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## An integrative literature review to identify if the use of negative pressure wound therapy on closed/incision surgical wounds decreases the risk of surgical site infection in high-risk patients

**Zhavandre van der Merwe**

Cardiff university, United Kingdom

Surgical site infection has been documented as a significant problem worldwide, due to the rise of surgical procedures and interventions. Limited resources in low and middle-class income countries, such as South Africa, restrict the ability to report and investigate the prevalence and costs of surgical site infections in the surgical patient population. This evidence-based review aimed to identify evidence supporting the use of closed/incision negative pressure wound therapy in high-risk surgical patients to prevent the occurrence of surgical site infections, focusing on length of hospital stay, cost-effectiveness and occurrence of surgical site infections. A secondary objective was to assess the utilisation of risk assessment tools to identify high-risk patients for closed/incision negative pressure wound therapy. The Evidence-Based Review included an extensive literature search of relevant databases including the Cochrane Library, MEDLINE, CINAHL and Scopus, to identify up to date evidence applicable to the topic. Document types included; randomised controlled trials, cohort studies, economic evaluations, and systematic reviews. Each included study was assessed for level of evidence using the Grading of recommendations, assessment, development and evaluation recommendations to ensure the strength of the evidence. The evidence-based review indicated moderate-certainty evidence in favour of the use of prophylactic closed/incision negative pressure wound therapy in the prevention of surgical site infections. Cost analysis studies indicated that prophylactic closed/incision negative pressure wound therapy showed to be cost-effective in the prevention of surgical site infections in obese women who underwent caesarean sections and orthopaedic surgeries. Furthermore, Low-certainty evidence suggested the use of a risk assessment tool to identify high-risk patients aided in the prevention of surgical site infections by recommending the use of closed/incision Negative Pressure Wound Therapy. The Evidence-Based Review concluded that the use of Negative Pressure Wound Therapy on closed/incision surgical wounds would decrease the risk of surgical

site infections in high-risk patients who underwent caesarean sections. Furthermore, the findings suggested that negative pressure wound therapy on closed/incision surgical wounds of high-risk patients decreased the occurrence of wound complications and showed to be cost-effective in patients who underwent orthopaedic procedures. However, further research is required involving high powered studies to successfully determine the cost-effectiveness of prophylactic closed/incision negative pressure wound therapy.

### References

1. Camm, A.J., et al., The changing circumstance of atrial fibrillation - progress towards precision medicine. *Journal of Internal Medicine*, 2016. 279(5): p. 412-427
2. Cha, M.J., et al., Prevalence of and risk factors for silent ischemic stroke in patients with atrial fibrillation as determined by brain magnetic resonance imaging. *American Journal of Cardiology*, 2014. 113(4): p. 655-661.
3. Nutescu, E.A., et al., Warfarin and its interactions with foods, herbs and other dietary supplements. *Expert Opin Drug Saf*, 2006. 5(3): p. 433-51.

### Biography

Zhavandre van der merwe is a master's degree graduate in wound healing and tissue repair from the University of Cardiff UK Wales School of Medicine. During her 13 years in nursing and wound care, she has worked in a clinical practice to maintain her abilities whilst continuously investing in her academic growth. She is passionate about education and providing clinical education courses for wound management. Zhavandre is the owner and director of 4Wounds wound care practice that is focused on providing personalized and holistic wound management to each patient. Promoting healing, preventive wound care and improved quality of life. Zhavandre has published one article and co-authored on one article, both published in peer reviewed journals. She is the regional chairperson for the Wound Healing Association of South Africa and serves as chair of the educational committee.

E: [zhavandre@4wounds.co.za](mailto:zhavandre@4wounds.co.za)