

Innovation Academy 2013

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SARAYA

Innovation Academy 2013 - 1st Prize: Elizabeth Bryce (Canada)

Innovation Academy Update on A Novel Immediate Pre-Operative Decolonization Strategy Reduces Surgical Site Infections

We are delighted to update you on what the ICPI Innovation Academy award and process has meant to our work over the eighteen months. Following the award, the use of nasal photodisinfection and chlorhexidine skin wipes immediately pre-operatively received considerable provincial and even national attention. Subsequently, the provincial government of Alberta reviewed our data, corroborated our statistical methods and we were then asked to present our findings in the major medical centers in that province's two major cities.



The independent statistical analysis by the Alberta government strengthened the publication describing our work which was accepted for publication by the Journal of Hospital Infection (attached). We were also asked to showcase the photodisinfection technology at the October 2013 International Women's Forum World leadership Conference which is an international assembly of preeminent women across careers, cultures and continents. The work has been presented by invitation at Medical Grand Rounds and other symposia both locally and internationally (attached).

We have used part of the funding to host a multidisciplinary forum to explore future possibilities for clinical use of photodisinfection (attached). This has led to a number of proposals which we are currently reviewing and prioritizing as to feasibility with the remaining funds. In the interim, the technology has been implemented at the University of British Columbia Hospital, is under consideration at two sister facilities, and is being implemented in a facility in another health region in British Columbia. The provincial government is exploring the possibility of funding the technology at other

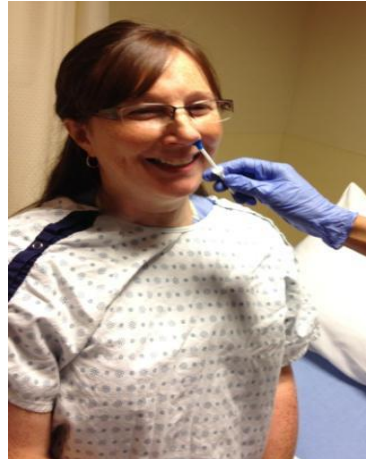
sites as part of a feasibility and efficacy assessment and, because it is a Vancouver-based company, this has been discussed in our legislative assembly (attached). The use of photodisinfection for management of chronic sinusitis is being evaluated both locally and in the province of Quebec and the small series to date has demonstrated clinical efficacy. We are currently working on an article describing the duration of effectiveness in eradicating Staphylococcus aureus using nasal photodisinfection.

Finally, we will be offering a bursary of \$1,000 for medical or surgical residents interested in pursuing a project using nasal photodisinfection. In recognition of the commitment of nursing to this project, a bursary of \$500 will be offered for nursing staff to attend a surgical conference of their choice.

We are honoured and grateful to receive the award. The Innovation Academy platform has certainly contributed to the acceptance and development of this technology. The experience of presenting and advocating for this new technology in Geneva was invaluable.

Sincerely,

Dr. Elizabeth Bryce on behalf of the
Vancouver General Photodisinfection Study Group



This novel surgical pre-operative decolonization program using (A) chlorhexidine wipes (SAGE™) and (B +C) intranasal MRSaId™ photodisinfection decreased institutional surgical site infection rates over the project period. This has been sustained for the last two years. [Nasal photodisinfection and chlorhexidine wipes decrease surgical site infections: a historical control study and propensity analysis.](#) Bryce E, Wong T, Forrester L, Masri B, Jeske D, Barr K, Errico S, Roscoe D.J Hosp Infect. 2014 Oct;88(2):89-95.

Abstract O010

A NOVEL IMMEDIATE PRE-OPERATIVE DECOLONIZATION STRATEGY REDUCES SURGICAL SITE INFECTIONS

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Introduction: Pre-operative decolonization therapy (DcTx) using chlorhexidine (CHG) body washes and/or intranasal mupirocin can reduce surgical site infections (SSI) but compliance is often suboptimal. The effectiveness of a novel approach to immediate pre-operative decolonization therapy using intranasal antimicrobial photodisinfection therapy (PDT) and CHG body wipes in reducing SSIs was assessed.

Objectives: To determine if immediate pre-operative decolonization using PDT and CHG body wipes reduced SSI rates

Methods: Between Sept 1, 2011 and Aug 31st 2012, 3068 elective cardiac, orthopedic, spine, vascular, thoracic and neurosurgery patients were treated with CHG wipes the night prior and day of surgery and received intranasal PDT in the preoperative waiting area. Weekend cases, procedures performed after the pre-operative dayshift, and emergency cases going directly to the operating room were not eligible. SSI surveillance remained unchanged from previous years and patients were followed for a minimum of three months. Results were compared to a historical control group consisting of 12,387 patients over four years and to a concurrent control group of 196 untreated patients.

Results: A significant reduction in the SSI rate was observed after the intervention [historical-control group 2.7% and treatment group 1.6% ($p < 0.0001$ RR 1.0114)]. The risk of having a *Staphylococcus aureus* infection was higher in the concurrent untreated (61%= 11/18 infections) compared to the treated group (32%=16/50 infections). The reduction in SSIs compared to the historical rates resulted in a cost avoidance of approximately \$1.2 Million (Can) and would have permitted approximately 140 additional surgeries to be performed.

Conclusion: The combination of PDT and CHG wipes immediately pre-operatively reduces SSIs and is cost-effective.

Disclosure of Interest: E. Bryce Grant/Research support from The Vancouver Hospital Foundation funded this project. Ondine Biomedical discounted the cost of PDT supplies and provided technical advice but had no role in data collection, analysis or interpretation of resultsT. Wong Grant/Research support from The Vancouver Hospital Foundation funded this project. Ondine Biomedical discounted the cost of PDT supplies and provided technical advice but had no role in data collection, analysis or interpretation of resultsD. Roscoe Grant/Research support from The Vancouver Hospital Foundation funded this project. Ondine Biomedical discounted the cost of PDT supplies and provided technical advice but had no role in data collection, analysis or interpretation of resultsL. Forrester Grant/Research support from The Vancouver Hospital Foundation funded this project. Ondine Biomedical discounted the cost of PDT supplies and provided technical advice but had no role in data collection, analysis or interpretation of resultsB. Masri Grant/Research support from The Vancouver Hospital Foundation funded this project. Ondine Biomedical discounted the cost of PDT supplies and provided technical advice but had no role in data collection, analysis or interpretation of results