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“Future Directions for Simulation, Interprofessional
Education and Quality Improvement in Alberta”

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Thank-you for inviting me to join you today.

I'd like to start by telling you two real stories about simulations.

In the first, an Alberta Children's Hospital Emergency Department team recently spent part of their morning in a simulation exercise. The scenario featured a newborn baby in distress from an undiagnosed heart defect – something they'd never experienced firsthand.

The life-saving but rarely used drug Prostaglandin can keep the blood vessels open and buy some time. It's a difficult drug to draw up for infusion, and to administer.

The team struggled with the diagnosis and with drawing it up. They held a debrief after the exercise, learned some valuable tools, and went back to the ED.

Less than six hours later, a baby only a few days old came in: blue and having a lot of distress. The team was able to quickly establish that they were dealing with a congenital heart defect, and were able to snap into action using the skills from the morning's training – saving the child's life.

The second story took place in a temporary simulation facility on the construction site of the new South Health Campus here in Calgary.

Mockups of rooms being designed for the hospital were being used to run response scenarios. In one of them, a code team was testing an in-patient room.

During the simulation they discovered that if a patient coded in the bathroom, its configuration made it impossible for the entire code team to respond.

The simulation revealed not how the team functioned in the room – but how the room functioned for the team.

Clearly, it didn't, and within 48 hours, every bathroom in every room in the hospital was re-designed.

I share these two stories because the first thing I want to convey to you this morning is Alberta Health Services' absolute commitment to embed simulation in our Quality Improvement practices. To listen, to learn, and to act.

As many of you know, a tremendous amount of work is already underway. We have an eSIM provincial program and a few key organizing facilities. One is at Alberta Childrens' Hospital, another is celebrating its grand opening this month, and a third is in the development stage with partners, some of whom are here today.

And, of course, we have a small but growing and deeply passionate team busily infiltrating the entire system.

Their success is not simply the sheer power of contagious enthusiasm and dedication, although those of you who've worked with Marilyn Willison-Leach, her team, and SIM colleagues, know that's much of it.

They are building connections between the many simulation programs across Alberta Health Services already underway and indeed across the world. Marilyn has told me about the contact she has made with my former colleagues in Australia. Through a train-the-trainer approach these initiatives will ripple out across the province, improving the quality of care to patients on the frontline. Our commitment is to make that possible, and I'll tell you more about that in a moment.

I'd also like to leave you today with a sense of how quality improvement will be embedded in everything we do in Alberta Health Services.

We are transforming project-based, short-term performance improvement characterized by disconnected individual silos of excellence, into a sustained, reliable, organization-wide and evidence-based approach to the improvement of care delivery. We will achieve that transformation through the development of organizational management structures and use of standardized improvement methodologies that make transformation not only possible, but necessary.

Quality improvement guru Don Berwick has often been quoted as saying: "Every system is perfectly designed to get the results it gets." By the same token, having the organizational will, great ideas integrated into our planning and strategy development processes and execution will yield the results we desire. The high quality of thinking we are seeing in our simulation programs will yield high quality patient care as we develop them system-wide.

Success will depend on the meaningful engagement of the content experts – people like you - the creators and users of the knowledge we need.

It will take the purposeful and strategic alignment of strategy development, performance management and accountability with the day-to-day quality improvement work of the organization.

And it will take dynamic partnerships between health service providers and health service educators - the trainers of our current and future care providers.

Our starting point is the three goals set out in our Strategic Direction: quality, access and sustainability. We have eight areas of focus, each with implications for all three goals.

One is “learning and improving,” but really, “learning and improving” must be part of everything we do.

The Alberta Improvement Approach will work within a Quality Management System framework, or QMS.

A core team has begun design work on the QMS. They’re challenged with ensuring we’re clear about our strategic priorities for quality improvement, and focused on the most important opportunities in meeting those priorities.

The QMS must effectively identify systemic weaknesses, and both spark and nurture innovation. Done right, it will set us on the path of creating the common language and an Alberta specific improvement approach that will enable the organization to truly “learn while doing”; thereby facilitating AHS becoming a rapid-learning health system.

An organization transformed from a data-poor environment, to a data-rich system with the potential for near real-time learning from the experience of the patients that are served.

The greatest barrier in knowledge sharing has been the fragmentation of healthcare. By building the structures, culture and relationships across the province, we have the opportunity here in Alberta to truly make quality improvement central to everything we do.

The clinical engagement framework is one key area of development.

We are establishing meaningful opportunities for engagement and open communication with clinicians from all health professions.

A framework has been developed to ensure the expertise and experience of physicians, nurses and allied health professionals will inform patient and population issues, improve clinical practice, patient outcomes, quality and patient safety, and strategic planning.

It is comprised of two parts; an Alberta Clinician Council and several Clinical Networks.

The Alberta Clinician Council is a multidisciplinary forum that will advise on quality and patient safety issues and provide input on major safety recommendation, advise on significant clinical strategic issues, organizational priorities and new opportunities, and oversee the development and progress of the Clinical Networks.

Clinical Networks are “on the ground” working groups that will dive deep into evidence-based, targeted work, developing service models and clinical pathways, seeking out leading practices and ensuring those practices are applied consistently across the province.

Each Network will engage clinicians, patients and other stakeholders in decision-making about service planning and implementation, practice improvement, quality and patient safety.

Nine Clinical Networks have been identified for implementation this year:

- Bone & Joint,
- Surgery,
- Emergency,
- Critical Care,
- Addictions and Mental Health,
- Cardiac,

- Cancer Care,
- Pulmonary, and
- Stroke and Neuro

Initial planning sessions have either been held or are being scheduled for the majority of the networks.

Last night on the flight down from Edmonton, I sat next to someone who had been involved in one of our new clinical engagement opportunities: a stakeholder meeting for the critical care network. We've just starting but hopefully our new network will provide a real opportunity for interprofessional and intraprovincial learning.

Clinician engagement is critical to quality improvement, and we're going to make sure we set ourselves up to do it right.

Good data is also critical to quality improvement. As you may have heard in the news recently, a dashboard of performance measures has been developed, and will be populated over the coming months.

The Quality and Patient Safety Dashboard will measure 26 quality- and safety-related indicators and identify potential areas for improvement.

The Dashboard will provide meaningful, insightful and actionable information about the quality of care in Alberta, and allow us to drive change where it's needed.

The indicators were developed following consultation with a wide range of stakeholders, and include:

- Surgery wait times for hip and knee replacements

- Access to cancer care services
- Percentage of patients who smoke discharged with a smoking cessation plan
- Falls among seniors receiving continuing care support.
- Average length of stay in Emergency Departments.
- Percentage of children receiving scheduled mental health treatment within 30 days.
- Patient satisfaction with care.
- And the occurrence of serious, largely preventable patient safety incidents.

We will be supplementing these indicators with more on access in the very near future.

Data already exists for many of these measures. The need and the opportunity to gather more, across the entire health system – and to put it to work improving quality - is a good illustration of the value of a fully integrated health system.

Before Alberta Health Services was formed, there was no place where data for the entire province resided and no one group responsible for producing and analyzing these data. Although there were reports on waiting times that were published, these were misleading in the sense that they were not derived using common definitions. It was a clear example of garbage in-garbage out but it gave people a false sense of an ability to compare performance. This must change if we are to be transparent, one of our values, we must have consistent, reliable, timely data and we must publish it.

The database we will create to do this will be unlike anything that currently exists in Canada. It's an enormous opportunity, and to make the most of that opportunity will require consistent recording practices, and effective, efficient IT infrastructure.

An IT-enabled, patient-focused model will enable us to integrate and coordinate care delivery across the continuum of services, from prevention to follow-up. It will enable us to tell patients, as part of briefing them for their surgery, what the local experience is with adverse events following that surgery on that type of patient locally.

It would provide the information we need to adapt to changing patient demands and usage trends with an agility we simply do not have right now.

It will enable us to assess new technologies as they are implemented in practice. In other words, to become a “rapid learning system.”

Of course, the most important aspect of the “system” is not the technology, or the structures, but the people within them – people like you.

To meet the health needs of Albertans, we have to ensure we have the necessary skills, and the systems to take advantage of those skills

Traditional systems were developed to meet the needs of a very different world – when lifespans were shorter, before antibiotics, before the burden of chronic disease, before healthcare evolved into the complex business in which we work.

It’s astonishing; really, that we would even think that systems developed in a different age could meet the needs of today’s society.

But both new systems and old have one thing in common, a single starting point: the patient. The delivery of care doesn’t start with building blueprints and schedules of service providers – it starts with the needs of the patient.

That's the simple brilliance of collaborative practice, or interprofessional practice, if you prefer. The people providing the care organize the work around the needs of the patient. The system adapts to what they need and what the patient needs.

It's imperative that we move towards the collaborative practice model, and work is about to commence with the University of Alberta Hospital to realize it. It's not simply a "pilot project," it's a beginning.

What we want to do there, and subsequently throughout the province, is to transform the care process. We want to have RNs working to their full scope of practice, assessing, guiding, leading care. The care team will need to follow a care plan for the patient to ensure that all the contributors are provided when they are needed. We are looking for Interprofessional practice at its best, for every patient, every time.

It will not be easy. As John Maynard Keynes put it, the difficulty lies not so much in developing new ideas, as in escaping old ones.

But we know that work is far more satisfying when the contribution is personal and meaningful – when we can bring all of our skills and experience to the team's accomplishment of a shared goal: the best possible outcome for the patient.

Interprofessional practice and education are central to this goal.

Professionals must be educated to work within a team, with effective communication skills and a real understanding of roles and accountabilities.

Training high-functioning teams is a powerful use of simulation training. We know that poor communication in health care teams is too often at the root of patient safety incidents. Simulations provide a safe environment in which to learn and practice the skills needed on today's front lines.

So simulation has a critical contribution both to the technical skills I described at the start of this talk and to the development of the interprofessional team skills we need and you use every day.

Our vision is to be leaders in healthcare simulation in order to promote best practice, prevent harm and enhance the quality of care.

The uses of simulation are limited only by the imagination. We're only at the earliest stages here in Alberta, yet the breadth of application of simulation techniques is already immense.

We've got eSim Grand Rounds, being shared via Telehealth, and the WISE course, training trainers throughout the system and soon across the province. We've got training in trauma, ICUs, codes, surgery, obstetrics, pediatrics and EMS.

The simulation work being done here in Calgary has been extensive – a grassroots movement that began and has evolved through the dedicated efforts of clinicians such as Dr. Vince Grant and his team within KIDSIM.

It's the way real quality improvement begins: at the frontlines.

The eSIM Provincial program will not attempt to take over or infringe on the existing initiatives. It will build connections and leverage the work already done to the consistent benefit of clinicians across the province and, most importantly, to the consistent benefit of patients across the province.

While simulation facilities and/or centres will provide focal points and infrastructure for simulation, outreach will be an important aspect of the program. Reaching out beyond the main urban centres is paramount. In situ training also

offers the additional benefit of occurring in the real-world environment in which care will take place.

Last August, we opened another simulation facility at Edmonton General Hospital. We're holding an open house celebration at the centre on Wednesday afternoon (February 10th). If you can join us, please do.

There is now dedicated space at the Foothills Medical Centre, South Tower and plans for space in the McCaig Tower. Activity is ramping up with Critical Care Nursing and the Surgical residents booking their training sessions.

The next step will be an advanced technical skills simulation laboratory here in Calgary. It's being developed in partnership with the University of Calgary Faculty of Medicine, and will be a state-of-the-art technical skills training facility.

It will provide not only a place to train current and future healthcare providers, but also a place to evaluate technology and techniques, and to incubate the future of simulation.

Some of the services it will provide exist currently, but the new laboratory will bring them together in one place to benefit from the resulting critical mass, and grow from there.

It will enhance and expand our clinical training capabilities, and our competitiveness on a national and international scale.

It will be a place where education and service truly come together – the product of the kind of dynamic partnerships we will need to meet the challenges we share.

This forum is another great example of the opportunity that lies in those partnerships, and we're proud to be collaborators in its planning and delivery.

I'd like to close with another real-life story about simulation.

One of our pediatric residents attended a simulation session about the significance of a low heart rate combined with a high blood pressure in a trauma patient. This combination of vital signs is often associated with raised intracranial pressure.

Although all of the residents in the exercise missed this crucial finding during the training session, they were afforded some valuable education.

Several days later, a resident was on call in the PICU and asked to see a patient by one of the nurses because the child was not doing well.

The patient was an asthmatic who was having an acute asthma attack and placed on significant medical therapy to help heal her lungs. This included taking the rare step of having an anesthetist put the child on anesthetic gases.

The girl was hard to wake up, and the team looking after her could not figure out what was wrong as her lungs seemed to be doing OK. The unusual finding - which the team couldn't figure out - was that this girl had a lower heart rate and a high blood pressure.

Our resident, remembering her case in the simulator, wondered if this could be raised intracranial pressure, similar to her trauma case.

Nobody could figure out why this child would develop raised intracranial pressure out of the blue in this setting. They decided they didn't have any other good

ideas, so had an urgent CT scan performed and started treating the child as if she had raised intracranial pressure.

The CT did in fact reveal raised intracranial pressure, and this pick-up by the resident saved the young girl's life. It turns out there is a very rare complication of having raised intracranial pressure while being treated with anesthetic gases.

Something that would have been incredibly difficult to figure out for most teams was discovered because of lessons learned through simulation. Then turning learning into practice within days. I've heard lots of those stories back in Queensland. So now I am convinced of the value of simulation. But simulation is only a special case of the value of continuing education and staff development. The reason you are here today.

You've got a stimulating day ahead of you, so I'll leave you to it. Thank you for inviting me to be here this morning.