



CANADIAN MEDTECH: WHAT'S HOLDING US BACK?

2018 Waterloo Region MedTech Conference

Wednesday, October 24, 2018

Hosted and Organized by:



2018 WATERLOO REGION MEDTECH CONFERENCE

The 2018 Waterloo Region MedTech Conference, hosted and organized by Waterloo MedTech, was held on Wednesday, October 24. It wove the ideal balance of no-holds-barred storytelling, policy insights, and pertinent panel discussions.



Key Outcomes

The Conference provided possible solutions to the roadblocks. Key outcomes from the Conference included:

1. Murray Gamble, President of The C3 Group of Companies, called for the Waterloo Region community to come together to create an incubator specifically for medical technology, life sciences, and healthcare start-ups. Resources dedicated to this group would address the unique challenges they face in bringing their innovations to market.
2. Several speakers, including Armen Bakirztian, CEO and Co-founder of Intellijoint Surgical, and Neil Fraser, President of Medtronic Canada, indicated that healthcare companies need to engage with the government to drive forward the proposed actions put forward by the Economic Strategy Table: Health/Bio-sciences.
3. Mentors and key influencers need to act on the lessons learned from start-up to scale-up failures and successes. This will foster successful growth amongst Canadian top medtech start-ups. This includes those featured in the Conference's Innovation and Start-Up Showcase.

CHANGING THE FOCUS



Dr. Doug Dittmer,
Physical Medicine and
Rehabilitation Physician

"In Waterloo we have our outstanding technological ecosystem and incubators with proven success, our outstanding postgraduate institutions, the Perimeter Institute, our nanotechnology center, and the latest winner of the Nobel prize in physics, Dr. Donna Strickland from the University of Waterloo. We need to find a way to come together to make this happen because if we don't, the outcome for our health system and our economy is unthinkable."

"Our first two conferences focused on barriers to healthcare innovation, procurement rules, privacy restrictions and the perceived walls around our hospitals and our clinics to entrepreneurs and innovation. We hope to change that focus. We heard from companies and individuals who have taken on that challenge and are creating breakthroughs and new jobs." - Dr. Doug Dittmer

WHAT'S HOLDING US BACK?

Intelligent Surgical co-founder and CEO, Armen Bakirtzian, shared the real-world struggles that Intellijoint faced in scaling. Unfortunately, the Canadian healthcare system is typically not the first customer for Canadian medical technology firms. He highlighted three hurdles that are preventing many promising firms in Ontario and Canada from scaling up.

- Talent attraction and retention: lack of access to domestic talent
- Domestic capital supports: insufficient domestic capital; start-up funding gap and late-stage
- Domestic procurement: difficulties in accessing domestic customers

Bakirtzian's honesty was reinforced by Dr. Sonny Kohli, co-founder and chief medical officer of CloudDX. "It's a whole ecosystem of stakeholders that are here today

talking about what's holding us back in Canada in terms of scaling innovation and really introducing you to a healthcare system so that we can affect outcomes. It's been a pleasure to speak on stage, and it was probably my most candid and blunt talk that I've ever done. I think it needed to be said."

Dr. Kohli (who along with Cloud DX won the "Bold, Epic Innovator award" in the Qualcomm Tricorder XPRIZE competition), added some humour in his description of how industry, academia, clinicians and start-ups all contribute to the cycle of holding medtech back. He introduced the packed audience of over 200 delegates with new terms.

- Pilotitis: a perpetual demand to pilot in each facility
- Hyperstandardism: visceral reaction to something new
- Fear of unholy alliance
- Risk aversion: a valley of death

"There is a genuine concern for the success of our medtech start-ups in Canada. Pilotitis is death by 1,000 cuts preventing scale in Canadian health care," describes Dr. Kohli. "It infects the entire ecosystem."

SURVIVING FROM START-UP TO SCALE-UP

The lack of organizations and innovation strategies that explicitly focus on scale-ups results in many of Ontario's promising firms hitting the wall and not scaling up.

"We talked about what it takes for start-up companies to go from being a start-up to be a scale-up," explains Paul Salvini, CEO of the Accelerator Centre and Associate Vice President of Research Commercialization at the University of Waterloo. He summarized these key points from the panel discussion. "Take advantage of the help that's available. Don't be afraid to ask

"Take advantage of the help that's available. Don't be afraid to ask for help from people that have had success in the Region in the past. Listen and be able to take advice and direction. Make sure that the product and service that you're developing is properly differentiated. Really understand your customer and get the design right." - Paul Salvini, CEO, Accelerator Centre

for help from people that have had success in the Region in the past. Listen and be able to take advice and direction. Make sure that the product and service that you're developing is properly differentiated. Really understand your customer and get the design right." The panel concluded it would be great to have a dedicated incubator or accelerator in Waterloo Region focused on medical, or more broadly, health technologies.

There are many parallels with Anthony Lacavera's excellent

book "How We Can Win: and what happens to us and our country if we don't". As Lacavera stated, "Innovation is not research. It's not invention. It's commercializing new products and processes and creating value."

HEALTH 3.0 - DIGITAL HEALTH: REIMAGING HEALTH CARE

"Every medical company is now trying to become an AI company," notes Dr. Alex Wong, Canada Research Chair in Artificial Intelligence and Medical Imaging.

Dr. Wong pointed to numerous examples of artificial intelligence (AI) in medicine companies promising to revolutionize medicine with AI. Among them:

- Zebra Medical Vision: Radiology using AI
- Athelas: Blood tests using AI
- Arterys: Cardiology using AI
- Imagia and IBM Watson Health: All of medicine using AI

2018 TOP INNOVATORS AND START-UPS SHOWCASE

Seven start-ups from Velocity, Communitel and The Accelerator Centre in Kitchener-Waterloo were selected as top entrepreneurs to participate in a showcase at the conference. Many attendees noted how accomplished these founders presented their innovations.

Those presenting were:

- Arjumand Ateeq, Founder and CEO, Baysil Inc.
- Bobby Green, Co-founder and COO, Amina Health
- Wayne Li, Founder and CEO, NextUp Care
- Patricia Quinn, Co-founder and CEO, Monarch Collection Inc.
- Spencer Waugh, CEO, Ace Age
- Moazam Khan, Co-founder and CEO, Curiato Inc.
- Noah Debrincat, Co-founder and CEO, SannTek Labs



The President of MEDEC, the Canadian national medical device association, Brian Lewis commented, "I am here because it's important to celebrate the successes that are being achieved across the country. There were a lot of amazing companies that presented here today, and I was really pleased to be a part of it."



Conference Plenary Speaker:

Dr. Rueben Devlin
Chair and Special Advisor
Premier's Council on Improving
Healthcare and Ending Hallway
Medicine

Dr. Wong spoke to the attendees at the conference about the challenges and the realities of machine learning, AI, and deep learning when applied to medicine. He emphasized what is holding us back is the ability to understand what's a problem and where AI can be integrated into the healthcare pipeline - be it in medical imaging analysis, data collection, or data procurement, as well as, converting information into a form that is most useful to clinicians.

Dr. Wong explored the practical challenges of machine learning, which he argued require a different mentality from traditional software design.

- Data collection (Quantity of data)
- Data cleaning (Quality of data)
- Data bias mitigation (Balance of data)
- Data augmentation and synthesis (Growing of data)

AI became a recurring topic at the conference. It was cited by Dr. Mohamed Alarakhia, Director, eHealth Centre of Excellence and CCIO at Waterloo-Wellington Local Health Integration Network (WWLHIN). Aggregate data now exists for 3.6 million Ontarians, albeit that it is not yet been analyzed. There are more than 80 separate patient portals in the province. He noted the potential role of AI in more timely and tailored interventions as one means of modernizing the health system. It was central to Dana Fox from the Institute of Smarter Government's call to action to combat the growing opioid problem affecting so many communities. "The things pushing us forward are greater than what is holding us back," declared Fox.

The plenary speaker at this third annual Waterloo Region MedTech conference, Dr. Rueben Devlin, posed what health care will look like in 2050 and the future role of hospitals. He called for a digital transformation of health care.

"You can do e-banking anywhere in the world, but you can't go 5km in Ontario with your own complete patient health record." Dr. Devlin outlined changes needed in our health system in Ontario to focus on patient outcomes, community service centric and empowered by digital tech. "I see the technology world as a partner," he concluded.

The sentiments were reinforced by Dr. David Rouselle who described the framework impacting innovation in healthcare delivery by physicians. "Telemedicine is still medicine, irrespective of from where or how they practice medicine," explained the Past President of the College of Physicians and Surgeons of Ontario.

Dr. Joe Cafazzo, Lead at the Centre for Global eHealth Innovation and Wolfond Chair in Digital Health at the University of Toronto, explored why healthcare experiences too many innovation failures and cited the design gap as a major reason. Technology has the power to improve healthcare delivery and empower patient self-care, but it has to be designed right. The designers need to understand the cognitive and behavioural aspects of how people deal with technology in the design of their innovation. Getting the design right enables patients to do the right thing.

Professor Lisette van Gemert-Pijnen, Full Professor, Persuasive Health Technology at the University of Twente (Netherlands) provided evidence in how The

Netherlands has re-imagined health care. Her perspective on start-up challenges and reasons why start-ups fail, echoed many other speakers and panelists. Dr. van Gemert-Pijnen showed 2018 IMD World Digital Competitiveness Rankings. Canada was 3rd, and The Netherlands was 11th in the world in know-how necessary to discover, understand and build new technologies. Yet, The Netherlands was 3rd in the level of country preparedness to explore digital transformation while Canada was 12th. Why is this the case? How we address this deficit could be decisive in whether Canada can become a leader in healthcare technology.

"Innovators in health care need to get engaged with the government to review the recommendations that we've [Economic Strategy Table: Health/Biosciences] made and to get behind it. Write to your MP. Download our recommendations and take action with your network."
- Neil Fraser, President, Medtronic Canada

CANADA'S ECONOMIC STRATEGY TABLES: HEALTH/BIO-SCIENCES

Growth Targets by 2025

- Double the number of health and bioscience companies from 900 to 1,800
- Double the number of high-growth firms from 40 to 80
- Double annual exports from \$13B to \$26B

Speaker Neil Fraser, President of Medtronic Canada, points to the terrific international health outcome standards work of [International Consortium for Health Outcomes Measurement \(ICHOM\)](#).

"The key point I'm trying to make is that innovators in health care need to get engaged with the government to review the recommendations that we've made and to get behind it. Write to your MP. Download our recommendations and take action with your network," urges Fraser. "That would be very much

appreciated, and that would help us move the agenda forward for health tech in Canada."

Click to read the [Economic Strategy Table: Health/Bio-sciences](#) recommendations.

MOBILIZED FOR ACTION

"It's time we built an integrated medtech incubator in this community," states one of the panelists, Murray Gamble, President of The C3 Group of Companies. "It would solve many of the problems we have heard about this morning."

We should use this call to action to collaborate with clinicians, start-ups, academia and industry. The gap is for a medtech scale-up solution in the region, more than an incubator. A hub located in a healthcare setting could allow entrepreneurs, clinicians and mentors to work together better.

We just need the will to make it happen.

The passing of Earl Bakken 1924-2018 was a poignant reminder of how a start-up can scale. Bakken co-founded Medtronic in 1949. By the time of his death, it has 84,000 employees and is the biggest medical device company in the world.



INAUGURAL 2018 MEDTECH AWARDS

Start-Up to Scale-Up Award of Excellence 2018 – Intellijoint Surgical

Intellijoint Surgical was the proud recipient of the Start-Up to Scale-Up Award of Excellence 2018 for their commitment to supporting the local economy by scaling within Waterloo Region.

"Intellijoint Surgical's mission is to improve patients' lives by providing every surgeon with effective, easy-to-use technology," explained Armen Bakirtzian, CEO and Co-founder of Intellijoint Surgical. "I am so honoured to accept this award on behalf of the entire Intellijoint Surgical team that works so hard every day to growing innovation and realizing this mission right here in Waterloo Region. We're grateful to be part of the supportive and thriving medtech ecosystem."

Award of Distinction – Agfa Healthcare

The Award of Distinction went to Agfa Healthcare for their ongoing contributions to innovation in technology for health care in the Region. Agfa's presence in the Waterloo Region began as a collaboration with Mitra, a three-person start-up that was one of the first companies to build a Picture Archive Communications System (PACS). Agfa subsequently acquired Mitra in 2002.

"I am very proud in accepting this award on behalf of Agfa Healthcare from Waterloo MedTech," commented Brad Genereaux, Manager Product Management for Agfa Healthcare. "Agfa Healthcare is a player in the health IT community in Waterloo, and I am honoured that we are being recognized for it. We are committed to leveraging the potential of innovative, intelligent technologies, including developing solutions that utilize machine learning and advanced analytics, to help our customers make a positive impact on patient's health, delivery of care and satisfaction, and on the enterprise's clinical, operational and financial well-being. This recognition justifies our continued efforts to innovate in ways that make a real difference."

"Agfa Healthcare in Waterloo has been an upstanding member in our medical technology community since 1991, where formerly as Mitra Inc., developed medical imaging and related software, well ahead of its time, and used all over the world. Their continued focus on innovation and fostering our healthcare community are part of the reason we recognize them with distinction," said Mark Whaley, Waterloo MedTech co-founder.



LEFT: Intellijoint Surgical CEO and Co-founder Armen Bakirtzian (centre) receives inaugural Start-Up to Scale-Up Award of Excellence from Mark Whaley, Shirley Fenton, Dr. Doug Dittmer, Dr. Brian Vartian

ABOVE: Brad Genereaux, Manager, Product Management, accepts the Award of Distinction on behalf of Agfa Healthcare

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ABOUT WATERLOO MEDTECH



Within the Waterloo Region there are many resources for innovators to bring their ideas to market, but within the medical technology area, resources are lacking. In 2016, a team of seasoned experts came together with a mission to address the gap between healthcare research and its adoption in practice thus creating Waterloo MedTech - a program where medtech innovators are provided support in connecting to legal, clinical, and related industry next steps required to take the idea to market.

Waterloo MedTech is building a directory of healthcare companies and resources. It seeks to help

healthcare innovators access the resources needed to bring their idea(s) to market successfully.

Waterloo MedTech founders and directors include: Don Cowan, Founding Chairman of the Computer Science Department at the University of Waterloo and International multi-award-winning scientist and researcher; Shirley Fenton, Vice-President of National Institutes of Health Informatics; Garry Bezruki, former CIO for the City of Waterloo; Mark Whaley, co-founder of multiple national and international start-ups; Dr. Brian Vartian, Chief of Anaesthesia at Groves Memorial Community Hospital.



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A big thank you to this year's Organizing Committee for all their hardwork.

Garry Bezruki
Bailey Binns
Kaitlin de Gouw
Shirley Fenton
John Gregory
Martha Grove

Phil Grove
Guy Lazure
Laurie Lefleur
Rebecca MacIntyre
Jodi Snell
John Tukums

SAVE THE DATE

We invite you to join us next year for the 2019 Waterloo Region MedTech Conference on **Wednesday, October 23, 2019.**

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