Stayin' Alive" for about 100 to 120 beats per minute. This must be continued until an ambulance arrives.

The next critical step involves the use of an automated external defibrillator (AED). AEDs are safe and simple to use. The device will analyze the heart's rhythm and, if necessary, deliver an electrical shock, or defibrillation, to help the heart re-establish an

effective rhythm. These amazing devices tell you what to do. You simply need to turn one on and follow the voice prompts. We believe providing these lifesaving skills and tools takes the luck out of cardiac arrest survival and constitutes a non-partisan public health issue that all Nova Scotians can get behind.

Collectively, our four organizations have been collaborating for years on cardiac arrest outcomes in Nova Scotia, and a lot of great work has happened over the past decade. However, we want to seize the opportunity to ensure that all Nova Scotians are equipped to respond to a cardiac emergency just as they've been trained to respond to other emergencies.

If you were only to take away four highlights from the presentation today, we ask that it be this: We want to create a generation of heroes, embedding CPR and AED education into school systems. We want to ensure everyone knows how to restart a heart by increasing awareness of cardiac arrest, so that every Nova Scotian will recognize cardiac arrest and know what to do. We want to free the AEDs by transitioning registered AEDs from inside locked places to fully accessible outdoor cabinets that will be available for use 24/7. Lastly, we want to invest in breakthroughs by prioritizing a cardiac arrest research strategy that embeds evidence into policy, practice, and change.

THE CHAIR: I have Dr. Sapp as the next speaker.

DR. JOHN SAPP: Thank you again for the opportunity to join you today. As I mentioned earlier, my name is John Sapp. I'm a cardiologist, and I do a lot of clinical research, specializing in life-threatening cardiac arrhythmias. This is near and dear to my everyday life. I am a cardiologist specializing in heart rhythm problems, so I have the privilege of meeting the survivors of cardiac arrest and their families. It never fails to move me when we are standing around the bedside talking instead of that family being at a wake.

When someone survives a cardiac arrest, our job is to look for what caused it. We investigate them in every way that we can, and sometimes we find a reversible cause - something that can be fixed. If there's something fixable, we fix it. Oftentimes there is pre-existing heart disease that can't just be fixed, so we have to protect those patients with an implantable defibrillator. That's a device like a pacemaker. It's implanted under the skin with wires in the heart, and it can - just like Mr. Janczyszyn - shock that person's heart back if they have a cardiac arrest.

When a cardiac arrest strikes, we only have a few minutes to act - a very few minutes. Cardiac arrest is usually caused by dangerous racing of the heart. It's racing so fast that it's not really pumping, it's almost just quivering. If you could give it a shock with a defibrillator - either a paramedic with a defibrillator or an AED that a bystander with very little training follows the directions and slaps on and pushes the button, or in some cases, an implanted defibrillator - that person might just wake up and say, what's going on?

We have a very few minutes before the lack of oxygen is damaging - about four minutes before irreversible brain damage begins. Thereafter the survival drops by about 10 per cent per minute. CPR, just by pushing on the chest, keeps some blood flowing and can prolong that window. It can often prolong it long enough to prevent brain damage, organ damage, until somebody can get there with a defibrillator - so CPR increases the chance of survival.

Out-of-hospital cardiac arrest affects about 1,000 Nova Scotians every year. About 500, by the time somebody has recognized what happened and calls paramedics or calls 911, it might be too late, or perhaps the arrest occurred during sleep, and nobody noticed. But in 500 there is time to act. When the paramedics get there, they try to save that person. It turns out that in Nova Scotia, about 50 to 60 per cent of the time, CPR has been applied in those patients, and of those 500 patients, roughly half are transported to hospital. Unfortunately, only about six per cent manage through all this to get discharged at the other end - so about 60 patients a year roughly, of that 1,000 patients.

That's the problem that we're trying to address. If we could get CPR more widespread in the community, if the community recognized what's actually going on and had the courage and knowledge to just act immediately, they could change those numbers.

We don't need to do a show of hands, but I'd bet that if we did do a show of hands, 80 or 90 per cent of you would put up your hand if I asked who knows somebody who died of a sudden cardiac arrest. Family, friend of a friend, a grandfather, an uncle, a cousin - it is all too common, and oftentimes it has a profound effect on the family. It's not slow. It's sudden and there is no chance to say goodbye, and all too often it is tragic. The unfortunate reality is that the large majority of patients do not survive a cardiac arrest.

I'd like to recognize Sofia Gouthro, upstairs behind me, and her family. She's in Grade 3. Sofia had no warning signs. She was totally healthy when she collapsed in school. I'd like to recognize Mrs. Stickings as well because she's a hero. (Applause) Mrs. Stickings is an educator. She acted immediately and provided CPR for seven and a half minutes. That's a critical seven and a half minutes. You remember what I said about four minutes. She provided CPR, and here's Sofia. (Applause)

When cardiac arrest strikes, seconds count. People with heart disease are, of course, at the highest risk, but it can happen to anyone at any age, any place. Calling EHS and doing CPR, combined with an AED, results in the best chance of survival and the best outcomes. An effective response system depends upon us as a community to rescue one another to provide that first aid until our specialists can get there.

We describe the Chain of Survival. Those are the steps that are needed to allow people to survive a cardiac arrest. The first link in the Chain of Survival is recognizing a cardiac arrest and calling 911. Bystanders need to recognize that when someone drops, it's not time to stand back and be afraid. It's time to step up and take action.

Step 2 is the provision of CPR early and having it be effective. Step 3 is the use of an automatic defibrillator. Step 4 is EHS, my colleagues here. Step 5 is advanced life support and hospital care in the intensive care unit. Step 6 is rehab and recovery, for many. The success of each link critically depends on the other links. We're here to talk to you about the first three to four links to get patients - so that I get to meet them afterwards.

[2:15 p.m.]

Katie already mentioned the four things that we would like to ask you to support. The first is that we'd like to raise a generation of heroes to be like Mrs. Stickings by educating Nova Scotians. Part of first aid care should be knowing how to recognize and provide CPR when somebody drops. None of us would hesitate if we saw blood spurting from a cut to immediately put pressure on. This is the same thing. It just needs a little more education.

Second, we want to provide more awareness of cardiac arrest to Nova Scotians. We call that getting people to know how to restart a heart. Third, we want to free the AEDs - Mike will talk to you more about that - and invest in breakthroughs and research.

I guess I'd like to point out that this is government's opportunity - or I guess I should say an opportunity for the entire Legislature, I hope - to be a hero. How often do we get to actually save somebody's life? I think this is a way that we could all save more lives.

THE CHAIR: Thank you, Dr. Sapp. Dr. Dhillon.

DR. SANTOKH DHILLON: Once again, thank you so much for inviting us. It's a pleasure to meet you all.

I am a pediatric cardiologist, like a mini version of Dr. Sapp, working with children. I also see children surviving cardiac arrest and remarkably, when they get timely help, they recover, just as we saw with Sofia.

Education and awareness can help people in Canada recognize the signs of a cardiac arrest and empower them to call 911, perform timely hands-only cardiopulmonary resuscitation, or short-word version CPR, and uses an automatic external defibrillator, or AED.

Schools are the hearts of our community. Preparing students to help victims of cardiac arrest could save the life of a child, parent, teacher, or others out in the community - just like Sofia. School-based interventions allow for a broad reach encompassing all communities regardless of socio-economic status, race, and ethnicity. We wish to create a generation of heroes by placing CPR and AED skills in the confident hands of all students.

In general, students learn fast, they act swiftly, they multiply awareness and knowledge - they share knowledge with their family members - and they retain skills for a longer time. Research from other countries shows that cardiac arrest survival rates improve significantly when CPR and AED education is integrated into school programs.

We are less concerned about the type of education or training used, as long as it is feasible, effective, repetitive, and self-sustaining. The good news is that there are educational programs out there that can be completed within one classroom. We will be doing some pilot research in the coming Fall about one of these programs in Nova Scotia schools, and I look forward to sharing our findings with you later on.

In closing, I would like to read aloud a letter from another student who recounts the day her friend saved her life:

> My name is Dakota Miller, and I am 16 years old. This past Summer, my life was saved by my best friend Vanessa 'Nessa' Colford. I live a very active lifestyle. I love dancing, biking, swimming, and running around with my friends. On August 29, 2021, I had left for the day on my bike to hang out with my friends. I bike to Nelson which is where I hang out with my friends as many days a week as I can during the Summer.
>
> On this day, like any other, I packed up my bag and headed out for the day around noon. When I arrived in Nelson, I met up with my friends and began our usual day of laughing and being a typical teen. Little did I know that this would be the day that would change my life and my friend Nessa's forever.
>
> Around 2:00 p.m. that afternoon, I suddenly collapsed and was unresponsive. I have amazing friends who acted quickly and are the reason I am still here today. One of my friends quickly called 911, and then called my mom to tell her what happened. My best friend Nessa quickly started to do CPR - this is why I am alive today. Nessa has had no CPR training and only knew what to do from watching videos and movies and seeing CPR performed on a screen. She said that 'no one was doing anything' and she had to do whatever she could to save her best friend's life.
>
> I will forever be thankful and indebted to her for saving my life. Her quick action and willingness to try something she had only seen in videos saved a life - mine.
>
> I think it is important for all teens to learn CPR. Teens are often off on their own and not around adults or near anywhere

> where they may receive help. If my friend had not had the courage to try to perform CPR, even though she did not know exactly what she was doing, I may not be here today. I wish all teens would take time to learn CPR and how to possibly save a life. You just never know when it may be needed.

Thank you.

THE CHAIR: Thank you, Dr. Dhillon. I have Mr. Janczyszyn next.

MIKE JANCZYSZYN: Thanks again, everyone, for allowing us to be here. I have the privilege of being in the presence of really smart and expert professionals right beside me to my left and right. Really our goal here today is to have a discussion on how to improve sudden cardiac arrest outcomes in Nova Scotia.

The good news is that collaboration between government and health care partners, including Heart & Stroke, the Nova Scotia Health Authority, IWK, and EHS, has developed a lot of the tools we need using evidence-based practices. The most important tool, as both my colleagues here have mentioned, is the AHA Chain of Survival: recognition and calling 911, performing high-quality CPR, and using an automated external defibrillator (AED) as soon as possible.

That's where the EHS AED Registry Program comes in. Enhanced in 2017, the registry is built on four main pillars: integrating with the EHS Medical Communications Centre; maintenance of AEDs; volunteer responders; and also awareness, promotion and education. These benefits are exactly why it's important to register your AED with us. We are approaching 1,700 registered AEDs throughout the province right now, but we know there are more out there in Nova Scotia.

It is the awareness, promotion, and education piece that will have the biggest impact on potentially saving lives. Our goal and desire is to have AEDs become a normal feature of daily lives across the province, in the same way that people see fire extinguishers. We want people to notice where they are so they can act quickly.

We have done great things so far with the partners that we have, but we need more help to get us where we want to be. With the support of all Nova Scotians, imagine a future where people survive cardiac arrest. Imagine the general public saving lives of all ages because they learned CPR. Imagine walking into every building that has an AED and knowing that there is one easily accessible so you know your co-worker, your family member, or your friend could potentially be saved within a moment's notice. Imagine going for a bike ride in Victoria Park in Truro and seeing an AED right there in front of you and knowing you have the tool to save a life if that were to happen right in front of you.

With our partners, we have started that trend, that culture change, and we need everyone's help to continue. I guarantee that anyone listening to the presentation right now will be more aware of AEDs in their communities because they are now thinking about it. The awareness piece is so powerful in saving a life.

I want to bring up someone who has stuck with me throughout my role here as the coordinator since starting in 2017: Jordan Boyd. Jordan was an aspiring hockey player - 16 years old. He was drafted to the QMJHL in June 2013, and selected by the Acadie-Bathurst Titan. On August 12, Jordan attended his first team practice and was in peak physical condition, having trained in Halifax during the months leading up to that date. I am shortening this story due to the time we have, but Jordan collapsed suddenly during this practice and went into sudden cardiac arrest. He had an inherited heart condition, which no one knew at the time. Unfortunately, Jordan did not survive.

I bring this up for two reasons. One, we know that sudden cardiac arrest can happen to anyone, anywhere, at any time. Also, two, the QMJHL has learned through the tragedy the value of CPR training, an emergency response plan, and the value of having an AED nearby.

On a larger scale, we all need to know the importance of saving a life. I do also want to recognize that Stephen and Debbie Boyd, Jordan's parents, are also in the viewing gallery today. It's with this in mind that the EHS AED Registry Program, in collaboration with the Jordan Boyd Foundation, has donated and placed AEDs in locations across the province, including several which are outdoors and available to the public 24/7.

Over the weekend, we hosted a CPR by the Sea event at one of those publicly accessible AEDs on the Halifax waterfront. People of all ages stopped by to learn about CPR and how to use an AED. There are more events like this planned for the future. All it takes is for one of those people to be at the right place at the right time to use their skills to help save a life if they witness a sudden cardiac arrest.

Thanks again for having us here today. Hopefully we can help save more Nova Scotians in building awareness and learning about the Chain of Survival.

THE CHAIR: Thank you. Dr. Travers, I have you as our last.

DR. ANDREW TRAVERS: Thank you for your time and attention. My name is Andrew Travers, and as mentioned, I'm the Medical Director for EHS, but also staff physician. Most recently, I'm one of the Medical Communications Centre physicians who's embedded in the communications centre over in Dartmouth.

I do want to take a moment to recognize the Nova Scotians whom we have lost. With Jordan, in terms of lessons learned since 2013 - Michael Fowlie, the loss of him in 2014; Kelly MacPhee in 2020; and April George in 2021. Those families have helped

move the needle and move the discussion so we can make more heart-safe communities in the province. I'm truly thankful for their being brave families and bringing their concerns in terms of their loved ones, in terms of how they unfortunately did not survive their cardiac arrests.

I do have the good fortune of seeing that Chain of Survival being built in real time in the role that I have at EHS. From the dispatching of health care providers and the notification of volunteers to the scene, to the provision of telephone CPR to those bystanders, through to the closest available AED, these links provide the most powerful links compared to anything that Dr. Sapp or Dr. Dhillon or I can provide in emergency departments or in hospital. The links can be strengthened by making sure there's improved access to advanced resuscitation whether it's the ambulance, the community hospital, the regional hospital, and all the appropriate post-arrest care that should happen when someone gets a pulse back.

It's important, if patients don't survive, that the recovery of those bystanders, their families, and the health care providers is an incredibly important link in that Chain of Survival. The first time that that Chain of Survival has now really included that important recovery link.

I'm here to hopefully strengthen that Chain of Survival and to improve cardiac arrest outcomes. To do that we need continued research, we need quality improvement, we need program evaluation, we need contractual performance, and whatever evaluation method we're using. We want to accelerate the ability of research to translate into policy and practice changes in the health care system and within communities.

Had it not been for research, doing CPR and the use of an AED would not be known as the essential life-saving actions they are today. More breakthroughs like these could be around the corner when the conditions are set for novel, innovative research to flourish. That's what Nova Scotia is. We have that opportunity.

It's through partnerships between the Department of Health and Wellness, the Department of Education and Early Childhood Development, the IWK, the Health Authority, Heart & Stroke, St. John Ambulance, the Canadian Red Cross, and all the other first aid providers in Nova Scotia that we're in a unique position within Canada to enable heart-safe communities to be built - not just in the urban settings, but the remote settings, the rural settings of Nova Scotia.

I'm proud - I'm confident that we have the collaboration, we have the culture, and we have the systems to be the most heart-safe province in Canada. Thank you very much for your time and attention.

THE CHAIR: We move into the question-and-answer period at this point. Each caucus gets 20 minutes of questions with answers. After those 20 minutes, depending on what time we have allotted left, we will give each caucus another round of questioning.

[2:30 p.m.]

I will remind everybody, I'll be chairing this, so in order to get it on Legislative TV, I'll let you know when you can speak. I'll be going from MLA to witness. After we're done with Q&A, there will be closing remarks as well, if anybody has closing remarks.

After the 20 minutes with each caucus, there's almost like a cold stop. I will basically stop it right at 20 minutes, so if you're in mid-question or answer and I stop you, I do apologize for that. With that being said, the Liberal caucus has the floor for the first 20 minutes, and I will go to MLA DiCostanzo. I see your hand up.

RAFAH DISCOSTANZO: Thank you all for the information that you provided, especially Kathryn. I really enjoyed when I read in the notes how you described heart attacks as plumbing, and the other one as electrical. That really stuck in my mind.

I know that with plumbing we can prevent it a lot easier because we know it's over time, whether it's cholesterol, whether it's other things, but with the electrical - one of the doctors can explain - it happens so suddenly. Is there any indication, or does the heart maybe slow things? I was thinking as I'm reading the notes, we're all wearing those Apple watches and other things. Are these able to detect anything ahead of time to give us more time? If you could answer that one as well, I'd really appreciate it. Dr. Sapp maybe. Whoever knows the answer.

JOHN SAPP: I'm happy to try to answer some of that. You're right - the electrical problems are often more sudden onset. The most common dangerous rhythms occur in people who have heart disease already of some kind. Sometimes we know that the heart disease is there, sometimes we don't. There's been a lot of research and effort to do that. There are a lot of cardiac arrests that are prevented every day by identifying people at risk. We put in defibrillators for people who are at high risk, and we treat their heart disease as best we can. That takes the strain off the heart and reduces the chance of things going suddenly bad.

In a proportion - I can't give you an exact number though - cardiac arrest is the first presentation in those we can't predict. There's been a lot of hope - maybe a little more hype than hope - about Apple Watch and other wearables, but there's something there. I'm sure that we'll be able to turn some of that technology into some kind of predictive algorithm. That's some research that's actually being worked on actively.

RAFAH DICOSTANZO: I was hoping you'd say that, and I'm grateful to hear that. Hopefully, it will advance. I know my husband wears this thing to know how many steps

he has and all this, the heartbeat and how many hours of deep sleep. So if they can get that, they should be able to get something on the heart as well.

The other thing is the training. I was thinking, what can we do as MLAs? I mean, we have events. I used to have my barbecue. Seven hundred people show up. I bring a lot of different stakeholders and health community members just to give information. I will make sure that I can - if you let us know who to reach out to, we can invite you and just do a quick one so many people are exposed to it. If you have things for social media, we have a 2,000 to 3,000 people reach as well. Whether it's a video, and if it's short, we'd be happy to publicize for you.

I thought about myself. Would I be able? I think I'd just panic. I will call 911, I will press on this, but getting the defibrillator - I haven't practiced it, so after this session, I will make sure I know how to use it.

The other thing that I was thinking of: We put it in schools, which is fantastic, but schools are 9:00 a.m. to 3:00 p.m. What happens in the evening? Are there other things that you're looking at? For example, I was thinking pharmacies. Do they all have AEDs?

MIKE JANCZYSZYN: That's probably a question for me, I guess, where I have a lot of data from the registry. There are some pharmacies out there that do have them, but it's not a very broad spectrum of pharmacies that do. I mean, there are AEDs throughout the whole province right now.

What we really focus on right now - we're still focusing on it now that we're even four or five years in - is trying to get people to understand the importance of registering their AED so that we have an idea of where these are throughout the province. It's one of those things where the more we get registered, the more we have a good layout of what's out there already. We have placed some AEDs strategically throughout the province already. Some of these, like I mentioned in the opening remarks, are publicly accessible AEDs.

You bring up a good point of when things are closed down or just open from 9:00 a.m. to 3:00 p.m. We really want to - and it's kind of been brought up in the opening remarks too, that kind of catchy phrase - "Free your AED"-type thing. We want to bring AEDs out. Whether they're in businesses right now that are in locked offices, locked cabinets or wherever they are - you know, as soon as you walk through the building, you kind of see it right there and then so people are thinking about it throughout the day - that if anything does happen, it's right in front of me or I know exactly where to get it.

With these accessible AEDs, kind of like the one by the waterfront - we now have four throughout the province right now in different regions of Nova Scotia - they're fully accessible. They're heated in the Winter, they're vented in the Summer, and they're fully accessible for people to take, if needed, if someone goes into cardiac arrest.

I'm not sure if that totally answers your question. I know there are some people who play basketball outside of schools and have the basketball nets or the soccer fields. We'd be willing to work with anyone to try to get some outdoor cabinets to schools, and get some AEDs there, so that it's more of a community use as well.

RAFAH DICOSTANZO: Just as a follow-up to that, are these locked up? Or are they free, just like fire extinguishers? Is it something that we can access easily? Can I have one in my office, for example? How does it work to obtain those?

MIKE JANCZYSZYN: You're referring to the cabinets? The AEDs?

RAFAH DICOSTANZO: The AEDs, yes. Are they just in a box?

MIKE JANCZYSZYN: A common misconception is that people think AEDs need to be plugged in or near somewhere, but they don't. They're all battery operated. They could be anywhere. You could have one at your cottage. You could have one on your vacation. You could have one at a wedding. They're very mobile right now.

A lot of them are in cabinets that you might see as you walk into a building, but those are all unlocked cabinets. You just open the door and take one, similar to the AEDs that we have in outdoor cabinets right now. Literally, you just pull the door open. There is an alarm that sounds so that people are aware that it's being taken, but they are free to use. We don't want them locked up. We want the reverse of that. We want them out in the open. We want them freed. We want people to use them if they're needed.

We want people to not be scared of them, as well. A lot of people will walk by them and say, I don't know how to use that, and I don't want to touch that. That's not what we want. We want people to be curious about them and know exactly what they are and what they do.

RAFAH DICOSTANZO: Thank you. If I have a second question, it goes to Dr. Dhillon, if possible. We know that you started working with the Heart and Stroke Foundation to make sure that we have them in schools. You were very involved in that. In March, I believe, we added another 350 when we were in government. That was a big deal at the time.

I just wanted to know how much of a difference that made, if you can tell us more about the advantages that we've had. Have they made any difference? Have you heard anything about them?

THE CHAIR: Dr. Dhillon.

SANTOKH DHILLON: Thank you for asking this very great question - a practical question. We don't have accurate data, because it's going to take many years to get

accurate data of how many times it was used and how effective those AEDs were. But the results from other geographies, from the States, from Europe, show that where AEDs are available in the schools, the survivals are higher.

It has also been known, as I mentioned in my opening remarks, that schools are the hearts of a community. It's not only that students go there for education. There are multiple other community activities that happen there after school. It is known that survival is higher wherever AEDs are available in the schools, in those communities. It also increases awareness, as Mike mentioned. People are curious about the devices. They want to know what it is, and that increases awareness as well.

It is a well-established fact that it improves the survivals in the community. I don't know exactly about Nova Scotia. That's what we are also embarking on - having good research collaboration. Maybe down the road in a few years, we'll get accurate data.

RAFAH DICOSTANZO: I'm just going to pass it to my colleague, and if there's time left, I'll come back again.

THE CHAIR: MLA Maguire.

HON. BRENDAN MAGUIRE: Thank you so much. My question is around what Dr. Sapp said about the urgency to receive health care when you need it and the very limited time that people experiencing cardiac arrest have. Obviously, we've all had people impacted. I just had someone from our community - a huge community leader - pass away last week from cardiac arrest.

What concerns me about this, and the urgency around this, is that we're seeing paramedic times, ambulance times get longer. There was a motor vehicle accident not too long ago - not in my community, but the community over from me. Speaking to friends of mine who are paramedics, it was over an hour before the paramedics were able to arrive.

This has got to have an impact on survival rate. It's maddening to think that people are passing away from cardiac arrest because, no fault to the paramedics, they're not getting there in time. A lot of times, they're stuck in the emergency rooms, they're stuck at the offloading. Again, I'll say I have a lot of friends who are paramedics, and I would say about 70 per cent of them are on short- and long-term disability. To quote one of them on the weekend, I'm out of here. That's what he said to me.

This is a very concerning issue when it comes to cardiac arrest and the impact that the paramedic EHS service is having. How do we fix this, because it's getting worse? We're seeing more and more people on the family doctor list - it's at an all-time high. You go down to the emergency room any day of the week, and there are people down there for issues they should not be at the emergency room for, but our poor paramedics are picking them up, dropping them off, and waiting.

My question is: How do we fix this so that people get that timely service?

THE CHAIR: Is that directed to Dr. Sapp?

BRENDAN MAGUIRE: Whoever wants to take that one.

THE CHAIR: Dr. Travers.

ANDREW TRAVERS: Thank you so very much for bringing that issue forward. You're 100 per cent correct. This is the whole premise for why we have to change the system, and that's what's actually happening right now.

Just some examples of that: When people call 911, as opposed to asking questions just for that small window, dispatch and resources - we're asking a lot more with a primary specialist in the comm centre, a physician in the comm centre. We find more information about that patient, so we get the right resource to the right patient at the right time for the right reason. Again, that's just during that response phase.

Trying to find those predictors - not all cardiac arrests present as a person who is in cardiac arrest. It can be that they had chest pain, it can be that they've actually collapsed. We don't know what it is, it's the third person who's calling in, so we need to ask more to get those resources there in a timely fashion. You're correct, the bystanders are optimizing the chain of survival by doing the chest compressions in that window of time that they're there. As Dr. Sapp mentioned, that extends the window that we can then save that person.

Another example is the other processing: getting critical care involved, even mobilizing those resources to get them to the resuscitation centre - and that, many times, is in Halifax. Making sure that communities are safe, it means we have to do things differently with the Nova Scotia Health Authority. We're already working on that with examples of bringing patients directly to the waiting room so we can go directly back out to 911 calls. We're working with the Nova Scotia Health Authority and the IWK to minimize that offload footprint and making sure that paramedics are back out there as quickly as possible.

We're learning from the Nova Scotia Health Authority and the process of refining the system moving forward. You are absolutely correct. We need to make sure that link in the chain of survival is strong and robust - as strong as the bystander CPR and as strong as the bystander AED use is - to ensure the survival of that patient. If we don't, all that work that we put in place then becomes derailed. I share the same concerns as you.

BRENDAN MAGUIRE: My follow-up to that - and then I'll pass it back to my colleague - would be that it seems to me we're going to have to rely more on the public to save people who are in cardiac arrest because of the offload times and the time it takes to get to the individual who is experiencing issues. People who are calling for reasons that are

concerning to them but really - we know that people are going to the emergency room for prescription renewals and things like that. That's clogging up the system. I think it's very depressing when I speak to paramedics, and I think everybody has had a hand in this.

[2:45 p.m.]

When will we see real results? Every day that goes by, there are a thousand people a year, as Dr. Sapp said - that's close to three people a day who are going to be impacted. When will we see those results where paramedics are going to be freed up to do what needs to be done and back on the road, and at the same time, having the workforce that they need to be able to take vacation, to be able to take weekends off and things like that so that they can decompress? They're only human too.

ANDREW TRAVERS: Again, Mr. Maguire, I concur with you. We need to make radical changes. Some changes are taking place June 1st - as an example of steps to reduce that offload time - by bringing patients in the system quickly, being able to offload to return back to communities. I just wanted to make sure that Nova Scotians, if they're in an emergency, don't delay calling 911. We will build that chain of survival, regardless of where they are.

The trick to it that is we're asking more questions and matching resources to that patient's need, and we don't want to be reliant on Nova Scotians to fill in a gap in the health care system. We want to ensure that people have the confidence in EHS so when a crisis is happening, we're able to respond to them in a timely fashion. Maybe medical first responders and paramedics arriving on scene, again, as they're responding, we're anticipating the next link to build that chain of survival for that patient.

I hear exactly what you're saying. I share the same concerns as you. How quickly those effects are coming into place - we're moving very quickly on it. I believe our executive director was here two weeks ago before the standing committee, talking specifically about these issues: paramedic recruitment and strategies with both the IWK and the Health Authority.

I can get back to you more specifically about the timelines on those, but I don't want to lose sight of that importance of improving that bystander awareness of what to do when someone collapses. Even with the fastest EMS system in the world, you can't get there in that first two minutes, three minutes, and four minutes - especially in rural and remote areas of the province.

It's critical that regardless of how the health system's behaving, that people know what to do and how to do it. That begins by calling 911, following the directions that we give with telephone CPR, but even more importantly, having that community conversation about what we can do about knowing CPR and AED use.

THE CHAIR: Dr. Sapp wanted to speak to this.

JOHN SAPP: Just very briefly, thanks for bringing this up. I'm not in charge of any of that, but I'd love to see us make Nova Scotia a harder target for cardiac arrests, just like we did for COVID. You know, we're all wearing our masks, we're washing hands and keeping physical distancing when we need to. When COVID tried to hit, that blow was softened because we were way more ready for it than many other populations. If we're more ready for cardiac arrests, we can buy ourselves those extra minutes.

Being in a rural area makes it harder to survive a cardiac arrest. That's some of the research that we've done. There are a lot of ways we can improve that. We do have to count on each other more when we're not immediately next door to the hospital. We have to look after each other until help can get there, and that buys more time.

I hope that we can attack all of the problems that are plaguing our health care system at the same time, and I hope this is one of them.

THE CHAIR: MLA DiCostanzo, you have 20 seconds

RAFAH DICOSTANZO: Okay. I was just going to thank them, and if we could somehow include MLAs - I was going to suggest that for every government worker, we make it mandatory to do the CPR training. Force us, because we should be, and we have a higher reach. That's all.

THE CHAIR: Perfect timing, well done. We will move on to the NDP question period for 20 minutes. MLA Leblanc.

SUSAN LEBLANC: Thank you very much for all of your work and for being here. I just wanted to ask a little bit more about the AED system and how we can improve that. I did work with a constituent of mine who is a parent of a person who did not survive a cardiac arrest, a very healthy person. My understanding at that time - it was a while ago now - was that the AED that was actually happened to be nearby was not registered, so I introduced legislation. I forget what it was called now - an AED registry bill or something like that.

What I'm hearing right now is that it feels like one of the things we need to do - and I would just like your opinion on this - is to mandate AEDs in certain types of buildings. I think about churches or places of worship, places where large numbers of people gather, where it's actually quite easy to have an AED there or close by, or schools, as we've heard. What was the other one I thought of that was really brilliant? Believe me, it was a brilliant idea.

I think it's important that we actually mandate it, that we actually make it law that if you have or are in charge of this type of space, you need to have an AED there. Whether or

not you can pay for it, that's another question, but government should be coughing them up so that we make sure that within a certain number of kilometres or whatever, there is one there - and then, of course, it's mandated to be registered. Our bill was talking about how you had to register your AED. I don't know how you enforce that, but anyway.

So just a thought on that, if that's something that's being worked on? And then I have some more questions. Anyone - Mr. Janczyszyn?

MIKE JANCZYSZYN: My colleague, Katie, and I have had that discussion quite a bit already. It's one of those discussion points. We've really tried to balance out if making it mandatory is really going to increase the registrations. When implementing the PAD program - the Public Access Defibrillator program, otherwise known as the AED Registry program - we tried to follow a lot of research.

We followed a little bit of research out of Toronto that was Canadian research and stuff, trying to figure out where the best locations were. Their suggestions were places such as coffee shops and banks - ATMs and stuff, which were some of the ones at the top of our list. From there, we didn't want to deter people. If you make it mandatory, are people going to get rid of their AED? If they don't fall under that kind of legislation, we definitely don't want to deter people from getting them.

It is one of those hard points to fight: Which one is going to benefit us the most? Through research and what Dr. Travers and all the doctors here have been saying, more research might tell us or give us a better idea of where the best locations are so far. So we've been trying to follow that research. What we've been trying to do is really increase our outdoor access as well to 24/7 access to try to - if you have one building or two buildings, you have one AED outside both, then you're now implementing that whole community aspect of an AED.

It's not something that we've said is a bad idea. It's just one of those things where we're not sure if that's going to really improve it. We know that Ontario is going through a process like that right now. We're eagerly watching that to see how that goes. I don't know if Katie wants to add.

THE CHAIR: Ms. Rand.

KATHRYN RAND: I think the only other thing I would add is that we are actively looking into research that's going to map out where all the AEDs currently are on the registry around data surrounding cardiac arrests and where they're happening, so that we'll be able to uniquely pinpoint exactly where there may be - I'm using the term "AED deserts" - communities where there's lack of AED coverage but there might not be in other areas.

For example, if you're just mandating it blanketly in all churches, that may or may not be a necessary place of coverage, because that church may already have an AED or there may be an AED next door that's accessible enough to that church, so that if someone were to have a cardiac arrest, they would be able to get it within time for it to be useful.

The idea of having that research is taking that more pinpointed approach to come back with concrete recommendations. Our hope is that within the next year, we'll have more concrete recommendations for government to say: here are the places where we really do see the gaps and here are where the AEDs need to be placed that haven't already been.

THE CHAIR: Dr. Travers.

ANDREW TRAVERS: I'm not an administrator. I learn from my administrative colleagues at EHS, but as we enter tourist season and hopefully a lovely Summer, I find it interesting that during large gathering events there's rigour and policy around food preparation and requirements about dispensing of beverages and food. I think that same rigour needs to then be addressed in terms of the health of patrons who are there, and not necessarily be reliant on a health authority or the IWK or EHS to be the proxy for it.

I think as part of the planning for some of these things, there are some conversations around it. If we're talking about food safety at an event, I think we can talk about the overall safety of those large gatherings, young and old, getting together.

SUSAN LEBLANC: I think that's really true. In my former life, I planned a drama festival for high school students, or I would apply for a liquor license for a fundraiser for my theatre company. Even in that case, if you have to apply for a licence for something, why not make that a stipulation - that there is an AED on site somewhere if there's a gathering. Love that idea.

I'm also wondering about the education piece. I was thinking back - I'm a child of the 70s/80s in the school system. Stop, drop, and roll, in terms of a fire safety mantra, is something that was drilled into my head. I'm not sure if it still is. I haven't actually discussed this with my children, but I can tell you this: because of my learning in elementary school, my children know how they're getting out of the house if there's a fire.

I don't know if they've discussed that with their own teachers, but it's something that's always been a part of my awareness of safety. I remember learning about it really young, and how to move around a house if it's on fire.

I wonder, what is the best plan, or is there a plan yet for an approach to education in public school? What would you love to see from our Department of Education and Early Childhood Development in terms of who's learning? I would also say that I learned CPR when I took swimming lessons, and I learned CPR when I was teaching in a school, but I

couldn't tell you right in this moment how many times you're supposed to do the thing before you breathe. I don't remember that.

How often do you have to refresh that - or is there a sign in places where it just reminds you? I'm just wondering about what work is going on in terms of that education piece. I guess that's to Ms. Rand.

THE CHAIR: Dr. Dhillon had his hand up.

SANTOKH DHILLON: Excellent question. From your own example, you know that if you learn a skill young, you retain it longer. CPR learning, awareness about cardiac arrest, education about cardiac arrest, knowing the signs, doing CPR, applying AED - all these are built into the school learning programs. This is just like learning any other skill, like a soccer skill, like a tennis skill. If you start young and be repetitive, you'll retain longer.

Children in general are very receptive. They learn quickly, and they act very swiftly. I can use a short example. I was in the Canada Games Centre, and someone in the pool collapsed. Before I even got there, the children were already on top of it. One was trying to see if the person is breathing, the other child was trying to open up the chest to do CPR. That person didn't need CPR anyway, but I looked at the actions. They didn't hesitate. As adults, sometimes we do hesitate, but they didn't hesitate because they learned the skill. They're confident. That's why we are asking that these children need to learn in a classroom in the school, in a structured program, and it needs to be repetitive.

Next is, how often it needs to be done. The research has shown, the more often you do, the more likely you will retain. Every geography has different policies and regulations regarding learning in the school, but we know that at least students need to have it two to three times before they graduate. Again, we need more research to know exactly how often they need.

This is just like any skill. As we get older, we sort of lose some of the skills, but repetition is important. I hope I answered your question.

THE CHAIR: Ms. Rand, I see your up.

KATHRYN RAND: The only other thing I wanted to add is that Nova Scotia is part of a research pilot site. Four different provinces are looking at a unique, new way - we're not really calling it CPR training. We're calling it CPR education. The name is called Cardiac Crash. It's an immersive, documentary, engaging series that actually walks students through a teacher having a cardiac arrest. Then they do perform two minutes of CPR and learn how to apply an AED. Here in Nova Scotia, we'll have five different sites and we'll be looking at Grades 7 to 9, so we have been working with the Department of Education and Early Childhood Development. The hope is that once we have those

research findings, we'll be able to utilize that to inform implementation here in Nova Scotia.

[3:00 p.m.]

SUSAN LEBLANC: Wondering, Dr. Sapp, if we have 1,000 cardiac arrest incidents in Nova Scotia a year? I read somewhere in my research for this meeting that there are about 35,000 in Canada. Is our percentage of cardiac arrests pretty high for Canada?

JOHN SAPP: I think that's probably on par, kind of, if there are 35,000 across Canada. The data on this across the world is actually a bit fuzzy because it's hard to capture accurately. We usually estimate somewhere between 300,000 - 400,000 in the United States, and then we've extrapolated that to Canada to be somewhere around 30,000 - 40,000 since we're about a tenth of the size. That roughly works out to somewhere in this range.

SUSAN LEBLANC: I'm wondering if you can talk a little bit about any data that we have on income, or race, or gender in cardiac arrest incidents and cardiac arrest outcomes in Nova Scotia?

JOHN SAPP: Funny you should ask. We did publish a paper on this just in the last year. It's on urban versus rural, and it's attached in the package. There's a link to it.

We don't have granular data on that just because the only source that we could have from the data was from Mr. Janczyszyn and his colleagues, and what they gathered in the field when they saw the patient, and then we tried to link it to outcomes and so on. The numbers that I gave you were based on that research. One interesting piece of it is that survival rates are worse in rural areas by quite a bit.

We have a saying in cardiology when someone has a heart attack: time is muscle, and minutes count. When a heart attack starts, it's a plumbing problem - you know, a blocked artery in the heart - and we've got to get that artery opened. Every minute that goes by, there's more damage to the heart. In a cardiac arrest, seconds count.

Like I said earlier, if we can open that window by having a population who's a harder target for cardiac arrest, who are more robust and resilient to that awful event when it happens, maybe we can change those numbers.

SUSAN LEBLANC: I'll just ask one more quick one, sort of, and then I'll pass it on to my colleague. This is for anybody on the panel.

We've heard about education, we've heard about the more higher prevalence of AEDs. What else should the government be thinking about in terms of all of this? We could

talk about paramedics; we could talk about more cardiologists. What are the things that need to happen in Nova Scotia to improve?

ANDREW TRAVERS: Ms. Leblanc, I think there are a number of initiatives - there's so much low-lying fruit to be able to celebrate what happens in Nova Scotia. February is Heart Month, and we should as a collective approach that at a provincial level. There's World Restart a Heart Day that happens in October, and we should get that into peoples' lexicon.

I think that we're talking about education of students. However, when any Nova Scotian right now call 911, they get telephone CPR instructions in addition to epinephrine administration instructions, in addition to aspirin administration, in addition to naloxone, in addition to AED access. Your care begins when you call 911, and these five interventions done by bystanders - chest compressions, defibrillation, EpiPens, aspirin, naloxone - save lives. That's done by bystanders, but we've been like that for over 10 years. We're not celebrating that we have the backbone of a heart-safe province. I think that there are wonderful opportunities of celebrating what happens.

Many people don't know, when someone has a heart attack in rural Nova Scotia, the paramedics administer the same clot busters that any emergency department do. They may not have access to the cath lab, because time is important, but they get those lytics earlier. You hear of bad stories in the newspaper - whether it's a heart attack, cardiac arrest, a stroke, a major trauma - but for as many bad stories as there are, there is a magnitude of more positive stories, and we need to celebrate those. We need to show the public that they can have trust in EHS, the IWK, and the Health Authority, by publicly reporting those positive clinical outcomes that we're achieving within the province. We're not doing that, and I think that's an easy win for us.

I'll hand the opportunity over to my colleagues here for the other things we can do.

THE CHAIR: Any further comments? Mr. Janczyszyn.

MIKE JANCZYSZYN: I'll be quick. I know your time is running out. You did touch on two of the main factors there. When you look at a lot of the research, the two main factors are CPR education and how to use an AED, and then the placement of AEDs. You put both of those together, and then you get people walking down the chain of survival and recognizing and understanding what sudden cardiac arrest is and calling 911.

We're repetitive with the chain of survival there, but those three things are really what we can do as Nova Scotians, as community members, to really move the needle in terms of survival. When we're talking about CPR and AEDs, we're talking about seconds, minutes. If you can get on the chest and do CPR in 30 seconds and get an AED on there in a minute, then you're winning the battle there for sure. You're giving that person the best chance of survival.

THE CHAIR: MLA Lachance, you have about three minutes.

LISA LACHANCE: I was going to say that I'm really excited by a lot of what we're hearing, and I love the idea of the five things that we can do to be a heart-safe province. It's all the positives. What I was wondering was: When people die as a result of cardiac arrest, is there a debrief process? Is there a body? Do you all sit and look together at the end of the year at what the gaps were? Can we say this is the chain to survival, but in Nova Scotia, this is where the chain is weakest?

MIKE JANCZYSZYN: That's a fantastic question. It's somewhere that we want to be in the near future with the program. There's a lot of research right now based out of Toronto and Dr. Katie Dainty. They run the bystandernetwork.org website, and they get all those stories. They want to reach out to people. There are my colleagues for PAD programs around the country as well who are starting to debrief the people who are part of these situations.

I can't lie to you: We need to do a better job of seeing those people as patients as well. We're starting to know through research that those people are going to be more apt to do CPR again, and use an AED, and be part of a rescue event if they have a little bit of closure from the first event.

We are learning. We're working on it. We actually just recently had a bystander reach out to us who, in a virtual room of paramedics, told us his story on the events. It was kind of an eye-opener for a lot of us as paramedics. I'm sure it would be an eye-opener for everyone in terms of the situation.

It's something we want to work towards. We definitely have some barriers there, because it's trying to link up those bystanders and the patient. Obviously, we need to protect people's privacy, so that's definitely a factor. It can sometimes be a challenge to find who was part of that, but it's definitely something we need to be better on.

THE CHAIR: MLA Lachance, you have 24 seconds.

LISA LACHANCE: What can I ask? Maybe when we come back, we could talk a bit more. Dr. Travers, you talked about evaluation and performance-based contracting. I'd love for you to elaborate more in terms of what's in place and what information is coming.

THE CHAIR: That was great. Twenty-four seconds wasn't much time. We'll now move on to the PC caucus's chance to speak. MLA White, I see your hand up. You can begin.

JOHN WHITE: First, I want to thank you for coming in today. I want to share with you that I am a medical first responder in the Glace Bay Volunteer Fire Department. Unfortunately, I've done CPR many times and applied an AED, mostly unsuccessfully, but

I will tell you that as a result of my training, I was able to help my father in my own home when he had an emergency. He's still with us today because of training, so thank you very much.

Our government values the impact of heart - sorry, I'm a little bit distracted. You guys know where I'm going with this. As a medical first responder, in all the times I've answered calls, the faces are flashing through my eyes as I'm talking to you. That's what's happening here right now. I apologize.

Thank you so much for coming in today. Improving health care is a priority of our government. Just today, we announced a new EHS initiative that will allow paramedics to take non-critical patients to the emergency room where they'll be seen by health professionals, which gets paramedics back on the road quicker and able to respond faster.

Again, as a medical first responder - I said this two weeks ago with Kevin and the guys who were here - when you guys show up, you are the faces of angels to MFRs. I have so much respect for what you do day in and day out, non-stop. We answer a call, and we don't get another one for a couple of days later. You guys do it day in and day out, countless times. I can't thank you enough for that.

I do want to make sure you're aware of the initiative, which is going to help get you back on the road quicker as well.

To get away from AEDs - I know that they're utterly important. I know that we need them everywhere and anywhere. I almost believe we need them in our backpacks. I understand that. But I do understand as well that they're limited and successful in certain circumstances. I believe the percentage is very low.

Could you tell us a little more about what your organizations collectively are doing to improve cardiac health in Nova Scotia? I realize that's a common goal of all of your organizations. This is really out to any of you. Are you able to share any of the strategies that you guys are using to collectively support cardiac health in Nova Scotia?

THE CHAIR: Dr. Travers.

ANDREW TRAVERS: Thank you, Mr. White, for that question. I'll be very brief. I think just to reflect that teachable moment that paramedics have with Nova Scotians in the back of an ambulance during any 911 call or when paramedics are with our colleagues in their community, at home when they're not transported to hospital. That happens in about one in three 911 calls. I think that there's a teachable moment that paramedics and patients have that can advance that heart wellness of things for patients.

I've bought some time for Dr. Sapp and Dr. Dhillon to come in, but I think that is an illustration of what we're doing, from an education standpoint, to improve the heart health.

On the other side of EHS was the example of just recognizing that when patients have acute cardiac issues - whether it's a heart attack or cardiac arrest or heart failure - we bring them to the proper type of hospital for management, and then as well as discharge from hospital. We've partnered with the Health Authority where paramedics are involved on the discharge of patients back into the community until continuing care can kick in to help manage their heart failure, to manage their dysrhythmias.

[3:15 p.m.]

I think it's very exciting how paramedics, nurses, cardiologists, emergency physicians, and family doctors are working together in a uniform way to move both into the emergency department and out of the emergency department.

THE CHAIR: Dr. Sapp.

JOHN SAPP: I guess what I can tell you is that we're not doing enough for primary prevention. I'd love to say that we were really reaching out into the community and able to be really effective in smoking cessation, in healthy eating, in an active physical lifestyle - if we could really get that message out. We are trying.

I'll speak from the Maritime Heart Centre at the QEII. We work through, of course, all the patients we see, but also through our network of linked family physicians and specialists across the province, and primary care providers, to promote all of those to the citizens of Nova Scotia.

We also do have a cardiac rehab program that's very active and growing. COVID has not been good for it, but it's looking good that it'll be getting back up and running. We've had fundraising efforts for healthy kids initiatives in the past as well.

I guess I'll still say that Nova Scotia, our population, could do better with all of those efforts, but we're trying.

JOHN WHITE: I appreciate your answers. Thank you very much. I think, Ms. Rand, you mentioned earlier about the program that's coming out for Grades 7 to 9, so it's kind of in relation to that. What I'm wondering is: Are there any campaigns out there that are teaching school-aged kids about their own cardiovascular health? Are you aware of any campaigns now that help teach kids that?

KATHRYN RAND: What I can say is Cardiac Crash is specifically around CPR and AED education, and will be targeted to Grade 7 onward. We do also have what's called our HeartSmart Kids programming that's targeted for a younger demographic, Grades 4 to 6. It explains things like the circulatory system, heart healthy behaviours like living a smoke-free life, physical activity, healthy eating. It is a free resource that's available on our website. That is one thing that we do.

JOHN WHITE: I'm passing it over to MLA Barkhouse.

THE CHAIR: MLA Barkhouse.

DANIELLE BARKHOUSE: Interestingly enough, about a month and a half ago, I went on a mission to find the unregistered AEDs in my community. I've sent them emails asking them to get registered. Hopefully, they take my advice, because it could save a life. How would groups and organizations in a rural area know where to locate an AED near them? Is there a certain website?

MIKE JANCZYSZYN: There is a website. What we've actually gone along with is a website called www.savelivesns.ca. It's kind of an all-encompassing website for anything CPR- and AED-related, and potentially for future endeavours as well. Right now, there is a link off that website for any Nova Scotian to go to, or anyone really, who wants to click on it to see where the AEDs are located in their communities right now.

The only caveat to that is that it is a voluntary map, so I can tell you right now that there are some registered AEDs for us that would be linked up to the medical communication centre that are not exactly on that map due to it being a voluntary map. Some people may want their AEDs left private, and we respect that decision.

DANIELLE BARKHOUSE: That's fair. I spent 17 years in the health care profession, and I've been out for 12 years. I find it interesting the difference in technology and things. I don't even want to add the years up. It makes me feel old.

Can you tell us a bit about the maintenance of the existing AED network? Has it changed over the years? That could be to Mr. Janczyszyn.

MIKE JANCZYSZYN: Are you talking about specific maintenance of the AED itself?

DANIELLE BARKHOUSE: The network, how it's changed over the years, and the maintenance of it in comparison to registered AEDs and whatnot.

MIKE JANCZYSZYN: We did have what was an Excel worksheet from 2011 to 2017. Then in 2017 it got enhanced to using a more advanced network and integration with a medical communications centre. We first introduced some volunteer responders. That's part of the system as well, where it automatically notifies responders through a text message or phone call. Then the call-taker approach is a separate piece from that. That's totally different, where if you call 911, it's a complicated algorithm, but if everything is met, then they can actually direct someone to the nearest AED.

We are looking for future technology. We're never resting on status quo here. We are hoping to get more technology, potentially in terms of a phone app, in the near future as well. The pandemic really slowed that progress down as well.

DANIELLE BARKHOUSE: I just have one more question before I pass it on to my colleague. In your experience - and this could really go to Mr. Janczyszyn or anyone here - how often do you see bystanders not using the AED due to being unsure of how to use it? I'm just wondering if you see that more often than not. They could be afraid.

MIKE JANCZYSZYN: I'll start, and then I think Dr. Sapp is going to continue. It's one of those things where we do see people afraid to even get near the box or the cabinet that's on the wall. They don't want anything to do with it. They think that if you open the cabinet, something wrong is going to happen. But we do want people to be curious about them.

I think it was part of Mr. White's comments or questions - with the schools, from a program perspective, we saw AEDs in the schools as just an overall win for the program. It served the functional use of getting AEDs in there, if anyone did go into sudden cardiac arrest, but also - like Dr. Dhillon mentioned - it's there on the wall and it's there for people to learn.

We're hoping that those children who are going through the school systems won't be scared of those cabinets anymore and they'll have a little bit more sense as to what they do. Then when they graduate, they'll go into businesses in other parts of Nova Scotia and they'll see them, and they won't be afraid to use them. I don't know if that totally answers.

THE CHAIR: Dr. Travers.

ANDREW TRAVERS: Ms. Barkhouse, thank you for that question. Anecdotally, I can share with you it seems to be less of an issue of people accessing an AED if they knew it was there. What seems to be the issue right now, in terms of that hesitancy, is the recovery part of the chain of survival. Wanting to go back and say, are you okay, and actually having that conversation, developing that culture of quality with those bystanders.

People are a bit hesitant to say, did I do something wrong? No, in fact, we want to unpack that conversation, whether it's medical first responders, whether it's bystanders, of having that recovery link, and then actually celebrating successes. You used the AED, so you get a bronze link in the chain of survival. You actually had the AED and it was actually used early in this timeframe, so you get a silver link in the chain of survival as a recognition. Getting that culture of quality reviews is one of the things we need to overcome, and any help we have on that would be greatly appreciated to help move that needle.

THE CHAIR: I see MLA Palmer - you have approximately seven minutes.

CHRIS PALMER: Thank you very much for being here this afternoon. I love this committee because we learn so much from medical professionals. I would also like to just take a minute to thank the families for coming this afternoon. Your participation here is very important, and thank you for having the courage to share your stories. Your contribution to this conversation is going to improve outcomes for many Nova Scotians, so I do thank you for coming before us today.

We talked a little bit about the chain of survival here this afternoon. I'm just going to maybe focus a little bit on prevention and lifestyle. I may have already missed it, but we talked about heart attacks being plumbing, cardiac arrest being electrical. Would you say that they share the same risk factors? Is there any data that shows what the risk factors are? We see that they're all over the map - different age groups, different whatever. In your research, have you been able to identify those common risk factors or lifestyle issues?

JOHN SAPP: That's a great question, Mr. Palmer, thank you. It's amazing that the heart works at all. It's quite complicated, as you can imagine. That thing beats in your chest about 100,000 times a day, and each time it beats, an electric wave passes through the heart muscle and tells each cell to contract. Then it has to reset. It has to do it perfectly every time.

There are a number of things that can mess up that process. Sometimes it's just a little abnormality that you've inherited that's not quite bad enough that you can't be born and grow up, but it maybe makes you more vulnerable to something - a virus attack or a drug that unexpectedly has a bad effect.

There can be that kind of thing, or you can develop a problem with the heart muscle. Sometimes that's a virus infection of the body that affects the heart, or the most common, of course, is a heart attack, and those have common risk factors. A lot of those first things, there's not a lot of lifestyle modification that's going to change that, but the most common cause of a bad enough heart injury to cause a cardiac arrest is a heart attack. That is, as we've said, a plumbing problem.

The factors that damage the arteries of the heart are the things that we talked about a little earlier - smoking, high blood pressure, diabetes, and a few other lifestyle factors that are modifiable. Of course, there's an enormous genetic component there, as well - cholesterol and a few other things. Those are all things that we can try to modify. The healthier the heart is, the more resistant to bad rhythms it is.

THE CHAIR: Dr. Dhillon.

SANTOKH DHILLON: Thank you for the question. I'm just going to add a few points to Dr. Sapp's comments. Some of those conditions, people are born with them. Sometimes they show up earlier in childhood, sometimes later on. It's important to recognize those diseases, or illnesses, or heart conditions. It not only saves that person's

life, but it also saves the family members. Sometimes it might be in other family members, so you pick up those before anything happens to them. In that way, it's sort of like Mr. White's point - it's like a (Inaudible) prevention, sort of like preventing right in the community. That also helps.

In children in general, we have seen that most of the time the children do not have any underlying, known condition before it happens. We have mentioned two children today in the meeting, and they both have been perfectly healthy before that, but it helped to recognize other family members, sometimes. That helps to save their life as well. Just to add that point.

JOHN SAPP: I just wanted to acknowledge that we have the Jordan Boyd Inherited Heart Disease Clinic at the QEII that addresses exactly that. It tries to do that cascade family screening when one person turns up.

CHRIS PALMER: Before I pass on, Mr. Chair, I'd just like to say that we're learning that we're all part of the solution today. As MLAs, we have a broad reach to reach many people, so the awareness piece is very important. I just want to give a big shoutout to Jump Rope for Heart. For my kids, every year growing up through school, it was one of the best things they looked forward to doing. The awareness has been out there a long time, but we can do better. Thank you very much, and I'll pass it on to my colleague, MLA Smith.

THE CHAIR: MLA Smith, you have a minute and 22 seconds.

KENT SMITH: Perfect, it's all I need. No preamble, going straight into the question.

Ms. Rand, what lifestyle educational resources does the Heart and Stroke Foundation offer to individuals looking to improve their heart health?

KATHRYN RAND: I think the best thing to do would be to visit our website, www.heartandstroke.ca. We cover all of the different risk factors, and we have various health information publications that they can do - everything, from smoking cessation to healthy eating, to physical activity.

We're actually just part of a program, speaking about smoking cessation, called Smoke Free Curious. It's a national program that we're running right now in partnership with the Canadian Cancer Society that actually supports individuals across Canada to have access to NRTs to help quit smoking. If that's something that's an issue with someone, that's a great resource as well. Everything can be found on our website.

THE CHAIR: MLA Smith, 30 seconds.

KENT SMITH: Mr. Janczyszyn, we've talked a lot about the EHS AED Registry Program. How can we all help improve uptake in the AED registry?

MIKE JANCZYSZYN: This is a community program. It's got the EHS logo on it, but really, it is owned by the community - it's owned by Nova Scotia. We need everyone's help to a) register the AEDs that you have already . . .

[3:30 p.m.]

THE CHAIR: Order. This is the first time I've had to cut someone off today. I know. MLA Smith did it to me.

We have approximately five minutes per caucus for a second round of questioning, so we'll start with the Liberal caucus. MLA DiCostanzo.

RAFAH DICOSTANZO: Perfect, and thank you. We're in the right lane, so I will let you finish that, if you'd like. Ms. Rand said all the risk factors and preventing. Tobacco and smoking are high on the list, but I'm also concerned about - and the Cancer Society are putting it on the list as well - combatting sugar and diabetes.

I wanted to know from any of the doctors, where is diabetes in increasing the heart risk to both the plumbing and the electrical - if you can control those. Give us some information.

JOHN SAPP: That is a huge issue. I guess to speak about diabetes in particular, we're increasingly aware of how profound an impact diabetes has on vascular health. High sugar levels have all kinds of metabolic effects that can damage the arteries of the heart. There's a whole metabolic cycle that is - as you might expect - quite complex that adversely affects cardiovascular health.

RAFAH DICOSTANZO: What I'm really trying to address here, or hoping - I'm very scared at times. I was very proud when we increased tax and restrictions on vaping and tobacco's become okay to tax, that we can put information on the packages and whatever. We've done very well when it comes to tobacco, and we should be doing the same about sugar. I would really like to do something, but it's very controversial.

How can the society help make an awareness of sugar, and what else can we do to prevent - especially from the start? I literally have to go to four stores to find cereal that doesn't have sugar added. I have to find bread without sugar. We put sugar in everything. I'm just wondering if you guys are doing anything about it, or how I can help in promoting this as well?

THE CHAIR: We can start with Ms. Rand.

KATHRYN RAND: I can certainly start. I can say that Heart and Stroke, from the national perspective, is quite involved and interested in the overall Canadian Healthy Eating Strategy. Things like having front-of-pack labelling on our food, for example, so that you know the level of sugar content. Things like warning labels, so you actually understand what high sugar content means.

The other thing I think is really interesting to point out is that in Newfoundland and Labrador, they actually did introduce a sugar-sweetened beverage levy - so what you're talking about right now, essentially: a taxation on sugary drinks. It'll be very interesting to see the research from Newfoundland and Labrador, to see if the outcomes actually do decrease consumption. We do know from places like Mexico, where they have implemented this type of levy over a number of years, that we have seen decreased consumption. So it's certainly something that could be done.

THE CHAIR: Dr. Dhillon.

SANTOKH DHILLON: It's a very concerning issue. We used to see the diseases in older age, but now we are seeing them in children. Childhood obesity - one-third of children in Canada are obese. When I say "obese," they are at quite a heavy weight - it's not a goal weight. It's just like the definition of obesity. Those children are at a high risk of high blood pressure, atherosclerosis - the plumbing diseases of the heart. They are also children who are actually having mental issues as well as a consequence of that.

This is a gravely concerning issue. Every time we see children in the clinic, we try to do our best to teach having a healthy lifestyle, but it has to be multi-pronged. All the stakeholders should take part, including society, parents - everybody should be a part of that. Otherwise it's going to be a huge impact on society in the coming years. I'm happy you raised this concern. Thank you.

THE CHAIR: MLA DiCostanzo, you have 25 seconds.

RAFAH DICOSTANZO: I just wanted to say thank you. I'd like to meet with one of you just to discuss it further, if that's possible. Thank you again.

THE CHAIR: We will move on to the NDP with five minutes. MLA Lachance.

LISA LACHANCE: I did ask a question leading off the last time, so I'll turn it over to Dr. Travers to talk about the types of evaluations and data that you're collecting at this point.

ANDREW TRAVERS: Thank you for the question. I think if you looked at us clinicians, the word we use is "research." When I'm at EHS, when I'm with my administrative colleagues, we call it "program evaluation." When we're with our regulatory head, we're talking "contractual performance."

I think that whether it's an old individual or whether it's a young person who's had a cardiac arrest in Nova Scotia, if we measure what's happened to them and their outcomes, and we measure performance, it's going to help each of those domains. I think that's the key thing. The Heart & Stroke Foundation and the American Heart Association have given us some of these resuscitation performance benchmarks and performance measures that we can use, and I think that's the exciting part.

How we evaluate it, whatever lens we're using, I believe that we should be reporting that back to Nova Scotians. I think we should be reporting back to our other colleagues across the country in the form of research and publications, and I think we should be going back and learning from everything that we're doing.

Again, I can't emphasize that enough. I think EHS has been in resuscitation for many decades now as a collective. I think we're in a very unique circumstance in Nova Scotia to inform the best practice. I think we would have bragging rights as being one of the most heart-safe provinces in Canada, let alone North America, if we do things effectively like this.

LISA LACHANCE: I don't know who might want to pick this one up, but I'm wondering, in terms of maintaining that heart-safe status, what the impact - all of this is taking place in a health care system that's under enormous strain and is in crisis. If we go from prevention to immediate response, as well, but wondering about the impact of things like ER closures, understaffing in ERs, vacancies in terms of specialists, cardiologists, or folks not having the chance to get to a family doctor: What sort of impact do those pressures that exist in the health care system currently have on the programming you want to do and outcomes?

ANDREW TRAVERS: I think Mr. Maguire raised the same questions. I think we're in unchartered territory. I think COVID has put tremendous pressures on the system. Whether you're a community member, a first responder like our colleague Mr. White, whether you're a paramedic like Mr. Janczyszyn, whether you're an emergency physician or emergency nurse, whether you're a cardiologist, we are in unchartered territory. But when someone does have a cardiac arrest in Nova Scotia, if they access 911, we can build that chain of survival despite all those obstacles.

Yes, there are some changes happening today and tomorrow and the next few weeks to come, but even despite all those problems, we have this collaboration. We have this opportunity of getting patients back. I think, as you see in the viewing chambers behind us, we've got success stories. I know we have also some Nova Scotians whom we've failed, but we've learned from them, and those conversations have changed the system substantially. I think that despite all the issues the health system is facing, we still have the opportunity of improving cardiac arrest survival.

When I came to Nova Scotia, the cardiac arrest survival was 3.3 per cent overall to hospital discharge. The work that Dr. Sapp led with the research in 2017, it was 12.5 per cent. Even in that short time frame, we had a fourfold increase in the cardiac arrest survival. We need to let Nova Scotians know that, and that's the public reporting that we'd like to get back into.

THE CHAIR: MLA Lachance, you have a minute and 20 seconds.

LISA LACHANCE: I asked the question previously about debriefing. Amongst the team, there is a critical response that's done to analyze when people are lost to cardiac arrest. Related to that, when EHS is responding and you need to go further to access an ER than previously or than you would like, how much can you stabilize someone en route?

ANDREW TRAVERS: I think Nova Scotians should understand that every ambulance is a mini-emergency department. Our formulary has over 50 medications, compared to most EHS agencies in Canada that have maybe 10 or 12. I think that we can do a lot, whether it's the back of an ambulance or a tiny emergency department or a big emergency department. But we cannot emphasize it enough that the odds of survival - despite everything we do as clinicians - pales compared to the odds of survival if a bystander knows what to do by doing chest compressions and accessing an AED.

THE CHAIR: Order. It was close. We almost got there. We have five minutes left for the PC caucus. MLA Smith.

KENT SMITH: Thank you, Mr. Chair. So I have time for a lengthy, lengthy preamble now that I have the full five minutes.

I think it was Dr. Sapp who said in his opening, if we asked everyone to raise their hand whether they could identify someone they knew who'd had a cardiac event - I'm no different. I'm not special. My grandmother, my father, my uncle all had cardiac issues and they all presented differently.

I guess Ms. Rand might be the best one to answer this. Does everyone present similarly? Are there any differences between men and women, how they present with cardiac incidents? Dr. Sapp.

JOHN SAPP: That's a great question, and the answer is that they totally do not present the same way at all. There's actually some data - and I'm not an expert on this - that women on average present a little bit differently with plumbing problems than men, maybe with a little bit less specific symptoms and harder to recognize. It's actually been a big effort of Heart and Stroke, to try to address that directly in our health care response.

There's a vast array of different presentations of heart disease. We could be here a long time to address all of those.

THE CHAIR: I see Ms. Rand has her hand up as well.

KATHRYN RAND: I just wanted to make a quick comment in relation to women's heart and brain health. Heart and Stroke has just launched a women's heart and brain health initiative and are actually going to be coming out with a public awareness campaign on the unique signs and symptoms of women and heart disease. You can find a lot more information on the website. Just to direct people there, if they do have questions.

KENT SMITH: Thank you very much, and thanks again to everyone for being here. I'm going to pass it on to my colleague, MLA White.

THE CHAIR: MLA White.

JOHN WHITE: Obviously we recognize that the health care system is under extreme pressure. We're working very hard to improve that. That's why in the Action for Health strategy, the plan we announced for funding for chronic disease management programs is to provide support for those living with chronic disease.

Dr. Dhillon, could you speak to the importance of chronic disease management in heart disease and its role in preventing cardiac arrests?

SANTOKH DHILLON: Absolutely, thank you for the question. I'm not an expert on this topic, but what I can say is that in the families also is a place of some role modelling. In the family, the members who have chronic conditions also affect the children, the younger ones. Certainly, it teaches them the preventions right from the beginning, so the children are aware of what's going on with the family members.

For example, if multiple family members have heart conditions, then the children are aware. That's the real opportunity to emphasize the prevention, because the children see how the chronic disease can be fatal in the family.

JOHN WHITE: In the few short minutes we have, what about Nova Scotians who are already dealing with cardiovascular conditions? Can you offer any solutions or strategies that they can do to help manage their own risks. I realize you only have a minute left.

SANTOKH DHILLON: That's not my area or field. Maybe John can answer that question better than me, but I think there is an opportunity.

THE CHAIR: Dr. Sapp.

JOHN SAPP: Mr. White, that's a great question. I'm glad to have the opportunity to speak to you and to congratulate you on being able to have the skills to help your dad when it mattered. Like I said, that story never fails to move me.

The things we can do to manage our own health are manyfold. Risk factor reduction, as we talked about - that's blood pressure, diabetes, smoking cessation, healthy eating, the right amount of sugar, the right amount of salt in your diet, physical activity - all of those things.

[3:45 p.m.]

You asked about chronic care and living with chronic conditions. After there's been a cardiac injury with a heart attack, living with heart failure is just a key, important thing . . .

THE CHAIR: Order. The time for question period has expired. At this point, we have some time for closing remarks from witnesses. Does anybody have any closing remarks? Dr. Travers.

ANDREW TRAVERS: I may hand this off to Dr. Dhillon and Dr. Sapp for further closing comments, but just on behalf of some of the resuscitation stakeholders that I work with in the communication centre, the emergency department, and with Heart and Stroke, I just sincerely thank you for your time and attention.

We hope that you can see providing CPR and access to AEDs throughout the province - for anyone who's experiencing a cardiac arrest in urban, rural, remote communities, that alone is going to increase their chances of survival. It's by educating our youth around CPR and AEDs, we will ensure more generations of Nova Scotians will survive.

The lessons learned in Nova Scotia can be applied to any community in Canada and in any province. Thank you very much for your time.

SANTOKH DHILLON: Thank you very much for giving us time and your wonderful questions. I would just like to use this moment, because I'm going to again emphasize the education and awareness. Whether it's happening in a school, whether it's in the community, large gatherings, wherever, we have an opportunity to support the awareness regarding cardiac arrest or heart attacks. Also, how important it is learning the simple skill of CPR - anybody can learn. Even a young child, a 10-year-old, can do effective CPR and know where AEDs are available and how to apply. The first thing is calling 911. They're always there no matter where. Thank you.

JOHN SAPP: I would like to thank you for the time today, and would like to encourage you to help us raise a generation of heroes, raise a generation of children who know what to do when tragedy is about to strike and can change that course.

We've talked about a few interventions that we think are the low-hanging fruit, relatively easy things that can make a big difference: teaching our children how to provide

first aid with CPR when it's needed, increasing awareness, making AEDs more readily accessible - they should be like a fire extinguisher. You walk in, you know where it is. Maybe you just file it in the back of your head. Finally, to support us in trying to do more research to provide better outcomes.

THE CHAIR: On behalf of the committee, I really want to take the time to thank the witnesses for coming. I think a number of my colleagues mentioned how important it is and for us to learn and hear, and also hopefully be supporters of it. I'd also like to thank the members of the gallery who came here today as well. We appreciate the awareness that you're bringing. (Applause)

That concludes our time with you today. Certainly, again, thank you for your time. If you have correspondence or you have anything you'd like to share with our committee, you can send it on to us and we'd be happy to send it to the committee members as well. We'll move on with committee business. We have a little bit of committee business to go through, and then that will conclude our meeting.

We have a couple minutes to go through committee business. If you look at the agenda, we had some correspondence emails between the committee clerk and the deputy minister regarding postponing scheduled appearance on the vaccine booster shots. This document was forwarded to the committee members on May 25 and again yesterday. Is there any discussion on that item?

Seeing none, the second item is the agenda setting meeting. MLA DiCostanzo.

RAFAH DICOSTANZO: I actually sent an email to Judy as well. We're just hoping that both Dr. Strang and Ms. Lagassé will be there for the September meeting.

THE CHAIR: I think we saw from that correspondence that they were looking to find out what the dates were in August and September. That's my understanding.

RAFAH DICOSTANZO: August or September.

THE CHAIR: Ms. Kavanagh.

JUDY KAVANAGH: I did send them the dates of our August and September meetings. I haven't heard back from them yet.

THE CHAIR: So, once we get that, maybe we'll share that with the committee, once we know what dates are available, and we will have them there.

One other item is that the agenda setting meeting has been moved from the July meeting to the June meeting. I thank all committee members for getting back to the clerk on that one. We're trying to get our list of topics to Ms. Kavanagh by tomorrow, and then

she'll be able to send out the full list to all committee members hopefully next week. Then we'll all have time to look at them, and then we can discuss as a committee the following week.

Is there any other business? Going once, going twice. Excellent. Our next meeting is on June 14th from 1:00 p.m. until 3:00 p.m. - or is it 1:00 p.m. to 2:00 p.m.? We did 1:00 p.m. to 3:00 p.m. last time. Ms. Kavanagh.

JUDY KAVANAGH: Our regular committee meeting time is 1:00 p.m. to 3:00 p.m. For agenda settings, we normally schedule it just for one hour, so I think on the calendar it's going to be 1:00 p.m. to 2:00 p.m.

THE CHAIR: So we have 1:00 p.m. to 2:00 p.m. If we discuss it at that time and we need more, we can talk about it, but our committee is the agenda setting from 1:00 p.m. to 2:00 p.m. on June 14th.

This meeting is adjourned. Thank you, everyone.

[The committee adjourned at 3:51 p.m.]