

Surgical site infection (SSI) reduction through patient assisted peri-operative *S.aureus* decolonisation in elective hip and knee arthroplasties- WDHB leading the way

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Background: Surgical site infections (SSI's) involving joint implants are a significant cause of morbidity, disability and cost. Based on the National SSI surveillance data since Oct 2013, overall SSI rate at WDHB was comparable to the national rate of 1-1.2% but *S.aureus* contributed to 43% of SSI's (vs 30% nationally) in 5,600 knee and hip arthroplasties despite optimal compliance with standard quality and safety markers.

Aim: A 20% reduction in overall SSI rate by July 2019 through implementation of sustainable *S.aureus* universal decolonisation bundle in non-acute arthroplasties.

Methods: All patients undergoing hip or knee arthroplasties at NSH and ESC from Nov 2017 received both chlorhexidine (CHQ) sponges daily and mupirocin 2% intranasal ointment (Mup) for 3 days prior to surgery which was prescribed at the time of pre-operative clinic visit. Primary outcome was SSI within 90 days of primary or revision arthroplasty. SSI caused by *S.aureus*, compliance with intervention, intolerance to CHQ, resistance to Mup and cost effectiveness were other outcomes.

Results: During the 12-month post-implementation period, 7 SSI's occurred in 948 arthroplasties (SSI rate 0.73% vs 1% in preceding years). No SSI's caused by *S.aureus* have been identified to date. Compliance with *S.aureus* decolonisation bundle in 157 patients interviewed in 1st 5 months was 95%, and remains very high. No adverse reactions to CHQ have been reported. Mupirocin resistance has not increased 4.8% (29/601 MSSA) and 3.3% (25/751) in the 6 months pre- and post -intervention. An additional charge of 11 NZD per patient for CHQ and Mup prescriptions (approx.13,000 NZD/year) is significantly less than the average cost of treating a single deep SSI at WDHB.

Conclusion: A successful and sustainable *S.aureus* decolonisation programme has already contributed to a 27% relative reduction in overall SSI rate in arthroplasties with no recorded *S.aureus* SSI in its first year of implementation.