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The purpose of the study was to explore the proposition that lean is an effective methodology for service improvement within a healthcare setting by evaluating the changes brought about by the application of lean tools to an orthopaedic radiology pathway in a large DGH. Delivery of this service was poor with long waiting times and poor levels of satisfaction amongst patients and staff. This service was evaluated using lean tools in order to identify areas for improvement, and changes were made in the form of a self contained Radiology suite within the Orthopaedic Out Patient department. Changes were also made to the booking templates and the pathway through the department. Staffing levels remained the same, with rosters being changed to include cover for the new department. A mixed model approach was used, with qualitative and quantitative data being collected from staff and patients both before and after the changes took place. The qualitative data consisted of questionnaires completed by staff and patients. The quantitative data was predominantly related to waiting times and was gathered from the Radiology Information System, with some quantitative data being taken from the questionnaires. A comparative analysis of the two services was conducted in order to determine if the changes were consistent with the lean philosophies of 'elimination of waste' and 'respect for people'.

The results revealed that the time spent by the patient in clinic and radiology had reduced by up to 69.59% and 66.27% respectively, with a reduction in patients having to wait longer than 30 minutes for their x-ray of 94.93%. The location of the department influenced this reduction as the distance travelled by the patient reduced by up to 60.53%. A further factor was the separation of Orthopaedic patients from Emergency Department patients, leaving the radiographers with only one patient pathway to focus on and a reduction of 60% of radiographers feeling that they had conflicting demands on their time. This increased the levels of patient and staff satisfaction. Furthermore, there was a reduction of 54% in the median waiting time for Emergency Department patients attending radiology.

The author proposes that these findings support the proposition that lean is an effective methodology for service improvement within a healthcare setting.