British Columbia

May, 2023

Towards the routine use of genome-based testing in Canada:

State of Readiness Progress Report

Why does British Columbia need to be prepared for a future of genomic medicine?

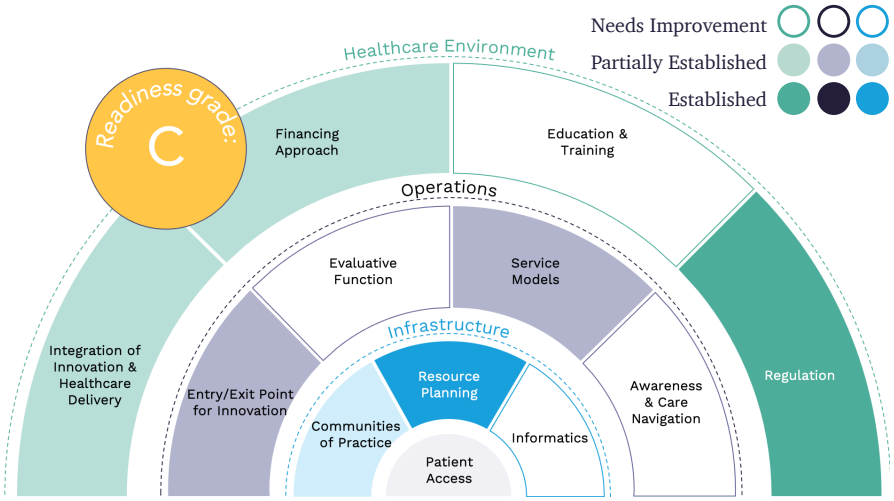
Improved care – including better health outcomes, reducing harm from therapy, and improving survival and quality of life.

Better patient and care provider experiences – reducing the need for referrals and other diagnostic tests, and improving time to diagnosis.

Better science and economic growth – aiding scientific discovery and clinical trial enrollment, creating commercial and investment opportunities as well as future-proofing Canada's healthcare workforce.

Healthcare efficiency – genomic medicine creates opportunities to reduce healthcare costs while creating the necessary infrastructure for delivering 21st century care.

British Columbia is leading necessary health system transformation through its development of a single Provincial program, the BC Provincial Laboratory Medicine Services (PLMS), which is creating many of the necessary operational conditions and underlying infrastructure required to optimize genetic testing.



Its current state of readiness has earned **British Columbia a grade of C**

Takeaway:
British Columbia is taking the necessary steps to advance its system readiness for genome-based testing. It needs to continue to make informatics and care navigation a priority, and should expand its efforts to engage stakeholders.

Strengths:

- Single service organization (PLMS) that establishes a community of practice supports resource planning.
- Single point of entry with explicit timelines for evaluation and coordination across service providers.
- Some integration of innovative testing.

Weaknesses:

- Lack of integration of laboratory information across centres.
- Limited engagement and involvement of broader stakeholder community.

Evidence-based best practices	Action
Informatics is essential for test development, interpretation, and clinical decision support (1,2). Ensuring adequate integration of test results into electronic health records will also provide a key resource for real-world monitoring, disease management, quality assessment and assurance, and financing (3).	Create a cross-regional integrated laboratory information system and plan for integration into electronic health records.
High performing health systems require broad engagement of those impacted by testing. These include the patients, administrators, IT professionals, implementation and genome scientists, public and private sector innovators and others (scientists, legal and ethics experts, professional organizations, bioethicists, regulators) (4).	Expand opportunities for engagement with broader members of the healthcare/innovation community. This could include expanding discipline committee membership or creating new committees.
Effective delivery of genetic testing requires educational standards as well as navigation tools for patients and the public including referral guidelines, a test directory, eligibility criteria, tools/education for ordering genetic testing, and a care clinic directory. (5)	Improve the processes of navigation for care providers and patients and develop standards for education and training.

More information about the State of Readiness Progress Report for Genomic Testing in Canada can be found here: TBD

Research support was provided by the following companies: Amgen Canada Inc., AstraZeneca Canada, Eli Lilly Canada Inc., GlaxoSmithKline Inc. (GSK Canada), Janssen Inc./J&J, Pfizer Canada ULC, Thermo Fisher Scientific Inc., and Roche Canada.

Background

Canada's second largest province by size and third largest by population (approx. 5 million) has leveraged its single health authority dedicated to highly specialized services (the Provincial Health Services Authority, PHSA) to coordinate the delivery of genetic testing. Highly specialized testing is delegated to larger teaching hospitals (Vancouver General Hospital; St. Paul's Hospital; Royal Columbian Hospital; BC Children's Hospital) depending on type of test or therapeutic program. Testing is also referred to out-of-province providers for rarer conditions. The BC Provincial Laboratory Medicine Services (PLMS) (formerly the BC Agency for Pathology and Laboratory Medicine, BCAPLM) is the Provincial Program under the PHSA which is responsible for the administration and provision of insured laboratory benefits to British Columbians.

	Topic	Established	Partially Established	Need for Improvement
Infrastructure	Creating communities of practice and healthcare system networks	• The PHSA/PLMS is responsible for intraregional networks		• Engagement with industry stakeholders lacking
	Personnel, equipment, and resource planning	• Systematic oversight for resource planning through the PLMS and strategic plan		
	Informatics		• Projects underway to create federated data commons	• Lack of integration of laboratory information across centres
Operations	Entry/exit point for innovation	• Single point of entry through PLMS Test Review Process • Explicit timelines for consideration	• A genetics and genomics discipline committee also influences test introduction	• Closed application process • No reassessment processes
	Evaluative Function		• Criteria published although scoring algorithm and rationale for recommendations not available	• No broad stakeholder engagement
	Service Models	• Service coordination across providers through the PLMS	• Further coordination in health authorities	
	Awareness and care navigation		• Navigation for care providers and patients lacking, although BC does have nurse navigators	• No test directory or protocol but ongoing communication to providers
Environment	Integration of innovation and healthcare delivery	• Some investigational testing funded as part of larger multigene panels	• Translational research through Genome BC, and GSC	
	Financing approach		• Ministry has flexibility to release additional funds for testing on a per-case basis	• Funding formula designed for community-based testing. • No funding for test development
	Education and Training			• No province-wide standards for education and training in development
	Regulation	• DAP ISO 15159-province-wide accreditation standards • Standards for analytic parameters or test proficiency are developed by individual centres with the PLMS	• No province-wide analytic standards although care often delivered through a single lab	

References

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