

Project Title: Paediatric T&O Theatre Optimization Through Epic Data Analytics: Trauma Impact Modelling and Scheduling Optimization for RBHSC with Regional Application

Funded: CAST Studentship

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Project Description

Northern Ireland has some of the longest paediatric waiting times in the UK, with children waiting over a year for essential trauma and orthopaedic (T&O) procedures. Recent evidence from the ORTHOPOD study confirms that trauma delays are longest in Northern Ireland (median 2.5 days vs 1 day in England/Scotland), with significant variation in theatre capacity and 12.3% of patients experiencing cancellations. This PhD tackles these documented problems through data-driven theatre statistical and operational research modelling and optimization, focusing primarily on Royal Belfast Hospital for Sick Children (RBHSC) where approximately 70% of these procedures occur.

This research directly addresses gaps identified in the landmark ORTHOPOD study by focusing specifically on paediatric T&O optimization using the new Epic/Encompass capabilities at Belfast Health & Social Care Trust (BHSCT). It will be the first to comprehensively model trauma-elective interference in paediatric surgery, developing robust analytics methodologies applicable regionally and internationally.