

AB124. 77. The current state of plastic waste in the orthopaedic operating theatre

Finian Doyle, Jill Mulrain, Fiachra Rowan

Department of Trauma and Orthopaedics, University Hospital Waterford, Waterford, Ireland

Background: In total, 8.3 billion tonnes of plastic has been produced since its use began in the 1950's with approximately 50% of the plastic produced for single use only and only 9% being recycled. The healthcare industry is the second highest producer of waste. Operating theatres contribute up to 70% of a hospitals waste. Waste is classified as either general or regulated waste with 15% considered hazardous that requires regulated disposal.

Methods: A PubMed search was performed with the search terms: recycling, waste, plastics, single-use plastic, medical waste, environment, greening, disposal, orthopaedic, operating theatre, surgery, hospitals. Bibliographies of selected papers were read for articles that were not returned by the original search. The titles and relevant abstracts

were reviewed, and 8 Orthopaedic articles were read by two reviewers. Five pertained to hip and knee, 2 to hand and 1 to spine surgery.

Results: Plastic accounted for 26% by weight and 23% by volume of total waste. Fifteen and 13.6 kg of waste was produced in total hip and total knee arthroplasty with 3 kg of recyclable plastic produced. Better segregation process reduced the volume of waste for regulated disposal. Environmental and economic benefit from introduction of reusable sterilisation cases, reusable surgical gowns and reprocessing of equipment. Education campaigns and change of bin layout led to improved recycling.

Conclusions: There is a significant environmental impact from orthopaedic surgery. We need to improve our adherence to the waste management principles of reduce, reuse and recycle. By implementing 'Green Theatre' initiatives orthopaedic surgeons can take a leadership role in this area.

Keywords: Orthopaedic surgery; plastic waste; reduce; reuse; recycle

doi: 10.21037/map.2019.AB124

Cite this abstract as: Doyle F, Mulrain J, Rowan F. The current state of plastic waste in the orthopaedic operating theatre. Mesentery Peritoneum 2019;3:AB124.