Are prophylactic antibiotics indicated during interventional cardiac catheterisation where devices are not being implanted?

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Introduction
For 50 years practice has been to use prophylactic antibiotics in children with congenital cardiac disease prior to surgical intervention. With the advent of interventional cardiac catheterisation this practice has continued. The authors were unable to find evidence to support prophylaxis in routine non-device related interventional procedures. Our hypothesis was that in elective interventions under aseptic conditions, there would be no benefit gained from the routine administration of prophylactic antimicrobial agents.

Methods
There is no unifying protocol at our institution for prophylactic antibiotics in interventional procedures. Two of our operators give antibiotics, whilst three do not unless specific circumstances indicate they may be required. A review of the hospital database, patient notes and catheter laboratory records was performed looking for the administration of antibiotics, indication and type of catheter procedure performed and for evidence of subsequent local wound infections or incidences of bacterial endocarditis.

Results
Over a 2 year period there were 436 interventional procedures; with 212 excluded principally due to device placement during the procedure. 142 of the remaining procedures were interventions such as atrial septostomy and balloon dilations. There were also an additional 82 electrophysiological (EP) studies with ablation procedures. 81 (36.3%) of these interventions received routine prophylactic antibiotics with Flucloxacillin (unless penicillin allergic) whilst 143 did not; including all 82 of the EP studies. In our entire cohort of 224 interventions there were no incidences of post-operative infection. There were 4 deaths within 30 days of the procedure, none of which were attributed to the index catheter procedure.

Discussion
There is no evidence to support the use of routine prophylactic antibiotics to date. The results of our study show that there are no adverse outcomes in children undergoing non-device related cardiac interventions. There are many reasons not to administer an antibiotic without good evidence supporting its benefit, principally, potential for allergic reaction, propagation of antibiotic resistant organisms, additional financial costs, and the safety and efficiency benefits associated with streamlining procedures by minimising unnecessary steps.

Conclusion
There is no evidence to support the administration of prophylactic antibiotics in routine non-device related interventional catheterisation.