MAKING WORK WORTH DOING

Canadian Efficiency in Lung Cancer Diagnosis:
AI-Enabled Pathways in the Alberta Thoracic Oncology Program

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SOCIOTECHNICAL SYSTEMS ROUNDTABLE INC.

Design & Dialogue

Part 1	10 min	The clinical reality. The cancer diagnosis continuum
Part 2	15 min	ATOP the program and the case study.
Part 3	15 min	ATOP reverse-engineered . The AI-enabled pathway.
Part 4	10 min	Socio-technical synthesis & What AI cannot replace?
Part 5	10 min	Open participant discussion. Guided & freeform/ live questions per section

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The Clinical Reality

Cancer diagnosis · AI-enabled technologies · inefficiencies · cancer diagnosis pathways

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Lung Cancer in Alberta — The Scale of the Challenge

#1	50%	13%	1 in 4
Leading cause of cancer death in Canada	Diagnosed at Stage IV in Alberta	5-year survival rate at Stage IV	Cancer deaths in Canada are lung cancer

Issue: Despite declining incidence rates, lung cancer remains Alberta's deadliest cancer, primarily because of late-stage diagnosis.

Solution: Effective early detection requires a well-coordinated cancer pathway for timely and accurate diagnosis. What exists instead is a fragmented system & a highly inefficient process with multiple failure points.

Key insight: The problem is not clinical skill. It is system design, system-wide inefficiencies that accumulated over time.

The parallel: a fragmented diagnostic system has the same pathology as the cancer it is trying to detect.
ATOP repairs both networks simultaneously.

The Cancer Diagnosis

A Continuum of Interdependent Decisions

1. **Symptom** — GP/ER visit; initial symptom evaluation
2. **GP / ER** — Symptom evaluation & assessment
3. **Referral** — Specialist appointment scheduled
4. **Series of Tests** — MDT: CT, PET, EBUS, biopsy, pathology
5. **Diagnosis** — Treatment plan: surgery, radiation, chemo

⚠ *Delay at any stage cascades downstream — late referral delays staging, decision-making, AND treatment.*

Not a Single Event

Diagnosis is a series of interdependent decisions involving multiple medical professionals across distinct care settings.

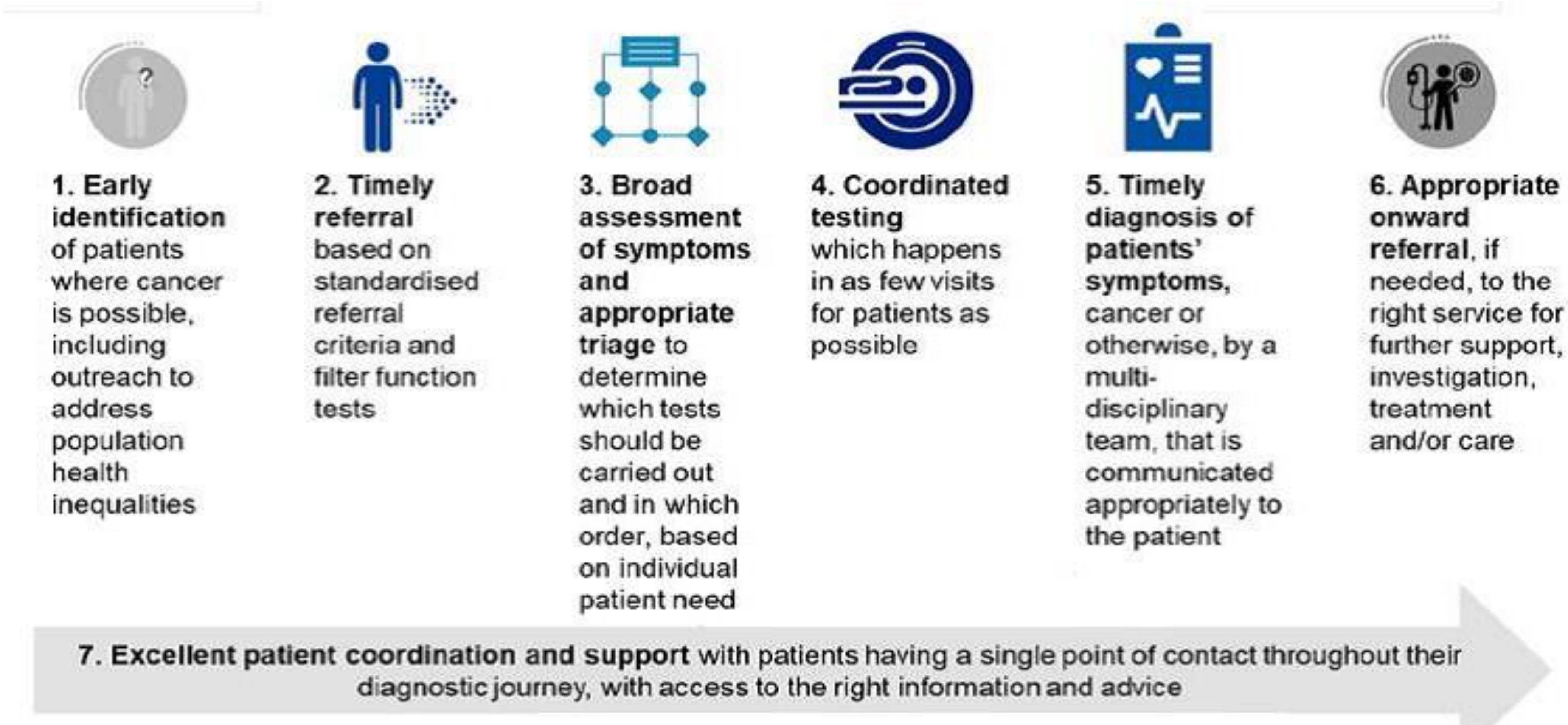
Cascade Effect of Delays

A delayed referral does not just delay the referral — it delays staging, clinical decision-making, and the start of treatment.

Interdependent Continuum

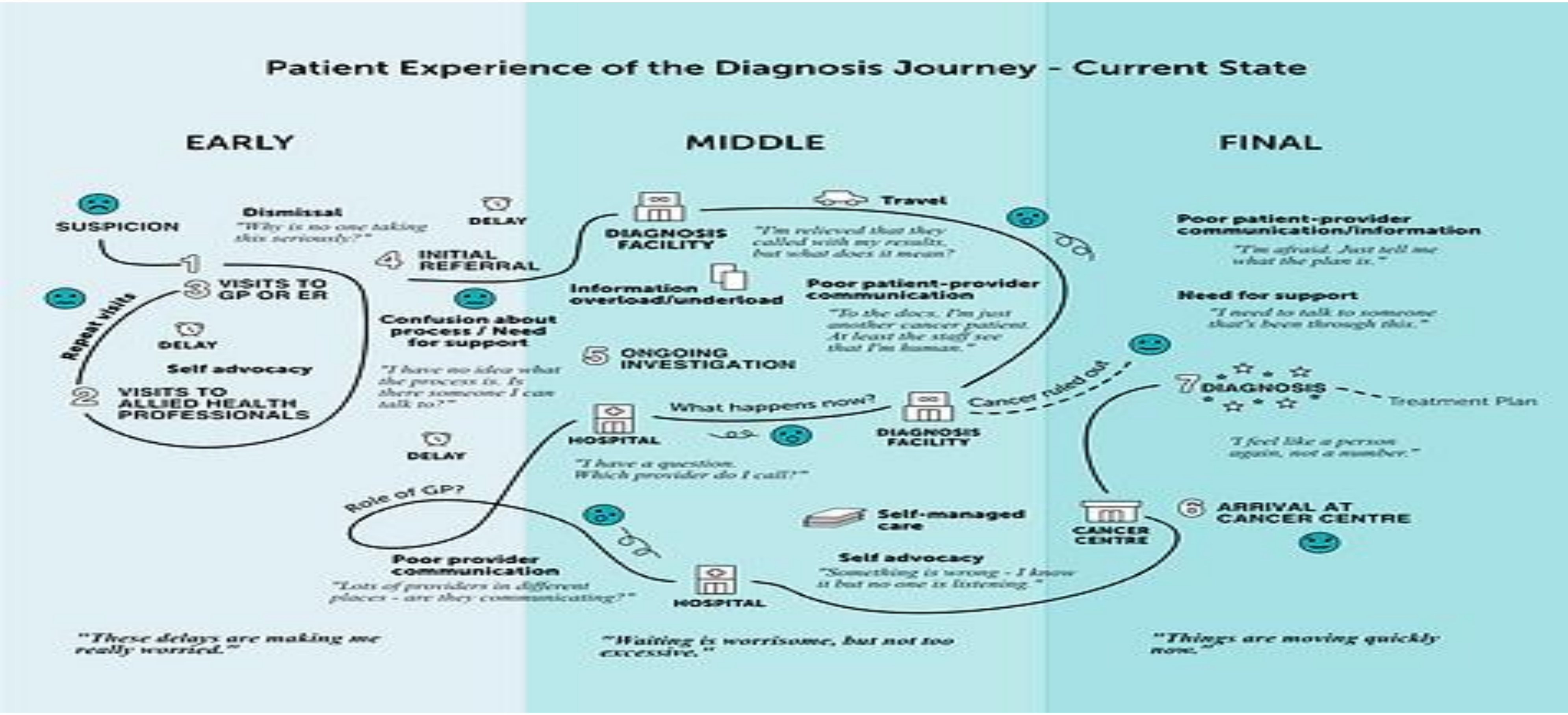
Timely and accurate diagnosis depends on the performance of each part. The continuum succeeds or fails as a whole.

Cancer Diagnosis Pathway – Desired State



Source: https://www.lincslmc.co.uk/non-specific-symptoms-pathway/

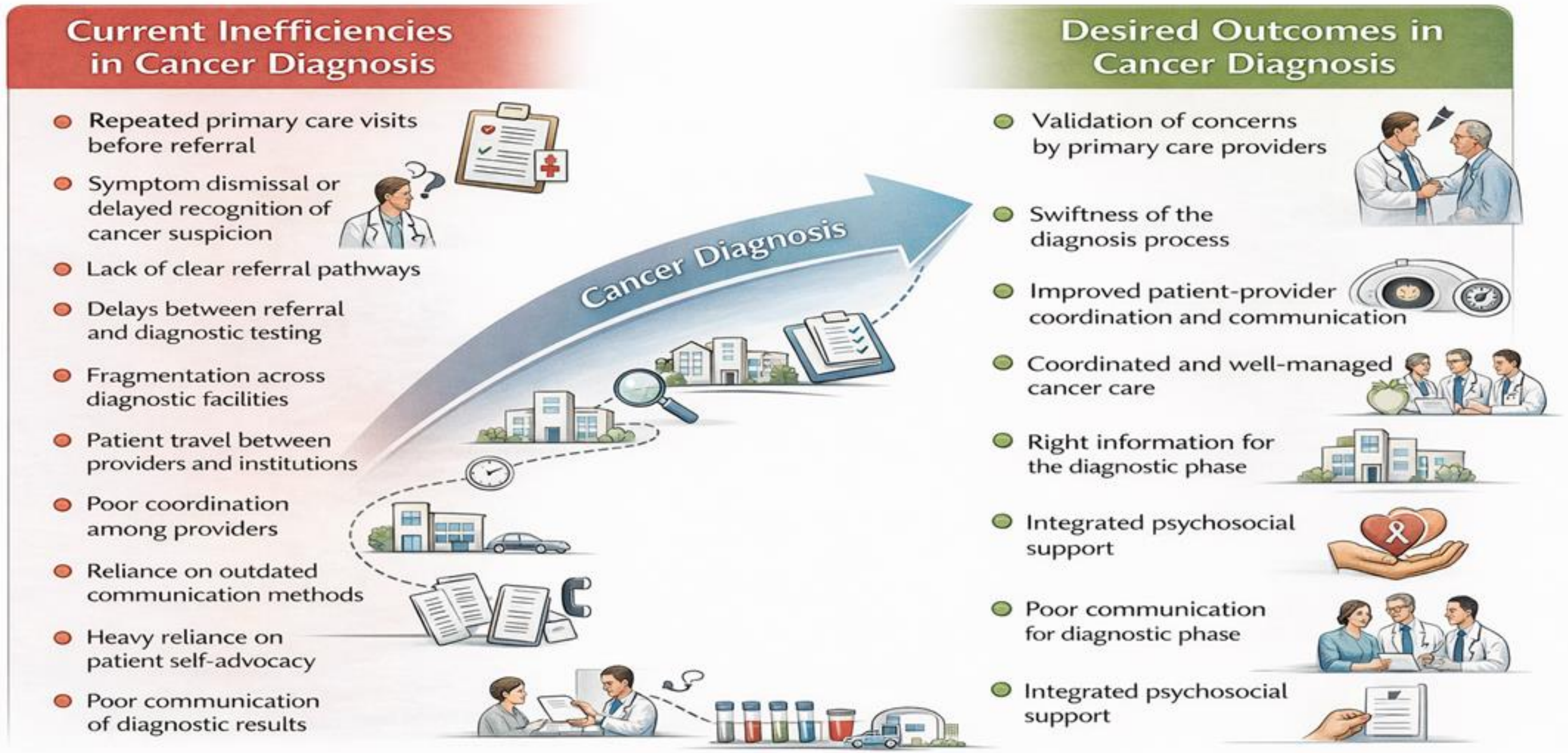
Patient Experience of the Diagnosis Journey



Current State of the Diagnosis

Optimizing Diagnosis in Canadian Cancer Care
(All.Can Canada, 2022)

All.Can International is a not-for-profit organisation (ASBL) registered in Belgium. Its work is made possible with financial support from Bristol Myers Squibb (sustaining partner) and Roche, MSD, Johnson & Johnson and Illumina (funding members).


Current Inefficiencies in Cancer Diagnosis
Repeated primary care visits before referral
Symptom dismissal or delayed recognition of cancer suspicion
Lack of clear referral pathways
Delays between referral and diagnostic testing
Fragmentation across diagnostic facilities
Patient travel between providers and institutions
Poor coordination among providers
Reliance on outdated communication methods
Heavy reliance on patient self-advocacy
Poor communication of diagnostic results
Cancer Diagnosis
Desired Outcomes in Cancer Diagnosis
Validation of concerns by primary care providers
Swiftness of the diagnosis process
Improved patient-provider coordination and communication
Coordinated and well-managed cancer care
Right information for the diagnostic phase
Integrated psychosocial support
Poor communication for diagnostic phase
Integrated psychosocial support

Efficiency in Cancer Care

All.Can Canada - All.Can International
Impact, network of organizations

From Inefficiency to Desired Outcomes

The Efficiency Framework by **All.Can International.**
Definition of Efficiency: Care that delivers the best health outcomes using resources optimally (human, financial, technological), prioritizing what truly matters to patients.

The Efficiency Hub platform showcasing over 40 (as of 2024) international initiatives designed to address inefficiencies across the entire cancer care pathway, from diagnosis to survivorship.
All.Can Canada follows a clear methodology for gathering evidence & Case studies on cancer diagnosis.

The Policy Blueprint (2022): Provides a framework for stakeholders to implement structural changes in cancer care, focusing on evidence-based practices.

Key Focus Areas:

- **Reducing diagnostic delays:** Improving the speed and accuracy of initial cancer diagnosis.
- **Moving care closer to home:** Providing care in community settings rather than hospitals.
- **Integrating care pathways:** Breaking down silos between different specialists and stages of care.
- **Utilizing data:** Using patient-reported outcomes and data-driven insights to guide decisions.

AI-Enabled Technologies in Oncology

have the potential to completely transform oncology by providing cutting-edge solutions that improve patient care, cancer diagnosis and treatments.

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AI Is Reshaping Cancer Diagnosis

01 **Imaging & radiology** Deep learning models flag suspicious nodules on CT with consistency and scale no human radiologist can match alone - a true augmentation.

02 **Genomic profiling** AI accelerates comprehensive genomic profiling (NGS), identifying targetable mutations and guiding personalised systemic therapies.

03 **Clinical decision support** Predictive analytics tools synthesise patient history, imaging, and biomarker data to recommend diagnostic and treatment pathways.

04 **Biomarker discovery** enabling novel staging and prognostic markers.

05 **Drug development** AI compresses the process by identifying specific molecules, predicting trial outcomes, and optimising dosing strategies.

Source: Tiwari, A., Mishra, S. & Kuo, TR. Current AI technologies in cancer diagnostics and treatment. *Mol Cancer* 24, 159 (2025). https://doi.org/10.1186/s12943-025-02369-9

AI and digital health for timely cancer diagnosis

AI in remote monitoring and digital health, electronic health records (EHRs), mobile health applications, wearable technology, telemedicine services, and analytics powered by AI.

The Role of digital health in enhancing oncology outcomes

- Enhanced diagnostics and personalized treatment
- Optimized care coordination and personalized treatment approaches
- Patient empowerment and enhanced care coordination
- Telemedicine and remote consultations
- AI for enhancing clinical trials and patient recruitment

Adoption of AI in precision medicine

Evidence-based reports from Canadian oncology

- **The Emergence of Precision Oncology and Molecular Stratification in Canada.**

- Precision medicine is increasingly described not as a disruptive break from past medical practice, but as a continuation of medicine shaped by **advances in biotechnology and the availability of large-scale data** (Vicente et al., 2020, p. 4).

- This shift is being driven by the combined *maturation of digital health infrastructures*, *data science capabilities*, and the development of more precisely targeted therapies, which together are reshaping how disease is understood and treated (Ginsburg & Phillips, 2018, pp. 694–696).

- Canadian oncology progressively incorporated molecularly integrated **precision diagnostics into clinical practice**, a transformation now **embedded in national and provincial standards of care** (Liu et al., 2022, pp. 572–587).

The Benefits of Using AI in Canadian Precision Medicine

Cost benefits from adopting standardized biomarker testing and comprehensive genomic profiling for five stage IV cancers.

~135,000

Canadians expected to be diagnosed with Stage IV lung, colorectal, breast, prostate & pancreatic cancers

+3,440

Additional life-years generated through pan-Canadian adoption of CGP-NGS testing

>$180M

Societal benefits while costing less than current genomic testing approaches

- **Standardized procedures eliminate multiple rounds of testing, enabling more precise targeted therapy selection.**
- **Key cost drivers include reduced redundant testing and optimized therapy matching, delivering value for patients and the healthcare system.**
- **Pan-Canadian adoption of CGP-NGS costs less than current genomic testing approaches while generating substantial clinical and societal returns.**

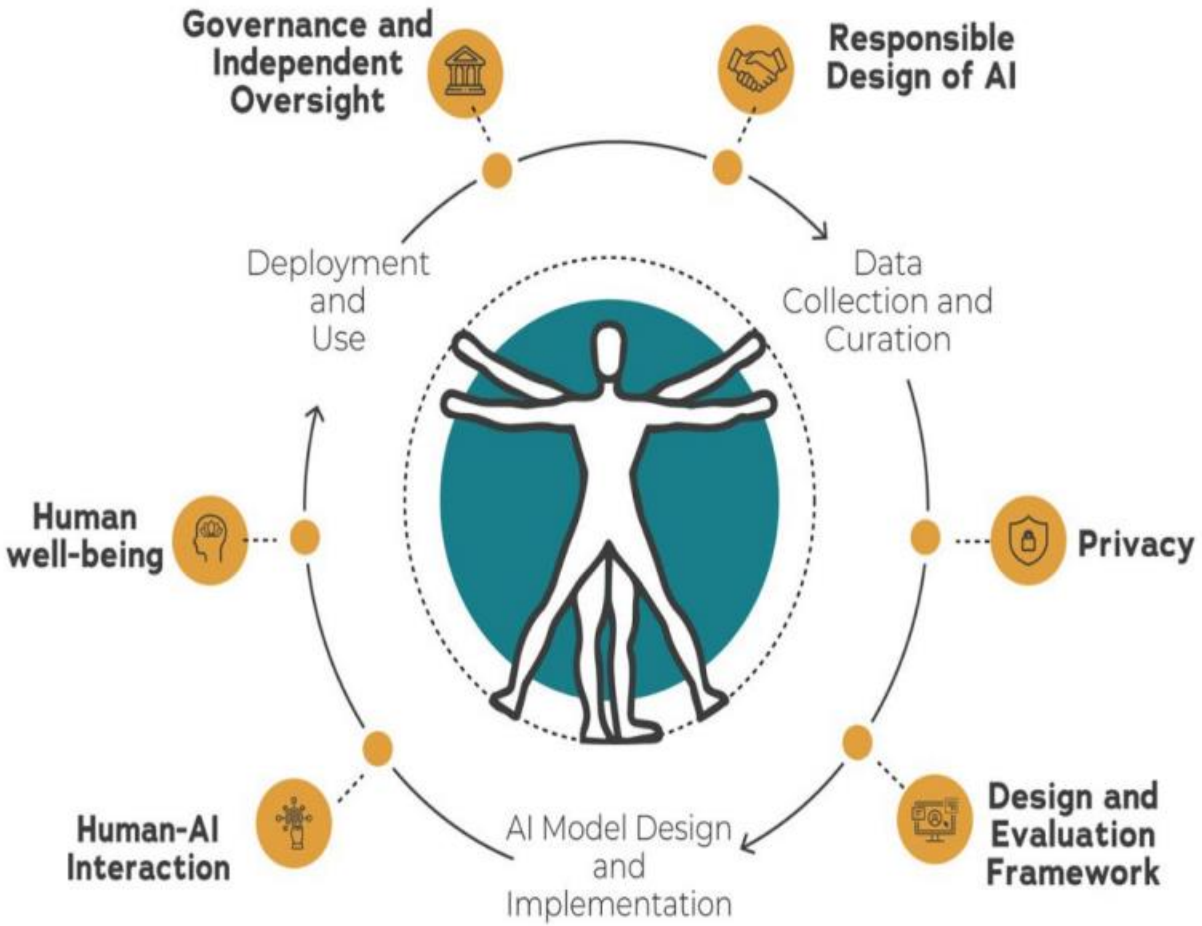
Source: Precision in Practice Report Colorectal Cancer Resource & Action Network (CCRAN), Conference Board of Canada (Nov. 2025)

Conceptual Framework for Translational AI in Oncology

Component	Focus	Challenges	Strategic Needs
Data Acquisition	Multimodal data collection	Privacy, quality control	Standardized pipeline
Preprocessing	Normalization, augmentation	Data heterogeneity	Automated pipelines
Model Development	Algorithm design, training	Lack of diversity in data	Robust methodologies
Internal / External Validation	Generalizability, robustness	Overfitting, bias	Multi-center benchmarking
Deployment & Monitoring	Performance tracking, updates	Clinical utility, sustainability	Real-world evidence
Ethical Considerations	Fairness, consent, transparency	Bias mitigation	Guidelines, frameworks
Regulatory Compliance	Approval standards, oversight	Rapid innovation	Adaptive regulation
Patient-Centric Design	Usability, accessibility	Diverse needs	Inclusive interfaces

Source: Tiwari, A., Mishra, S. & Kuo, TR. Current AI technologies in cancer diagnostics and treatment. *Mol Cancer* 24, 159 (2025).

SIX GRAND CHALLENGES of Human-Centered Artifical Intelligence



Ozlem Garibay et al. (2023), Six HCAI Grand Challenges, *International Journal of Human-Computer Interaction* 39(3).

Human Centered AI (HCAI) Design Guiding Principles

- Placing human needs, values, and wellbeing at the center at the system design and deployment of AI-enabled technologies

  (Xu, Gao & Dainoff, 2023)

- Paradigm shift from *Can we build this?*
  → ***Should we build this? And how will it serve people?***

  (Winby & Xu, 2025)

Human Centered AI HCAI Design Guiding Principles

Design principles aligned with human values and human goals (Xu, Gao & Dainoff, 2023)

1. ***Transparency and Explainability***
2. ***User Control*** (Full human control over outputs) and Empowerment of Patients/Medical professionals/Society at large
3. ***Ethical Alignment*** Values and societal norms to preserve, protect, and minimize harm
4. ***User Experience*** Patients are benefiting from improved and more equitable cancer diagnosis and treatment.
5. **Human Augmentation & Collaboration with AI**. Design AI to enhance human abilities and human-led collaboration, improving productivity and effectiveness.
6. **Safety and Robustness**. Prioritize user safety and maintain reliability in diverse scenarios to ensure resilience and reduce potential risks to users.
7. **Accountability.** Ensure responsible AI mechanisms for accountability to hold humans accountable for AI actions.
8. **Sustainability** Environmental, social, and economic well-being to prioritize human well-being and cultivate resilient ecosystems while aligning with sustainability.

The Alberta Thoracic Program

The AI-enabled pathway · what changed · why it worked

Audience Question — Diagnosing the System

What do you think is the PRIMARY cause of delayed lung cancer diagnosis in Alberta?

A	Shortage of oncologists and specialists
B	Fragmented coordination between providers
C	Insufficient diagnostic technology (CT, PET)
D	Patient behaviour and late presentation

Correct framing: B — the coordination failure. Technology exists. The gap is in the handoffs between them.

💬 **Reflection:** *Think of a system you know well . Is its primary bottleneck a resource problem or a coordination problem?*

System Failure Before ATOP

Median diagnostic interval 38 days — 90th percentile reached 148 days

Surgery wait time Median 105 days from diagnosis to treatment

Failed biopsy rate 45% of NSCLC patients — first biopsy non-diagnostic

Rural & remote patients Worse outcomes; forced to travel to Calgary or Edmonton

Coordination failures Redundant testing, miscommunication, undefined GP role

ATOP, Canada

Since 2011, ATOP is a leading Canadian programme exploring how system redesign can accelerate lung cancer diagnosis. Led by Professor Alain Tremblay, offers people with suspected chest malignancies evaluation that is **rapid**, **state-of-the-art** and **multidisciplinary**.

All.Can International is a not-for-profit organisation (ASBL) registered in Belgium. Its work is made possible with financial support from Bristol Myers Squibb (sustaining partner) and Roche, MSD, Johnson & Johnson and Illumina (funding members).

Overview of ATOP

Province-wide model

- Lead: Professor Alain Tremblay
- Two rapid clinics: Calgary and Edmonton
- Reaching underserved populations in remote and rural regions

Delivery

- Multidisciplinary team of experts
- Approximately 3,000 cases per year
- Nurse navigators and automated referrals

Diagnosis, staging and treatment

- Gold standard of care
- Access to clinical trials
- Full diagnostic modalities

ATOP integrated pathway within Alberta healthcare services

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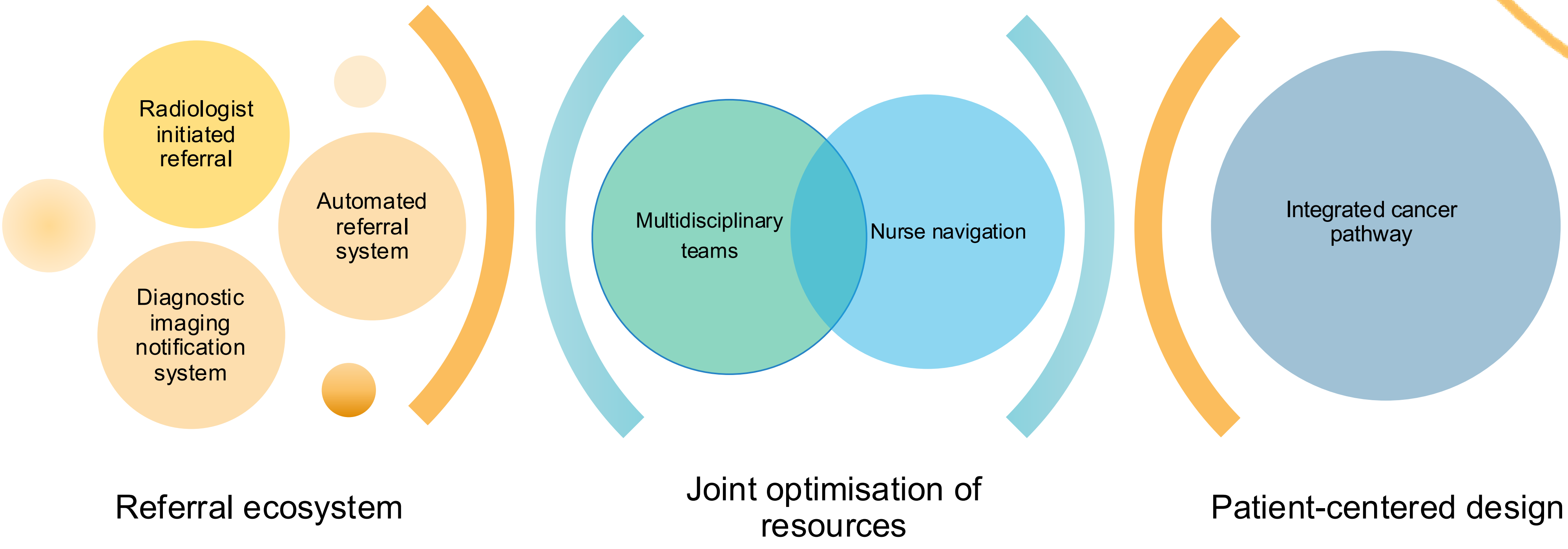
Innovation and impact



First computed tomography (CT) scan - First specialist appointment - Diagnosis - Treatment decision
Shortens median referral times from 23.6 days to 4.7 days

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Radiologist-Initiated Referrals

BEFORE — Traditional pathway

CT scan → Radiologist report → GP receives report → GP initiates referral → Specialist appointment → Diagnosis

Each handoff depends on individual action. No coordination mechanism. No tracking.

AFTER — Radiologist-initiated

CT scan → Radiologist detects finding → Radiologist directly initiates ATOP referral → Specialist appointment

The person with the clinical information makes the referral. Bottleneck eliminated.

Removing the Bottleneck

No difference in quality or completeness of referral information between groups (2013–2015 study)

faster to specialist

Weeks

faster in worst-case

6 days

Automated Referral System

The automation insight: remove the human from the coordination task — not from the clinical task.

23.6	4.7	689
Days — traditional referral (median)	Days — automated referral (median)	Patients in retrospective study (2020)

Key findings: Only 2 automated referrals exceeded 30 days vs. 25%+ of traditional referrals. Time savings were consistent across nodule types, physician specialties, and patient locations. No difference in referral quality or completeness.

ATOP in Practice — A System Transformation

Timely diagnosis Median referral time: 23.6 → 4.7 days. DI Notification process further accelerates specialist review.

Seamless coordination Nurse navigators review all referrals, initiate intake, and conduct preliminary evaluations — human continuity across a digital pathway.

Equity-focused design Province-wide reach including rural, remote, and Indigenous communities. Mobile diagnostic units and telemedicine-assisted referrals.

Advanced diagnostics CT, PET, EBUS-TBNA, EUS-FNA — all within one integrated pathway. Minimally invasive techniques reduce time to staging.

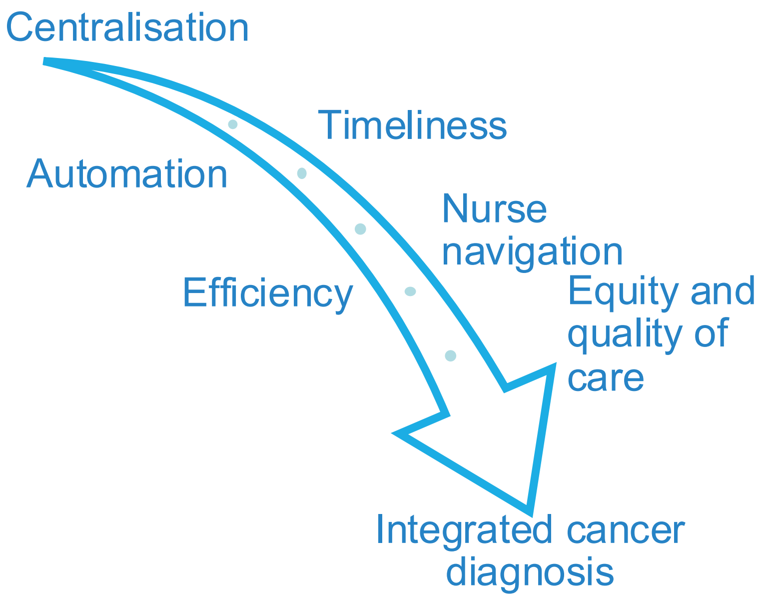
Continuous improvement Real-time data tracking creates feedback loops. The system can see itself and correct. Aligned with All.Can's 5/8 efficiency metrics.

OUTCOMES & IMPACT

ATOP Efficiency through Integration

All.Can efficiency metrics (5/8)

Time to diagnosis delays and streamline access.
Primary care intervention
Time from tissue diagnosis to treatment
Percentage of patient seen by a clinical nurse specialist
Patient experience



Transformed lung cancer diagnosis through:

- centralised triage
- radiologist and automated referrals
- process redesign and automation
- routine, real-time data tracking
- equity-focused design
- integrated services enable faster, safer cancer diagnosis and staging

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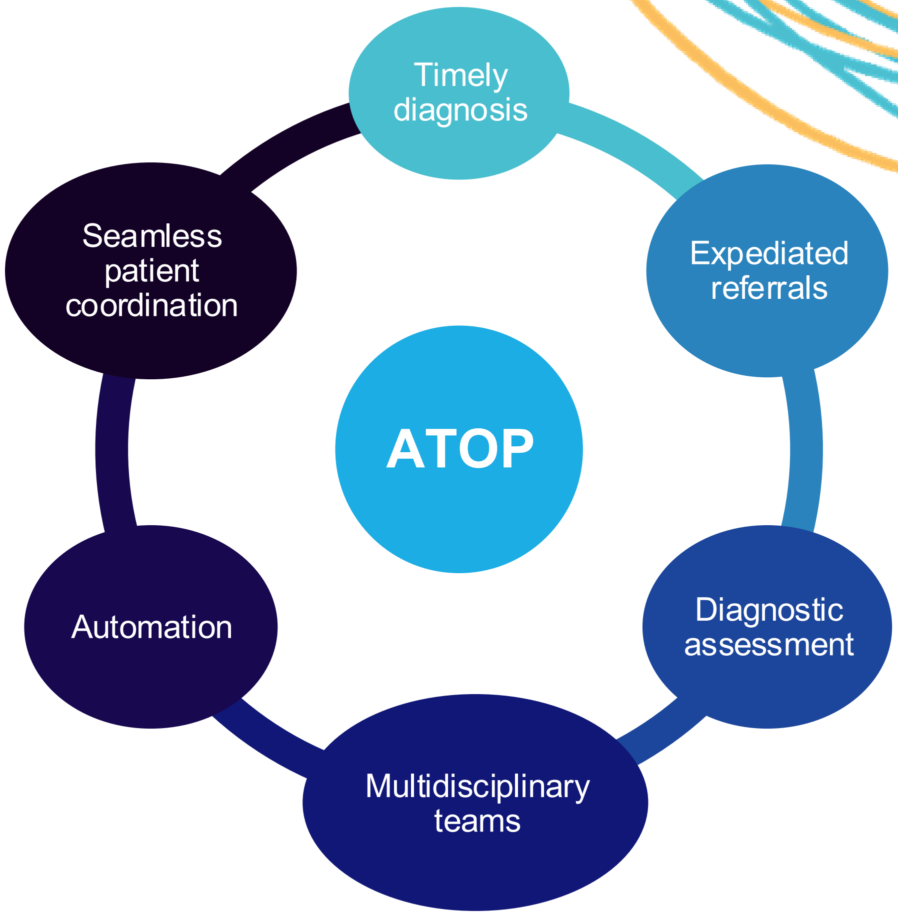
Key Takeaways from Implementation

- Centralised triage and multidisciplinary expertise shorten time from suspicion to treatment.
- Strengthening referral pathways through radiologist and automated referrals
- Expanding access to PET scans and EBUS in underserved regions through mobile diagnostic units or telemedicine-assisted referrals.
- Improving financial and logistical support for patients travelling long distances to referral centers to ensure equitable access to care.
- Equity-focused supports benefit underserved communities.
- Enhancing coordination between specialists and primary care providers through real-time data-sharing platforms to reduce diagnostic delays.



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ATOP's next steps — and the broader trajectory for AI-enabled cancer care:

Expand AI-assisted screening Extend automated detection to broader lung cancer screening populations — catching cases earlier, before symptoms appear.

Radiomics integration Move from AI-flagging to full quantitative radiomics — richer diagnostic information from every scan, feeding the MDT with deeper phenotypic data.

Strengthen referral ecosystems Automated systems that minimise wait times across all of Alberta — including telemedicine-assisted referrals for remote and rural populations.

Equity-focused expansion Mobile PET and EBUS units; financial and logistical support for patients travelling to referral centres; Indigenous community partnerships.

Continuous governance evolution As AI capability grows, governance frameworks (KOITL) must evolve to match — keeping the organisation in the loop at every new level of automation.

Contact details and further information

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Resource and references

All.Can Efficiency Hub
All.Can Canada
ATOP
Full list of references at this link

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ATOP Reverse-Engineered

The AI-enabled pathway · what changed · why it worked

15 minutes

ATOP Adaptive Technology

ATOP is a multidisciplinary program that integrates **technology, data, people, and organization** — achieving alignment and optimization of each element (best fit) → to create a ***reconfigurable adaptive system.*** Coupled with advanced digital and AI technology, ATOP has a **dynamic internal capacity** — the ability to adapt, integrate, reconfigure, and renew its resource base in response to evolving demands.

Integrated Responsiveness

As all four components are integrated seamlessly, the organization can respond quickly to external and internal conditions, innovate rapidly, and deliver exceptional PATIENT user experiences and improved diagnosis and treatment.

Microstructure & Open Systems

In a dynamic modern organization, the design pivots on the microstructure model of open system work systems — a unit of analysis involving the patient, the health system, and the ecosystem (mainly digital and technological advancement) — with clear boundaries.

Work System Design

Work systems play a crucial role in enabling the organization to respond quickly to external and internal conditions and PATIENT needs — designing flexible, adaptable work systems that facilitate the free flow of information, ideas, and resources across work units and functional structures.

*Based on the STS RT Webinar, "**HCAI & the Evolution of Socio-Technical Systems**", October 2025, by S. Winby*

Joint Optimisation — The Core STS Principle at Work

> *"Because technology will constantly evolve, joint optimisation between the social and the technical system will require continuous change and adjustment toward a specific goal — rather than designing a system around a fixed technology."* — Pasmore et al. (2019)

ATOP's joint optimisation — four co-equal elements:

Technology Automated referral software, AI-assisted radiology, EBUS, PET, real-time data tracking tools that evolve continuously, designed to serve the pathway.

Data Referral records, diagnostic intervals, patient outcomes, imaging data captured, analysed, and fed back into clinical decision-making in real time.

People Thoracic surgeons, pulmonologists, radiologists, nurse navigators, oncologists, patients all co-designed into the system, not adapted to it post-hoc.

Organisation Province-wide governance, multidisciplinary team structure, rapid-access clinics, equity-focused navigation- the system architecture that holds the rest together.

The Multidisciplinary Team- Exponential expertise

The MDT is ATOP's clinical intelligence layer — AI informs it, but cannot replace it

Thoracic surgeons Surgical staging, resection planning, operative decision-making

Pathologists Tissue diagnosis; molecular profiling; genomic testing coordination

Interventional pulm. EBUS, bronchoscopy, minimally invasive biopsy and staging

Oncologists Systemic therapy; treatment sequencing; clinical trial matching

Radiologists CT, PET interpretation; AI output evaluation; imaging synthesis

Nurse navigators Human continuity; patient relationship; pathway coordination

Reflection: Using AI-enabled technologies - **Learning and Planning -** functions for active adaptation.
all within one integrated pathway on the continuum of cancer care.

Keeping the Organisation in the Loop

> *"As AI systems take on more decision-support work, the risk is that humans approve outputs they don't fully understand — that accountability diffuses and the organisation loses the capacity to question, correct, or override."* Herrmann, T., & Pfeiffer, S. (2023). HICSS Proceedings.

Four managerial activity domains that keep humans structurally engaged:

Coordinating AI tasks Define new workflows, relevant roles, and interdependencies between AI outputs and clinical decisions.

Leadership & HR Align roles, people, and tasks. Employ and develop human expertise alongside AI capability — not instead of it.

External coordination Regulate access, monitor external influences, govern the sharing of risks and benefits across stakeholders.

Contextual change Assign measures and resources. Trace causes of problems. Decide risk-benefit trade-offs. Organise multi-level change.

ATOP embodies all four. Nurse navigators (coordination + HR). Provincial governance (external). Real-time data tracking (contextual). MDT review (loop closure).

Audience Question — The KOITL Domain

Which of Herrmann & Pfeiffer's four KOITL domains is most often ABSENT in AI deployments you've observed?

- **A** Coordinating AI tasks (workflow redesign)
- **B** Leadership & HR (human expertise alongside AI)
- **C** External coordination (governance, equity)
- **D** Contextual adaptation (feedback loops, ongoing change)

Most common answer: D — contextual adaptation. Systems are deployed without embedded feedback loops, without the structural capacity to see bottlenecks and correct them. The result: KOITL failure in slow motion.

The Agency Continuum — Where ATOP Sits

Tschepe, S. (2026). Strategic Framework for Distributing Human-AI Decision-Making. Hasso-Plattner Institute.

Human only
No AI

Human assisted AI
Human leads;
AI assists

Mixed agency
Shared
decision

AI-assisted
AI leads;
human reviews

AI only
Full
automation

ATOP's strategic position: Automation helps fill systemic gaps/inefficiencies across the primary, secondary and tertiary services within Alberta'

1. Speed & coordination: 23.6 → 4.7 days referral time
2. Error/variability reduction: automated triggers eliminate human-dependent bottlenecks
3. Capacity scaling: 3,000+ referrals/year across a vast geography

HCAI Maturity Model — Where Is Your Organisation?

ATOP operates at L3–L4 with a clear trajectory toward L5 (expanding AI to screening and genomics). In STS language, L5 = continuous organisational redesign — treating the human-AI relationship as a living system.

L1	**Isolated tool use** AI as standalone experiment. No integration with clinical workflow. Outputs not acted on.	
L2	**Integrated use** AI embedded in specific tasks. Some workflow redesign. Limited governance.	
L3	**Optimised system** AI + human roles co-designed. Feedback loops. Real-time data. Equity considered.	← ATOP
L4	**Adaptive organisation** Continuous re-optimisation. Dynamic capacity. Technology, data, people, organisation aligned.	← ATOP
L5	**Innovation leadership** Lead best practices. Optimise human-AI co-evolution. Extend to new domains (screening, genomics).	← ATOP

Winby & Xu, 2025 — Applied to ATOP

Deep Medicine — Four Arguments That Fit ATOP

The gift of time AI handling coordination and administrative burden gives clinicians back time for genuine human presence. ATOP's automation enable navigators and MDT members to be fully present with patients.

Deep phenotyping Radiomics and genomic profiling synthesise a richer, more complete picture of each patient's biology. Comprehensive genomic testing and biomarker testing (Advanced Stage 3&4 cancer diagnosis)

The empathy imperative. Empathy is scarce in modern medicine. Nurse navigators- freed from inefficiencies- ATOP's structural answer to Topol's empathy imperative.

Human AI complementarity. AI and human intelligence are complementary, not competitive. ATOP is the institutional proof: 23.6 to 4.7 days achieved by placing humans where judgment is required, software where fast processing of complex data points/coordination is required.

Lessons From ATOP

1. Start with the patient pathway, not the technology
2. Substitute coordination; augment judgment; transform what's possible
3. Design feedback loops in from the start - visibility enables correction
4. Equity is not an add-on - it is a design criterion that shapes every decision
5. Nurse navigators (human connective tissue) are as essential as the software
6. Keep the organisation in the loop - governance must evolve with AI capability
7. Joint optimisation is ongoing - redesign never stops because technology never stops
8. Create more room for phronesis — measure whether wise judgment is flourishing

What ATOP proves:

System redesign grounded in data, collaboration, and compassion is not just possible. It is work worth doing.

AI and human judgment are not in competition. Jointly optimised, they are more powerful than either alone. This of course, is possible with proper monitoring and supervision of the experts in the field.

The conditions for wise, patient-centred care can be designed. ATOP is the proof.

Every delay reduced is a life given back. Every system we repair is an act of care at scale.

Reflection Pause

What AI cannot replace?

Embodied Knowledge

Knowing-how · Stored in the body · Beyond rational thought

Embodied knowledge is the understanding, skills, and expertise acquired and stored within the body through sensory experience and motor actions — a ***"knowing-how"*** that enables us to interact with the environment, often operating **without conscious thought.**

🎻 Music | ⚽ Sports | 💃 Dance | 🧠 Intuition | 🔪 Surgery

Action-Oriented

Developed through bodily movement, practice, and physical experience — essential for skill acquisition.

Context-Dependent

Highly contextual, reflecting personal history, social interactions, and environmental context.

Beyond Intellectualism

Challenges mind-body dualism — the body itself is a source of, and vessel for, knowledge.

Riding a bike, performing surgery, intuitive professional judgment — ***these are enacted, not merely possessed.*** Practical wisdom is the human capacity to act rightly from within a specific situation — integrating judgment, character, and accumulated experience.

Are we asking the right questions?

The Agency Continuum- Tschepe 2026 - The Orchestrator Question

- A specific type of knowledge in the work context- judgment and solving the right question.
- Applicable to research and improving a system/program’s efficiency.

What is relevant in the upcoming tsunami of converging exponentials?

- Why did we get here? How can we stop?
- What questions are we not asking?

⚡ NEXT 6 MONTHS · 2026

The Supersonic Tsunami of Converging Exponentials

⚙ Compute Scaling | 🧠 Model Capabilities | 🌐 Infrastructure Deployment

Compute scaling · Model capabilities · Infrastructure deployment — phase shifts, not incremental change. What it really means: **humans carry wisdom, phronesis, practical knowledge — those deeply human features that can never be placed in a database.**

Phronesis · Practical Wisdom · Human Judgment · AI Abduction vs. Human Evaluation · Embodied Intelligence

Final Insights

Behind every diagnosis, **there is a heartbeat.**

Every bit counts, **but not every bit (or byte) makes a difference.**

Every system redesigned is an act of care at scale — a cycle of hope, authenticity, and imagination.

UPCOMING EVENTS

THANK YOU FOR COMING!

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