

Embedding “Learning” into a health system’s pandemic response

The pandemic EVIDENCE
collaboration Int Conf 2025

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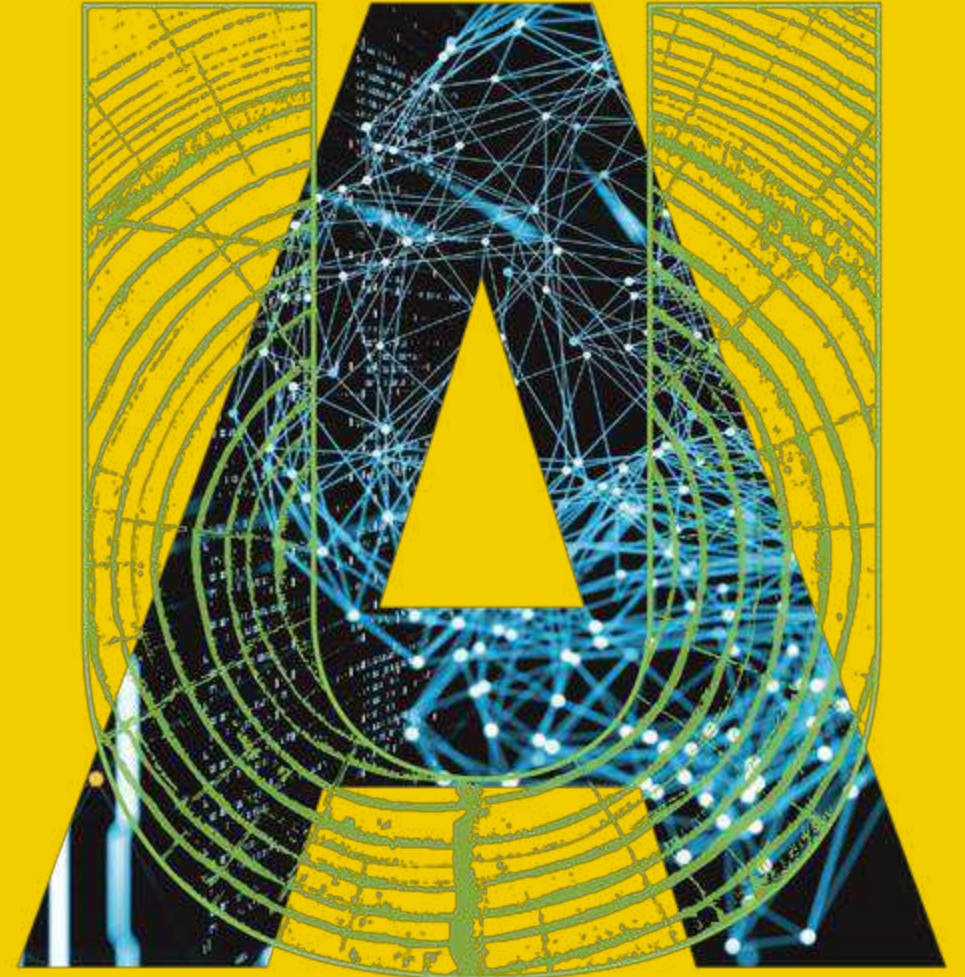
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**UNIVERSITY
OF ALBERTA**



Objectives

- Describe briefly a provincialized healthcare system in Canada
- Share examples of how innovations and evidence were integrated into practice and policy
- Provide recommendations about going forward “when” another pandemic occurs

I would like to acknowledge that in Alberta, we are located on Treaties 4, 6, 7, 8, and 10 territories, home and a traditional meeting place for First Nations, Métis, Inuit, and all First Peoples of Canada, whose presence continues to enrich our vibrant community and whose histories, languages, and cultures continue to influence our vibrant community. I also wish to honour the Elders, Knowledge Keepers and traditionalists who have gone before us and those who continue to walk with us today.



Healthcare in Alberta: 2009-2023



- Largest public health merger in Canada (12 entities into 1) - Single, provincewide, fully integrated health system
- 4th largest company in CAN
- 120K+ MDs, staff
- ~\$16B annual budget
- Large-scale co-operation and standardization.





- **Largest public merger in Canadian history**
- **Fourth-largest company in Canada**
- **120,000+ physicians, staff and volunteers**
- **\$15.5 billion budget**

- Home care
- Primary care
- Addiction and mental health
- Acute care
- Clinical support services
- Ground / air ambulances
- Corrections
- Public, population health
- Indigenous health
- Continuing care / seniors



Activity



2.1 million
emergency
department visits

106
acute care
hospitals

8,448
acute care
beds

51,691
births

544,744
EMS events

25,653 continuing
care living options

243 community
palliative and
hospice beds

2,723 addiction and
mental health beds

Partnership in 41
primary care networks

Provide healthcare services
in correctional centres

650 facilities delivering
programs and services
to Albertans

5 stand-alone
psychiatric
facilities

AHS Sustainability Strategies

“When you focus on quality, patient outcomes will improve and so will savings”



Building a Culture of Quality Improvement

- Physician dyad model of leadership
- Appropriateness of care ie. utilization
- Standardized Clinical Pathways
- Scale and spread initiatives

Operational Best Practices (Sustainability off)

- Labor savings ie. staffing ratios, std protocols
- non-labor savings ie. inventory management, supply chain

Strategic Clinical Networks

- **Alberta's SCNs are embedded within a single, province-wide health care system, which enables wide-scale implementation of strategies proven to reduce unwarranted variation and improve care, clinical appropriateness and health outcomes.**
- **The networks support a learning health system by bringing together people, research and innovation, and are delivering a positive return on investment in terms of cumulative savings in the health system.**

2012

Addiction and
Mental Health

Bone and
Joint Health

Cancer

Cardiovascular
Health and
Stroke

Diabetes,
Obesity and
Nutrition

Seniors
Health

2013

Critical Care

Emergency

Surgery

2014

Respiratory
Health

2015

Maternal,
Newborn,
Child and
Youth

2016

Digestive
Health

Kidney Health

Population,
Public and
Indigenous
Health

2017

Primary
Health Care
Integration
Network

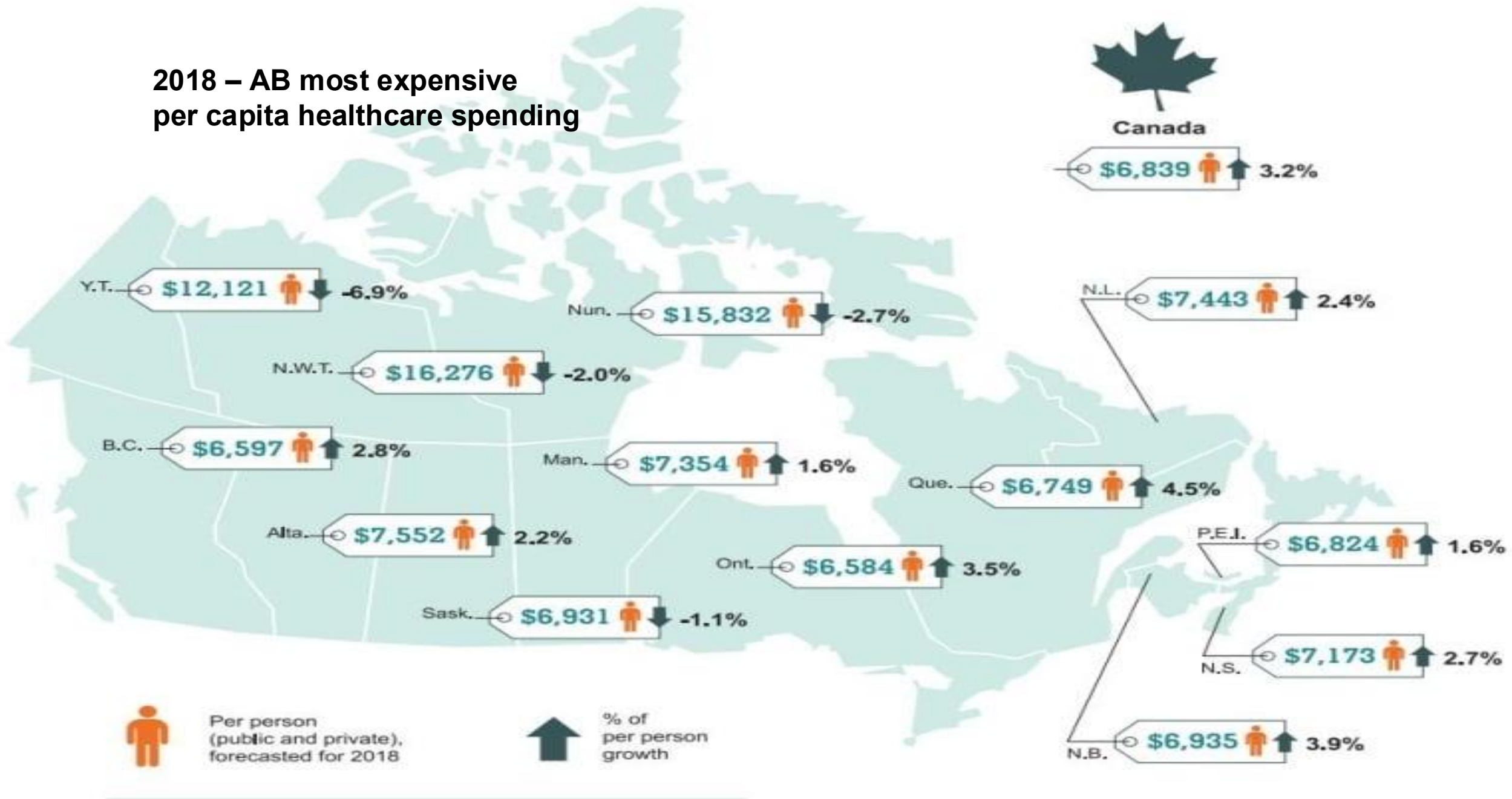
2018

Neurosciences,
Rehabilitation
and Vision

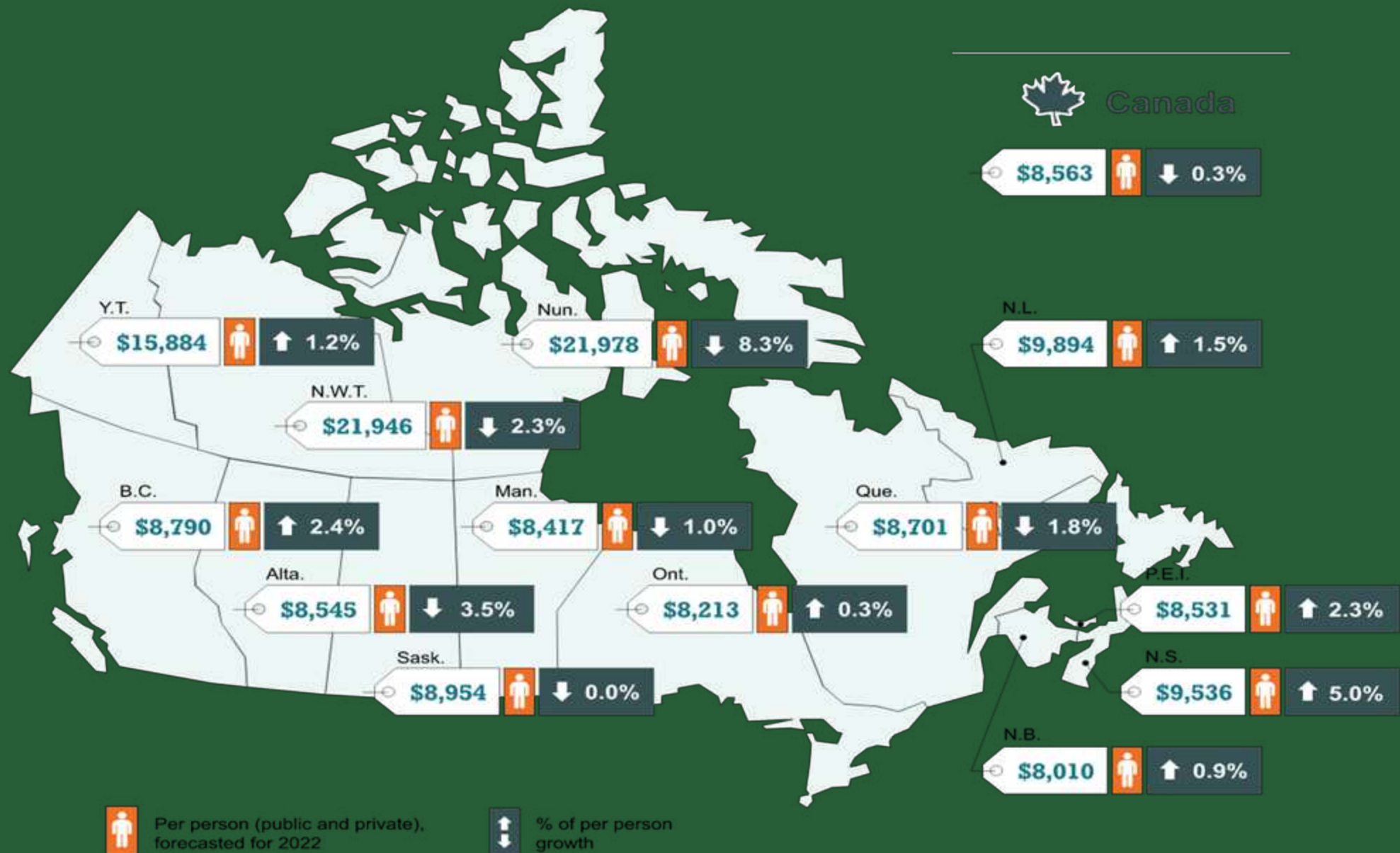
SCNs and Successes to date:

- Current budget \$17M
- Cost savings: 15 projects from 2012-2018
 - Gross savings of \$178.74M
 - Cumulative ROI of \$1.54 for every dollar invested
 - Hard cost savings \$16.4M; rest cost avoidance (eg. Reduced LOS)
 - Avoidance of 143,800 hospital bed days (~13 medical inpt units operating for 1 year)
- Improved pt outcomes, pt experience, pathway creation
- Leveraged an additional \$65M funding from outside AB

2018 – AB most expensive per capita healthcare spending

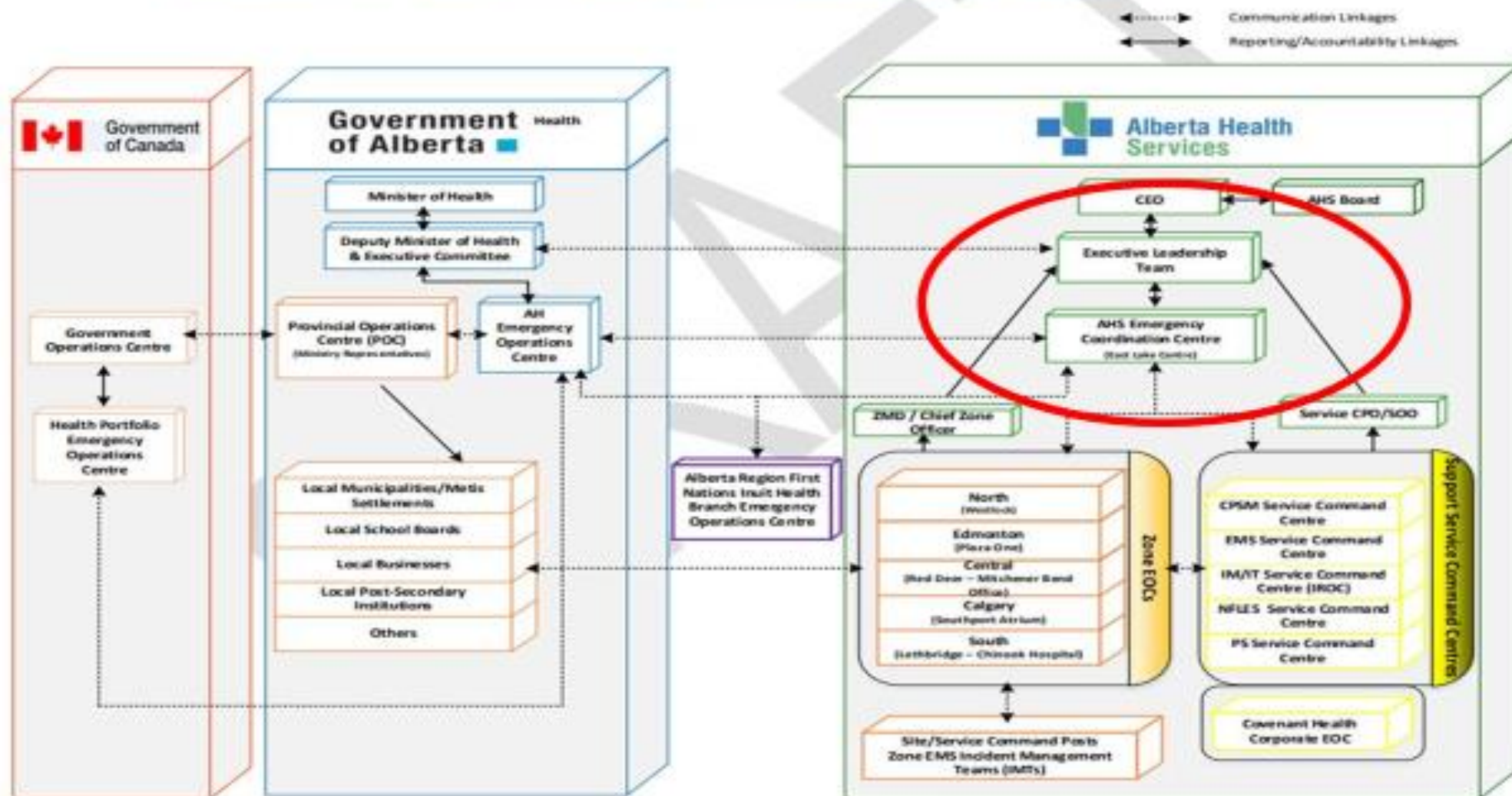


How do the provinces and territories compare?



AHS Pandemic Response:

Appendix 1- Inter-Agency Relationship Diagram



AHS Pandemic Response:

- **>30.5K ppl hospitalized; 4400 requiring ICU care**
- **ICU Capacity:** doubled general systems ICU beds, no pt required out of province transfer
- **COVID testing:** at its peak, testing over 23K/day
- **Contact tracers:** increased staff from baseline 50 to over 3000
- **Healthlink:** increased calls by 157% - 20/21 – 2.3M calls
- **Virtual Care:** 60K visits annually pre-COVID to 60K/month
- **Virtual Hospital:** 300 pts 19/20 increased 118% to 644 pts 21/22
- **ASI:** caught up on backlog of surgeries prior to wave 4
- **First in:** development of online assessment tool, vaccine booking tool, PPE modelling tool. Early Warning System tool

AHS Pandemic Response: PPE usage

PPE	%Usage over baseline
Goggles	14,150
Face Shield	11,011
N95	2680
Gowns	1,253
Procedural Masks	1,252
Hand Sanitizer	171
Gloves	124

AHS Pandemic Response:

Covid-19 Response – Key Initiatives with Industry



Ventilator Project

3 teams designed, prototyped and produced pandemic ventilators.



Prototyped PPE

Companies and Universities prototyping* face shields, masks and other PPE to help with demand.
(*3D printing, laser cutting)



APP Development and Modification

Apps for tracking and communication.

AHS Hospital Surveillance System:



Provincial COVID 19 Hospitalizations

Daily Census Counts by Facility and PCU with Age and Gender Stats

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** Hover Over Exclamation Point Icons for Definitions

Click Download Button to download PDF Copy of Tooltips



Dashboard Last Refreshed: 2022-02-28 7:04:39 AM

Omicron Quick Stats:



Total Hospital Admissions	5,275
Currently In Hospital	975
% Currently In Hospital - Fully Vaccinated (2 Doses)	36.8%
% Currently In Hospital - Fully Vaccinated (3+ Doses)	31.3%
Total ICU Admissions	550
Currently In ICU	61
% Currently in ICU - Fully Vaccinated (2 Doses)	26.2%
% Currently in ICU - Fully Vaccinated (3+ Doses)	19.7%



AHS Early Warning System:



COVID-19 EWS: Inpatient Bed Forecast (does not include ICU beds/patients)

The **black** line below represents the **actual** number of inpatient beds occupied. The **red/orange/blue** lines represent projections.

High
Mid
Low

■ All COVID cases

Zone
All

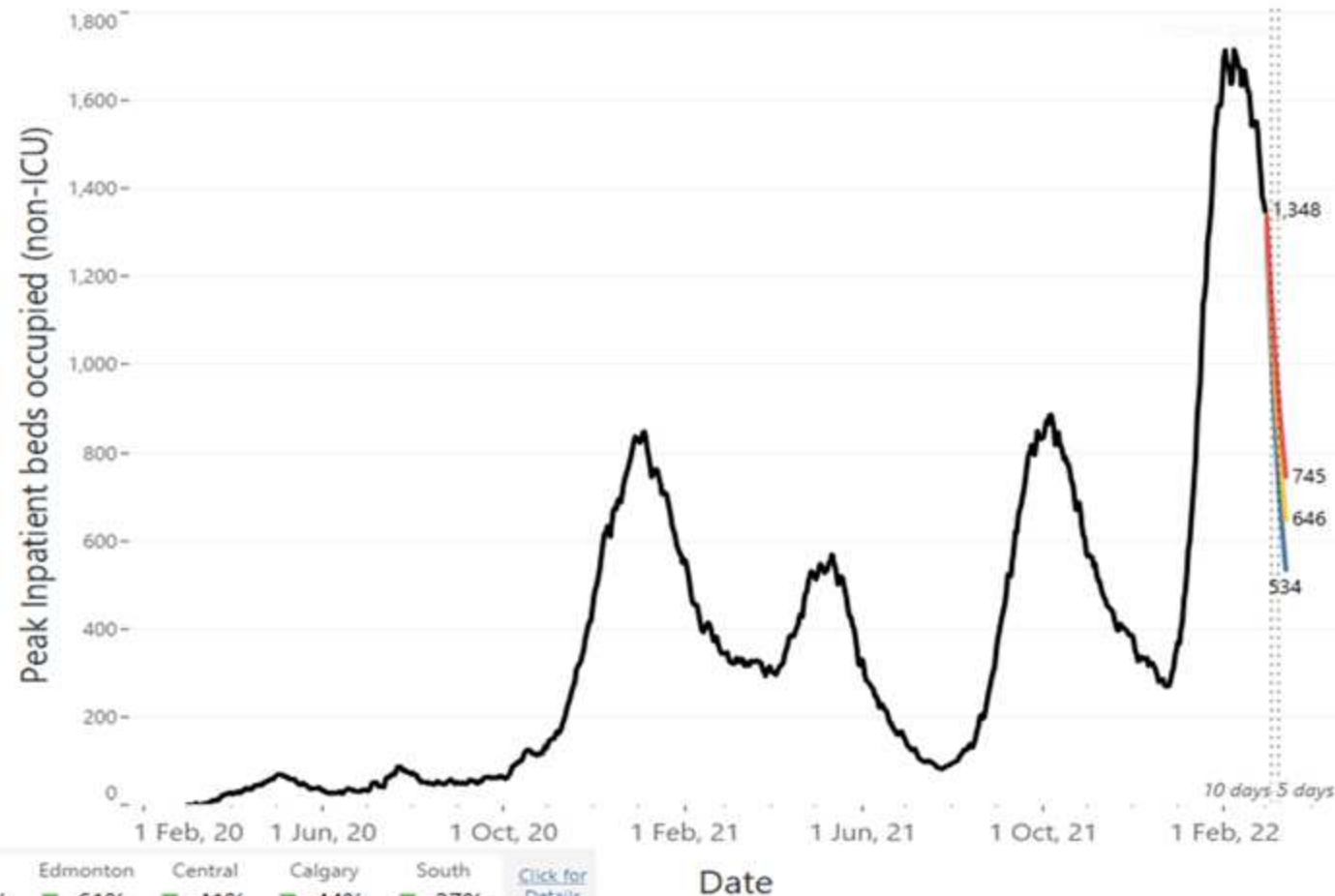
Facility
All

Reason for Admission
☒ All COVID cases
☐ COVID Related only

Days into the future to show
14

Date
From 2020-03-01 12:00:00 AM

Please refer to the Background page to understand the limitations of these projections.



	Low	Mid	High
Mar 01	1,304	1,324	1,339
Mar 02	1,212	1,250	1,278
Mar 03	1,127	1,181	1,220
Mar 04	1,049	1,116	1,165
Mar 05	977	1,055	1,113
Mar 06	911	997	1,063
Mar 07	850	943	1,016
Mar 08	793	892	971
Mar 09	741	845	928
Mar 10	692	800	888
Mar 11	648	758	849
Mar 12	607	718	813
Mar 13	569	681	778
Mar 14	534	646	745

Waste Water Data
% change over last 30 days

North ▼ -44%
Edmonton ▼ -61%
Central ▼ -41%
Calgary ▼ -44%
South ▼ -27%

[Click for Details](#)

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AHS Pandemic Response:

- **Scientific Advisory Group (SAG):**
 - Multidisciplinary team of clinicians/researchers/operational leaders/ other experts – providing rapid reviews of emerging evidence and guidance from national and international bodies to provide advice/guidance of healthcare issues as related to COVID
 - Co-chaired: Lynora Saxinger/Braden Manns
 - >100 reviews
 - Topics ranging from continuous masking policies to vaccination risks to workplace screening programs to effectiveness of treatments
 - Seen as leading edge

Post-pandemic consequences

- Workforce burnout and increased vacancies
- Delays in chronic care
- Reductions in cancer screening
- Backlog of surgeries
- Increased mental health and addictions
- Financial sustainability

Correcting for the negative impacts of the pandemic on the health care system will take years

(CMA 2020)

Rebuilding our system post-pandemic

- Preparedness includes:
 - Infrastructure: systems including primary care
 - Data + Data Utilization + Predictive Analytics tools
 - Capacity planning
 - Active surveillance systems of coronaviruses and other high impact viral families
 - Strengthen diagnostic capacities to detect, sequence and share genomes
 - Invest in HC workforce including PH officers

A scenic photograph of a sunset over a rocky coastline. The sun is low on the horizon, casting a warm orange glow across the sky and reflecting on the water. Dark, silhouetted rocks are in the foreground, and a dark, vegetated hillside is on the right. The overall mood is contemplative and inspiring.

Most of the important things in the world have been accomplished by people who have kept on trying when there seemed to be no hope at all.

Dale Carnegie

Thank you

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