

# Postoperative microscopy and culture screening following hip and knee arthroplasty - an unnecessary cost with no effect on clinical management?

Mark Kemp FRCS

Ka Martina RN, BN

Claire Collins RN, BN

Lucy Salmon PhD

Ben Gooden PhD, FRACS (Orth)

Michael O'Sullivan MBBS FRACS

Justin Roe MBS FRACS

Leo Pinczewski MBBS FRACS

Matthew Lyons MBBS FRACS

Presented at:

- Australian Orthopaedic Association Annual Meeting, October 2016 Cairns
- American Academy of Orthopaedic Surgeons Annual Meeting March 14 – 18, San Diego, California

Published:

The Journal of Arthroplasty, 2017  
Volume 32, Issue 4, 1128 - 113



NORTH SYDNEY ORTHOPAEDIC  
& SPORTS MEDICINE CENTRE



MATER HOSPITAL  
SYDNEY  
A FACILITY OF ST VINCENT'S HEALTH AUSTRALIA

## Background

The use of microscopy and culture screening to detect pathogenic micro-organisms followed by a decolonization protocol is a widely performed practice prior to elective hip and knee arthroplasty. In our centre, the routine care of hip and knee arthroplasty also involves postoperative screening including direct culture of the surgical site. The aim of this study was to assess the frequency of pathogen detection following these tests and to determine whether routine postoperative screening, with particular reference to postoperative surgical site culture, led to any change in clinical management of these patients.

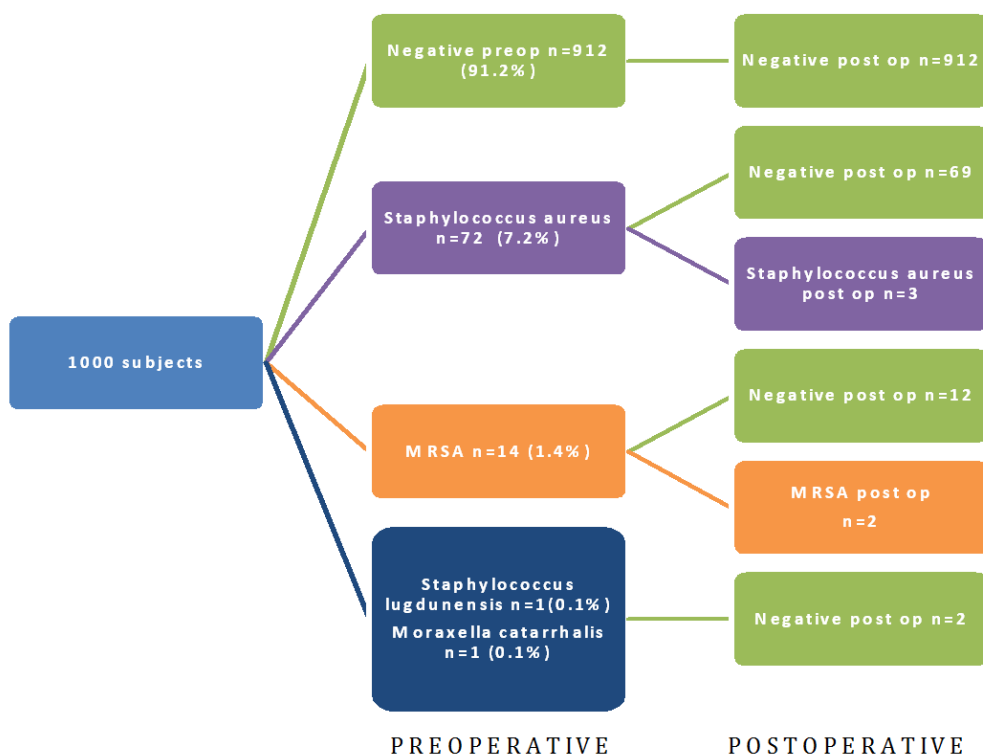
## Methods

A series of 1000 patients undergoing hip or knee arthroplasty at The Mater Hospital between January 2014 and December 2015 were identified from our arthroplasty database. Results of pre and postoperative microscopy and culture screening were reviewed by two independent researchers.

of the 5 positive postoperative microscopy and culture screen results were in patients who had positive cultures preoperatively. There were no positive postoperative microscopy and culture screen results in patients who had had negative preoperative results. Postoperative screening was performed at a cost of AUS\$213 per patient.

## Conclusion

The results of our study do not support the routine use of postoperative surgical site culture, nor the practice of routine postoperative screening for subjects who return a negative result from preoperative screen. In the presence of a negative preoperative microscopy and culture screen is extremely unlikely to obtain a positive result postoperatively. The practice is therefore performed at an additional and unnecessary cost without any benefit to patient care. As well as this, performance of routine surgical site cultures potentially increase the risk of developing a postoperative infection given that the surgical site wound must be exposed to perform the test. We therefore continue to



## Results

Of the 1000 subjects, positive microscopy and culture results were identified in 88 patients (8.8%) preoperatively and 5 patients (0.5%) postoperatively. None of the 1000 postoperative surgical site swabs had a positive microscopy and culture screen. All

support the use of preoperative routine microscopy and culture screening to reduce the risk of postoperative surgical site infection but would recommend against the practice of routine postoperative surgical site culture in all patients as well as routine postoperative screening in those patients with negative preoperative tests.