

P0303 Optimising the microbiological diagnosis of prosthetic joint infection: a 4-year evaluationLaura Cottom*¹, Pauline Wright²¹ Glasgow Royal Infirmary, Glasgow, ² Queen Elizabeth University Hospital**Background:**

Arthroplasty remains an effective surgical intervention that improves quality of life. In Scotland over the last decade there has been a 41% increase in the number of cases of both knee and hip arthroplasty, with 15,068 cases being performed in 2017. Periprosthetic joint infection is a rare but important complication, associated with significant morbidity and mortality. Prosthetic joint infection (PJI) continues to pose a significant diagnostic and therapeutic challenge, with intra-operative sampling and the microbiological processing of orthopaedic specimens playing essential roles.

The microbiological diagnosis of PJI in a routine laboratory is complex and labour intensive. An assessment of compliance with UK standards in 2015 prompted the development of a coordinated program of training/education; a restructuring of workflow and implementation of a standardised laboratory algorithm involving direct culture, enrichment culture and automated BACTEC blood culture bottles.

Our aim was to evaluate the impact of the above interventions over the last 4 years, and assess if through effective diagnostic stewardship in our routine laboratory an improvement in the microbiological diagnosis of PJI could be achieved and sustained.

Materials/methods:

A retrospective analysis was performed over a 4-year period (4-month time periods, May to August 2015 to 2018). Patients based at two large University teaching Hospitals were identified using our electronic based records systems. Only cases where a PJI diagnosis had been confirmed according to either the clinical practice guidelines by the Infectious Diseases Society of America or clinical judgement were included for analysis.

The number of intra-operative specimens sent per

case, the culture positivity rate and the time to positive culture were assessed.

Results:

Following interventions an increase in the mean number of intra-operative specimens sent per case was found, with compliance with guidance being achieved. A statistical significant increase in the positive culture rate (significant pathogen isolated) was also demonstrated (Chi-square test; P value < 0.0001), Figure 1.

Conclusions:

Through effective diagnostic stewardship; development of a standardised laboratory algorithm and a program of continuous evaluation, a significant and sustained improvement in the microbiological diagnosis of PJI was achieved.

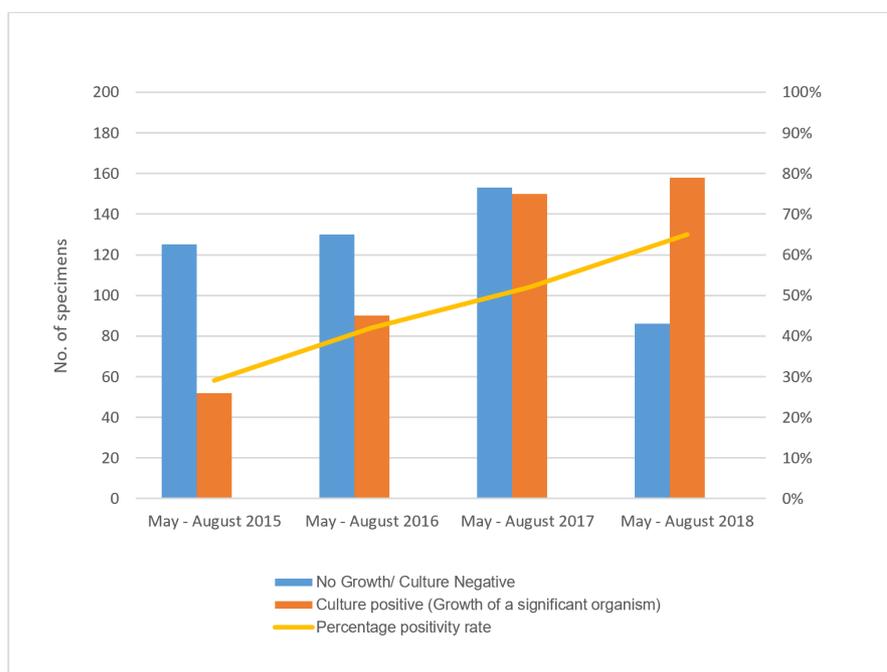


Figure 1 Percentage of culture positive specimens

