

The Canadian Spine Society is a collaborative organization of spine surgeons advancing excellence in research, education and patient care

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19<sup>th</sup> ANNUAL SCIENTIFIC CONFERENCE OF THE  
**CANADIAN SPINE SOCIETY**

Wednesday, February 27<sup>th</sup> - Saturday, March 2<sup>nd</sup>



**ABSTRACTS FOR PRESENTATION**  
**2019**

Fairmont Royal York 100 Front Street West Toronto Ontario Canada

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**Accreditation:** *This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, approved by The Canadian Orthopaedic Association.*

**Course Objectives:** *The Annual Scientific Conference of the Canadian Spine Society is a yearly review of the state of spine care in Canada providing a uniquely Canadian perspective on the treatment of spinal problems. Held jointly with the Canadian Paediatric Spine Society the meeting encompasses both adult and paediatric issues. Attendees will discuss and debate current concepts in both the surgical and non-operative management of a wide range of spinal pathologies. This year the conference highlights means to achieve optimal patient care both before and after surgery: “prehabilitation” as well as rehabilitation. It examines the highly relevant subject of civility and professionalism in an increasingly confrontational society. The program takes a broad look at the contemporary pressures driving spine care from the impact of wait times to the influence of the latest technological advances. Topics encompass everything from breakthroughs in basic science to surgical manpower requirements. This meeting offers participants in the Canadian Spine Outcomes and Research Network (CSORN) a chance to come together and review ongoing research while exchanging ideas for future projects. This Annual Scientific Conference with its CME approved mix of didactic lectures, interactive symposia, hands-on product demonstrations and professional interaction is the most important spine meeting in Canada.*

## Efficacy and Cost-Effectiveness of Photodynamic Therapy in Prevention of Surgical Site Infection

Daniel Banaszek<sup>1</sup>, Tom Inglis<sup>1</sup>, Titus Wong<sup>2</sup>, Program Surgeons (VSPS)<sup>3</sup>, John Street<sup>1</sup>

<sup>1</sup>University of British Columbia, Vancouver, BC, Canada. <sup>2</sup>Vancouver Coast Health Infection Control, Vancouver, BC, Canada. <sup>3</sup>Vancouver Spine Institute, Vancouver, BC, Canada

### Objectives

Incidence rates of Surgical Site Infection (SSI) following instrumented spine surgery vary from 1-9%. We have previously reported significant variability in SSI prevention practice amongst CSS members. Patient skin and nasal cavity colonization with MSSA remains a major risk factor. The purpose of this study was to investigate the efficacy and cost effectiveness of chlorhexidine skin decolonization (CSD) and nasal photo-disinfection therapy (nPDT) on surgical site infection.

### Method

Since 2009, as a local QI initiative at a quaternary referral center, all patients undergoing high risk surgery (including instrumented spine surgery, vascular, cardiothoracic and ortho trauma) received CSD and nPDT preoperatively. SSI rates, microbiological data, treatment data and costs were prospectively recorded. Amongst the spine surgery cases, age, BMI, comorbidities, spine surgery invasiveness index (SSII), blood loss and adverse events (AE) were recorded using the SAVES2 system.

### Results

From 2009 to 2017 the SSI rate for spine cases decreased from 7.2% to 1.6%, the greatest magnitude of reduction of all surgery types ( $p < 0.01$ ). The Absolute Risk Reduction for spine was 5.6%, and the number needed to treat (NNT) to prevent one infection, 18 patients. This resulted in an average of 53 fewer cases of SSI per year. CSD / nPDT costs CAD\$45-55 per person. The estimated annual cost saving was CAD\$4.24 Million. CSD / nPDT was most effective in diabetics (relative risk, RR 2.1), BMI > 35 (RR 2.25), midline lumbar surgery versus cervical or thoracic (RR 2.2), cervical versus thoracic (RR 1.9), revision surgery (RR 2.9) and in those undergoing more complex instrumentation [SSII > 21] (RR 3.35). The use of CSD / nPDT was not associated with any additional AE's.

### Conclusions

CSD / nPDT is both efficacious and cost-effective in preventing surgical site infection, particularly in complex instrumented cases in the highest risk patients. Given the minimal resource cost, we recommend the routine use of this technology for SSI prevention.