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The JGH BIOPORTAL

Impact Report | October 2024

Thanks to your incredible support, the BioPortal is revolutionizing medicine at the Jewish General Hospital and beyond.



ABOUT THE JGH BIOPORTAL

The BioPortal is an extensive database containing consenting patients' biological samples and associated health information. By creating a large and genetically diverse biobank, researchers and clinicians can analyze significant amounts of data to advance the fields of precision medicine and genomics.

The findings that emerge from the BioPortal can be incorporated into clinical decision-making, so patients can receive outstanding care based on their unique genetic make-up.

Designed in full alignment with the JGH's digital health strategies, the BioPortal is optimally positioned to address industry needs and facilitate clinical trials with specific, understudied populations to further drug development, gain new knowledge about human genetics, and bring life-changing advances to patient care.

Moving away from the one-size-fits-all approach to medicine will improve how diseases are prevented, diagnosed, and treated. Each patient's genetic information provides valuable insight into their risk for specific diseases, the timeframe in which they need to be screened, and an optimal treatment plan to ensure the best possible outcome.

DID YOU KNOW?

The BioPortal evolved out of the JGH's Quebec Covid-19 biobank, the largest hospital-based Covid-19 biobank in Canada, which helped researchers better understand, diagnose and treat the virus.



JGH BIOPORTAL – THE DNA OF AN INCREDIBLE INITIATIVE

VISION

To transform the JGH into a leading healthcare centre in precision medicine and genomics to benefit all its patients and contribute to medical advances at the national and international levels.

MISSION

To incorporate precision medicine and genomics into clinical decision-making and research activities across all specialties to improve individual patient care and outcomes.

STRATEGY

Support precision medicine and genomics-guided research and care, using four pillars aligned with the JGH's data-driven technology.

Four Pillars:

- 1 Ethics and Governance** – ensuring ethical research, project management, and patient identity protection
- 2 Hospital-Based Data Warehousing & Bioinformatics** – aligning the BioPortal database with the JGH's Connected Health Record for the most effective use of stored health information
- 3 Biobanking** – creating a diverse collection of biological samples to support new drug development and testing
- 4 Genomics Technologies** – remaining at the forefront of the field with the most advanced technological tools

THANK YOU FOR MAKING AN IMPACT

Your generous gift is helping the BioPortal build one of the most diverse biobanks in the world.

THE POWER OF PATIENT RECRUITMENT

Recruiting patients is the foundation of any successful research program. Over the next five years, the BioPortal team aims to collect biological samples from 12,500 diabetic patients to build a valuable database, which will lead to important discoveries about how to prevent, diagnose, and manage diabetes with a focus on how specific genetics come into play.

The BioPortal is currently one of the most ethnically diverse biobanks in the world. Most biobanks obtain approximately 95% of their samples from patients of European descent. Among the samples collected at the JGH, only 51% are from individuals of European ancestry. The remaining 49% are from patients from many different backgrounds, providing researchers with a large and varied pool of genetic information to analyze. This is a great advantage to the JGH, putting us in a unique position to make pioneering advances in the field.



YOUR REMARKABLE IMPACT

Generous support from donors has been at the core of the BioPortal’s recruiting phase, making it possible for the research team to lay the groundwork for this promising initiative.

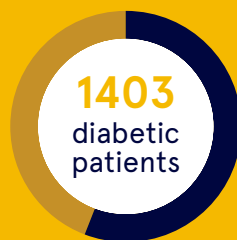
With collaboration from the excellent network within the JGH, the research team is on track with its recruitment goals for 2023–2024. The team has gathered crucial data from participating patients, which will be analyzed in the coming year to gain important knowledge on the complications of diabetes.

The data collection phase of the project began in Fall 2023.

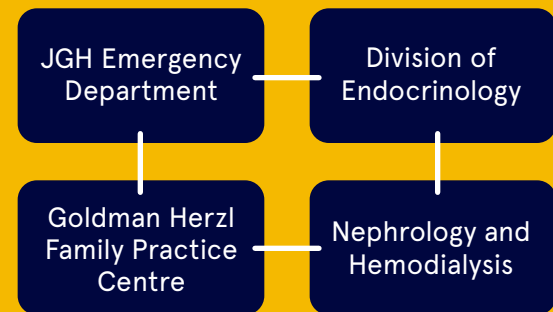
**2023–2024
Recruitment Goal:**



**Number of
patients recruited
(Sept 23–May 24):**

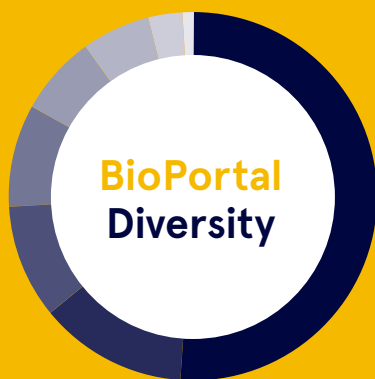


JGH BioPortal Recruitment Network:



WHO’S PARTICIPATING

Patients range from 18 to 95 years old, average age of 62 years old



DID YOU KNOW?

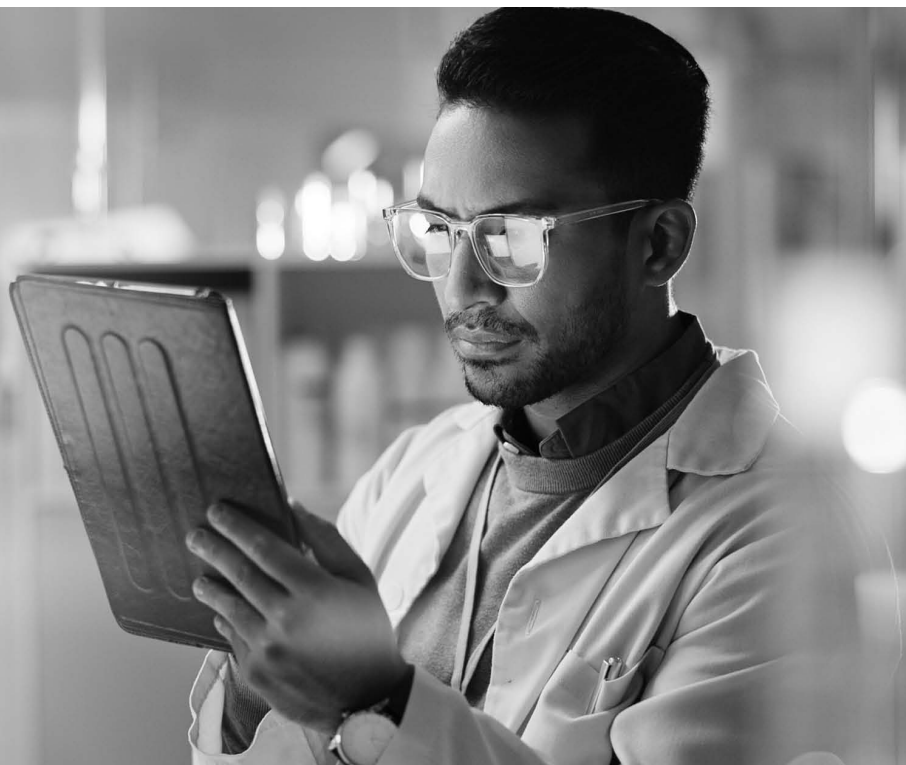
Drug development programs supported by human genetics are two to four times as likely to reach the market.

The data on diabetic patients stored in the BioPortal can be used to develop drugs that may significantly improve care plans for diabetic patients and possibly change how diabetes is treated globally.



LEADERS IN AN OPEN SCIENCE APPROACH

Your tremendous contribution has facilitated new opportunities for the BioPortal's development.
Thank you.



Research delivers maximum benefits to patients when collected data is shared with a larger community of researchers who can incorporate the information into their studies. A major obstacle in medical research is that data is rarely accessible on a broader scale, limiting the speed at which progress can be made and preventing findings from being harnessed towards bettering the lives of patients.

An open science approach greatly expands the value of data, allowing thousands of people to build on an existing body of knowledge and use the creativity of a larger scientific community to ask and answer questions that otherwise would not have been thought of. The most successful biobanks in the world are now using this approach to maximize the utility of biological samples and work with a system that can be easily adapted to the evolution of the field and the future of medicine.

The BioPortal is structured so that JGH researchers have permission from participating patients to share data, without encumbrance, with qualified researchers in academia and industry.

Patients have consented to be contacted for subsequent research, creating more opportunities to follow participants on a long-term basis, which may lead to greater discoveries.

All researchers granted access to the BioPortal must submit an application for review by the ethics committee and adhere to the BioPortal's strict data protection standards. Information stored in the database does not reveal a patient's personal identity.

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Donors have given us a lever to effect change.

- **Dr. Brent Richards**, Principal Investigator,
Lady Davis Institute

YOUR REMARKABLE IMPACT

Donor support has provided significant leverage in obtaining highly competitive grants and industry partners, which will enable a broader range of data collection, such as long-term sampling on patients, and proteomics research, the study of how proteins function and interact inside cells – rare and useful data that will enrich the BioPortal.

WHAT'S MORE



The BioPortal's progress to date has led to collaborating with an industry partner in a long-term study, involving 3,000 patients with diabetic kidney disease. Patient follow-ups and sampling will take place over 5 years and potentially lead to the development of a drug that prevents the progression of kidney disease in individuals with diabetes.



The BioPortal has been awarded two important grants, which will assist with increasing the number of researchers on the team and help to support the development of the proteomics branch of the initiative.



The BioPortal's data is in the process of being standardized for easier access among clinicians and researchers who have access to the database.

Making the BioPortal available to a larger community of researchers will accelerate progress in how we prevent and treat diseases, leading to improved health outcomes for patients both locally and globally.



PREVENTING A SILENT DISEASE

Vision-threatening eye disease is a potential complication of diabetes and the leading cause of blindness in Canada. An annual retinal screening is an important part of a diabetic patient's healthcare plan to prevent serious eye-related health problems.

Unfortunately, for many diabetics, annual eye checks do not take place. Some individuals face socio-demographic challenges, which can create obstacles to accessing necessary care for optimal disease management. Many patients within the JGH catchment area are newcomers to Canada, who are unfamiliar with the healthcare system. Language barriers often stand in the way of adequately meeting their healthcare needs. In some cases, individuals must work two or three jobs, making it extremely difficult to attend appointments. Many patients are not even aware that they need an eye scan, and as a result, slip through the gaps in the system.



Preventing vision-threatening eye disease in over one hundred patients started with your support. Our patients are truly grateful. Thank you.

YOUR REMARKABLE IMPACT

Donations are key to improving access to care and health equity for patients participating in BioPortal research. By helping to equip the team with the necessary tools and staff, they can recruit and deliver care to more research participants who might otherwise face barriers to receiving essential healthcare services for effectively managing their medical issues.

Since the launch of the recruitment phase in September 2023, the BioPortal has recruited a diverse group of diabetic patients, enabling the team to make noteworthy strides in providing healthcare support for immigrant communities who seek care at the JGH.

As part of the health data collection process, each BioPortal participant receives a retinal scan with equipment made possible by donors. An AI-generated algorithm then analyzes each scan to predict whether a patient is at risk of diabetic retinal disease, allowing the team to identify individuals who need immediate care in ophthalmology.

To date, over one hundred patients, have been identified as being at-risk of irreversible vision loss caused by bleeding in the eye. They were quickly referred to ophthalmology for a simple, safe procedure that prevents diabetic blindness.



The BioPortal team extends its heartfelt gratitude for all that you've made possible. Thank you for your commitment to this cutting-edge initiative that is making an enormous impact locally and internationally.

FUTURE DIRECTIONS

As the BioPortal moves into its second year, the team will continue to recruit diabetic patients to build on the existing database. Analysis of the data collected during the first year of the initiative will begin in Fall 2024.

While diabetes will remain the primary focus in the coming year, JGH researchers plan to expand the BioPortal's database in the future to include valuable health information from individuals with cancer, osteoporosis, and other common and rare diseases.

As the BioPortal continues to develop, the greater the advances in patient care, using precision medicine and genomics.





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