Source:	Centre hospitalier de l'Université de Montréal (CHUM)
Title:	Translating Principles into Practices: Responsible Innovation and AI Taskforce at the University of Montreal Academic Health Center (CHUM) - Att.1: Presentation
Purpose:	Discussion

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Abstract:	This PPT summarizes the content of K-027 for presentation and discussion during the meeting.

Translating Principles into Practices: Responsible Innovation and AI at the University of Montreal Hospital Center (CHUM)
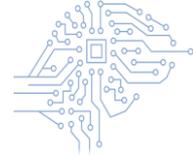

Kathy Malas, MPO, GCHlthMgt

Associate CEO, Pole of Innovation and AI, Executive Office, CHUM

Health Professionnal Researcher, Research Center CHUM

ITU-WHO Focus Group on AI for Health, January 27th 2021

The CHUM in numbers

Hospital center and university network
Specialized and overspecialized care

772 beds
39 operation room
466 318 outpatient visites
69 393 ER visits

Largest simulation and learning center in **North America**

Among the most modern and imposing research centers in North America - 60.4M in revenues

+ 200 innovation projects and **+ 70** AI projects

+200 international partners, **+ 200** patient partners, **+ 1000** volunteers

Continuously Improving the health of the population, beyond the disease

500 000 patients

17 636 actors

- 1057 doctors, dentists and pharmacists
- 3741 nurses
- 2089 health professionals and 3056 other professionals
- 1974 researchers
- 4500 students
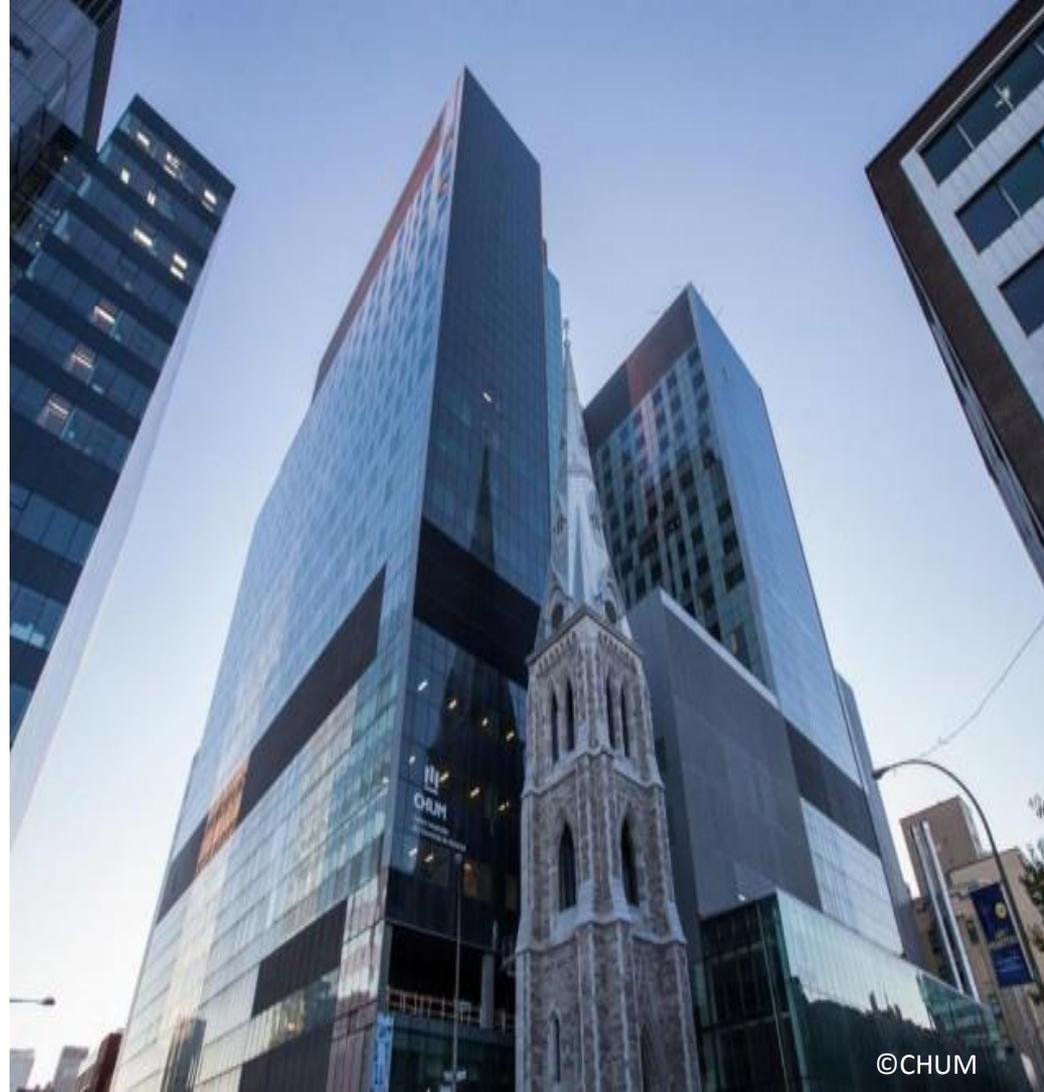- 927 volunteers
- 292 managers

3.8 M population served University Knowledge Network

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Mission & Vision in AI and Innovation

Develop, integrate, evaluate and share, in an agile manner, innovation and AI in all areas of the CHUM's activities <u>with and for patients, teams and our partners</u> from all horizons.

The CHUM, a center and university hospital network, world-renowned leader in innovation and artificial intelligence for the health benefit of populations.

Continuously Improving the health of the population, beyond the disease

Improve patient experience and clinical outcomes — 01

Improve Population's health — 02

Reduce Health costs — 03

Improve employee's well-being — 04

6 dimensions
&
Research, Teaching, Innovation
&
Socio-economic wealth

Bodenheimer, T & Sinsky C, 2014
Sikka, Morath & Leape, 2015
Feeley, 2017
Brunet et Malas, 2020

AI and Innovation principles and values

Responsibility: Guided by benevolence and humanism, our actions promote rigor, inclusion, equity, respect for human rights, autonomy, privacy and sustainable development. **The CHUM is a signatory of the Montreal Declaration for responsible AI**.

Novelty: By capitalizing on the common and creative strength of patients, teams and partners through an open and inclusive approach, our choices are daring, our actions are forward-thinking, our approach promotes learning, teaching and communicating while being based on data and knowledge.

Relevance: Inspired by the real needs of the population and stakeholders, our choices are judicious and aim to generate tangible and lasting benefits for society.

CHUM

AI in Healthcare in Montreal
4th industrial revolution

1st
University city in Canada

World major
Hub of researchers and students (+500 at the Montreal Institute for AI - MILA)
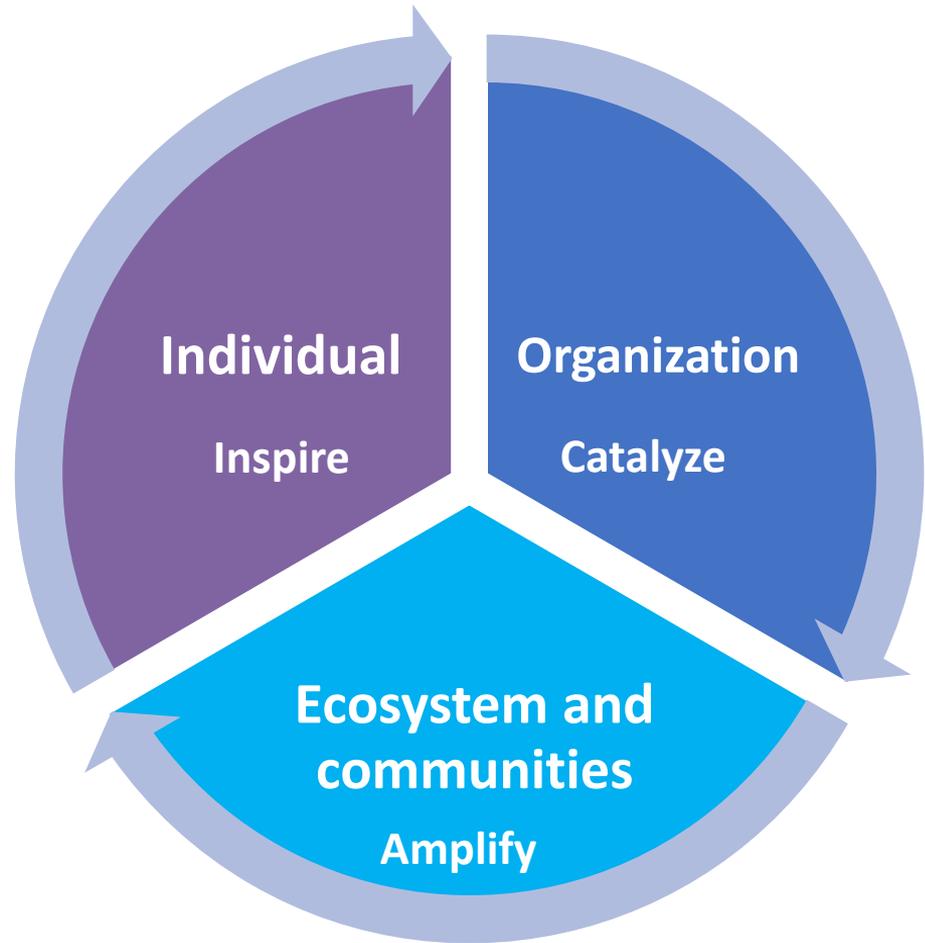
World-renowed researchers and Academic health centers

$1B+
Research Financing

$1B +
AI Investment since 2016

11,000
Students (+20 000 EIAS) and 93,000 jobs related to AI

Our strategy to integrate responsible innovation and AI
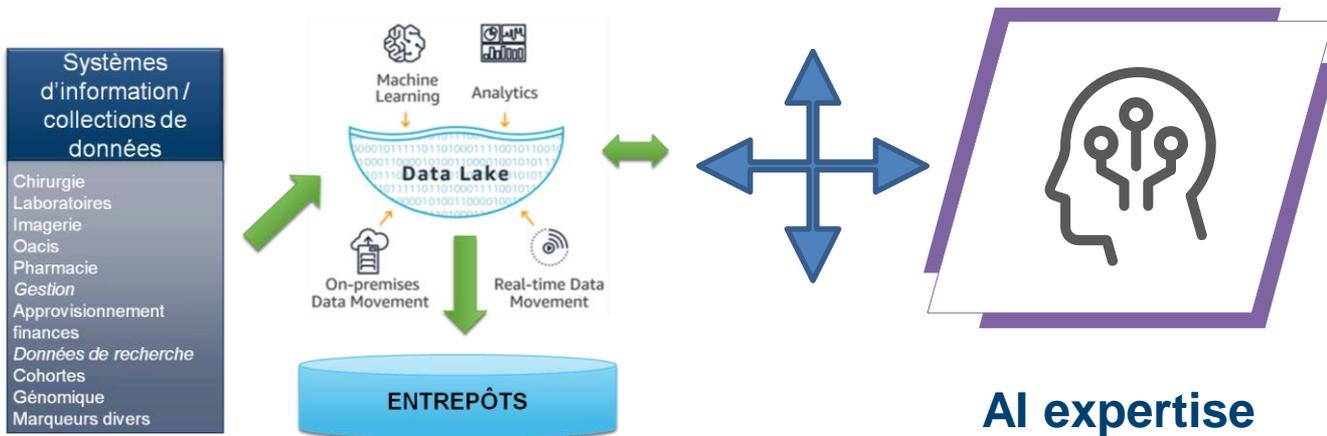
CHUM

A THREE LEVEL STRATEGY

ÉIAS

SAIH

CHUM
ÉCOLE DE L'INTELLIGENCE
ARTIFICIELLE EN SANTÉ
Centre hospitalier
de l'Université de Montréal

School of AI in Health- eiaschum.ca

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Data Integration and Analysis Center (CITADEL) – Human expertise and technological infrastructure

Systèmes d'information / collections de données

Chirurgie
Laboratoires
Imagerie
Oacis
Pharmacie
Gestion
Approvisionnement finances
Données de recherche
Cohortes
Génomique
Marqueurs divers

Machine Learning

Analytics

Data Lake

On-premises Data Movement

Real-time Data Movement

ENTREPÔTS

- **+ 20 systèmes d'information intégrés**
- **+ 17,9 millions d'épisodes des soins**
- **+ 3,6 millions de données patients**

AI expertise

- **Statisticians**
- **Biostatisticians**
- **IT architect**
- **Data scientist**
- **Data engineer**
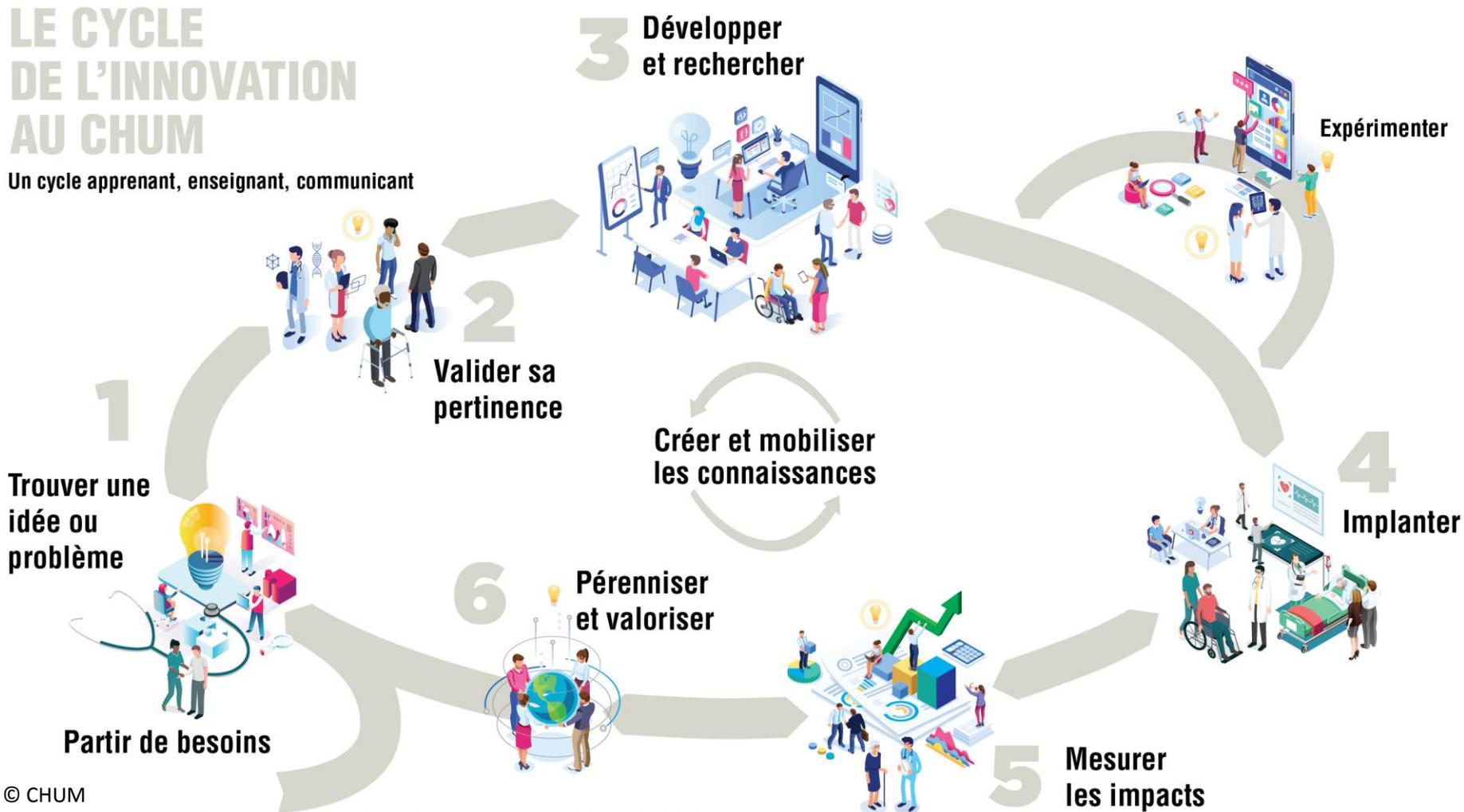- **Business translator**

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Project management office and innovation hub

For testing, implementing and measuring the value of innovation and AI projects for intrapreneurs and entrepreneurs

LE CYCLE DE L'INNOVATION AU CHUM

Un cycle apprenant, enseignant, communicant

1 Trouver une idée ou problème

Partir de besoins

2 Valider sa pertinence

3 Développer et rechercher

Expérimenter

Créer et mobiliser les connaissances

4 Implanter

5 Mesurer les impacts

6 Pérenniser et valoriser

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Ref: Brunet, Malas et al 2019; Institute of Design at Stanford University, 2017; IRSC, 2010

APPROACHES AND TOOLS

Analyze AI development and implementation processes to identify challenges and solutions

Develop a checklist with AI ethics principles and requirements to assess the responsibility of AI innovations

Develop a guide comprising a set of recommendations to help AI developers and implementers conduct responsible projects

At CHUM, we believe that Innovation and AI generate value for the health and well-being of populations and our society.

Translating Principles into Practices: Responsible Innovation and AI at the University of Montreal Hospital Center (CHUM)

PHOTO: ADRIEN WILLIAMS

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ITU-WHO Focus Group on AI for Health, January 27th 2021

CHUM