

NEWS RELEASE

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Are self-disinfecting surfaces the “Midas” touch for reducing hospital infections?

Pilot study examines environmental and genomic solution for healthcare associated infections

Vancouver, BC – Healthcare associated infections (HAIs) are a major burden on patients and healthcare systems worldwide. Despite strict hygiene practices and other preventative measures in hospitals there are an estimated 220,000 cases with 8000 deaths per year in Canada. Costs associated with HAI’s is estimated to be over \$15million per year for Vancouver Coastal Health (VCHA) alone. One of the highest risk groups for HAIs are Bone Marrow Transplant (BMT) patients. These patients’ immune systems are weakened during the course of their treatment making them highly vulnerable to pathogens until their immune system recovers.

Dr Elizabeth Bryce, Regional Medical Director for Infection Prevention and Control, Vancouver Coastal Health, Dr. Raewyn Broady, Director of the BMT program, and Dr. Linda Hoang, Medical Microbiologist, BC Centre for Disease Control Laboratory are leading a two-year pilot study that will tackle reducing the risk of infection in BMT patients using two complimentary and novel approaches. First, to reduce the bio-burden on all touch surfaces, three patient isolation rooms will be re-engineered with self-disinfecting surfaces containing copper-nickel and titanium dioxide and outfitted with contact-free motion activated devices, filtered water, and ultraviolet light in the bathroom. Second, surveillance for pathogens in patients, healthcare workers and rooms will be addressed by microbiome profiling and the current standard of care microbial culturing.

The study leaders anticipate valuable insights into the role that the hospital environment (and healthcare staff) may have on the evolution of a BMT patient’s microbiome during the transplant and recovery process. This in turn should provide ideas into improved methods to reduce HAIs for this target patient cohort as well as informing general infection prevention strategies. Their hope is to gather enough evidence to establish a future large scale study across the country to reduce HAIs and ultimately decrease the morbidity and associated economic burden on healthcare spending.

“Infections cost patients and hospitals. By taking advantage of novel engineering along with advances in genomics, we hope to better understand the transmission dynamics of microbes between the patient, the healthcare worker and the environment,” Says Dr. Bryce. “Clearer

understanding of this relationship will allow us to better evaluate newer healthcare technologies and improve the effectiveness of infection prevention measures.”

Previous health economic evaluations on infection prevention and control programs at Vancouver Coastal Health demonstrated that improved strategies can lead to significant HAI reductions and millions of dollars in cost avoidance- increasing optimization of bed occupation, reduction in isolation cleaning, medications, and an increased returned time to nursing care.

“Incorporating microbiome surveillance into the multi-faceted hospital environment including, patients, workers, and the rooms themselves provides a unique level of detail,” says Dr. Alan Winter, President and CEO of Genome BC. “We are pleased to be supporting a project that could prevent infection in some of the most susceptible patients in BC and beyond.”

This project, Prevention of Healthcare Associated Infections in Bone Marrow Transplant Patients is valued at approximately \$400,000 and was funded by Genome BC’s User Partnership Program (UPP), the VGH & UBC Hospital Foundation and is also supported by the Public Health Agency of Canada. Project management and products have been donated through the Coalition Healthcare Acquired Infection Reduction (CHAIR).

For more information on the UPP program please [click here](#).

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About Genome British Columbia:

Genome British Columbia is a catalyst for the life sciences cluster on Canada’s West Coast, and manages a cumulative portfolio of over \$710M in 254 research projects and science and technology platforms. Working with governments, academia and industry across sectors such as forestry, fisheries and aquaculture, agri-food, energy and mining, environment, and human health, the goal of the organization is to generate social and economic benefits for British Columbia and Canada. Genome BC is supported by the Province of British Columbia, the Government of Canada through Genome Canada and Western Economic Diversification Canada and more than 300 international public and private co-funding partners. www.genomebc.ca

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