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Implementing evidence-based guidelines to reduce inappropriate diagnostic practice

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Background: Inappropriate diagnostic practice is a significant problem in the health sector and is a threat to the efficient and effective allocation of scarce resources. An application called Diagnostic Imaging Pathways (DIP) is an on-line evidence-based education and decision support tool designed to assist clinicians to choose the most appropriate diagnostic examinations in the correct sequence (www.imagingpathways.health.wa.gov.au).

Purpose: To quantify whether recommendations in DIP are implemented in an environment in which DIP is readily available and compliance is regularly encouraged, and to evaluate the impact of initiatives aimed at improving implementation.

Methods: Retrospective audits of medical records were carried out in relation to referrals for medical imaging from the Emergency Department (ED) of a large teaching hospital targeting four clinical conditions and diagnostic pathways, before and after interventions: Suspected Pulmonary Embolism; Ankle Injury; Suspected Renal Colic; Non Traumatic Acute Abdominal Pain. Any deviation between diagnostic practice and DIP recommendations was documented as non-compliance. Interventions which aimed at reducing the incidence of non-compliance involved requesters and providers of diagnostic imaging services, and were based on well developed and directed programmes of education and the introduction of modified request forms requiring 'proof' of adherence to pathways.

Results: Overall, incidences of inappropriate diagnostic practice occurred in 56% of patients prior to interventions and 40% of patients following interventions.

Discussion: Whilst the reduction was statistically significant, the interventions fell well short of eliminating inappropriate diagnostic practice. We need to better understand the factors (technological, systemic and political) that inhibit the implementation of guidelines and the techniques that are required to change clinicians' behaviour. Decision support must be better embedded into clinical work flow. Paper-based processes of requesting should be replaced by an electronic requesting system, and the steps in completing an electronic request should be linked to decision support afforded by DIP.