



Can interventions reduce image ordering for low back pain in the ED?



Low back pain (LBP) is a common complaint of people visiting the emergency department. As imaging of LBP has been identified as a key area of imaging overuse (e.g., Choosing Wisely recommendation), interventions to reduce image ordering among patients with LBP in both primary and acute care settings have been recommended. A new systematic review has found some evidence showing that interventions can reduce the use of simple imaging in LBP in the ED; however, a shift in imaging modality has also been demonstrated.

Although some evidence suggests that patients with LBP in the ED are appropriately imaged based on the American College of Radiology appropriateness criteria, other studies have reported that 30 percent of patients in which imaging for LBP was not indicated received imaging, suggesting substantial practice variation across EDs.

Researchers from the University of Alberta performed this systematic review to identify, describe, and examine interventions to reduce the proportion of patients presenting with LBP who received simple and advanced imaging in the ED. Six bibliographic databases (including MEDLINE, EMBASE, EBM Reviews, SCOPUS, CINAHL, and Dissertation Abstracts) and the grey literature were searched. A total of 603 unique studies were identified through the electronic and grey literature searches.

Using a registered and structured protocol with efforts to avoid publication and selection bias, as well as communications with LBP experts, the researchers said only five studies could be identified that examined interventions to reduce image ordering in the ED for LBP patients. The interventions examined in these studies included clinical decision support (CDS) tools, clinical practice guidelines, a knowledge translation initiative, and multidisciplinary protocols.

Overall, four studies reported a decrease in the relative percentage change in imaging in a specific image modality (22.7%–47.4%) following implementation of the interventions; however, one study reported a 35% increase in patient referrals to radiography, while another study reported a subsequent 15.4% increase in referrals to computed tomography (CT) and myelography after implementing an intervention which reduced referrals for simple radiography.

"These results highlight potential unintended consequences of interventions targeting a reduction in one specific image modality such as simple radiography, in which physicians who still wish for a patient to undergo imaging may utilise a different imaging modality. This needs to be examined in future research," the review authors write.

With the recent increase in guidelines for imaging referrals and Choosing Wisely recommendations,

the authors note, it is possible that some physicians may experience change fatigue, which could impact the ability of interventions to induce behaviour change.

Also, the authors point to the low-quality methods (i.e., before-after designs) and the heterogeneity of image modality assessed, and interventions examined across the included studies, which limited the ability of the review to pool data and to make a clear recommendation regarding the effectiveness of a specific intervention to reduce imaging in the ED for patients with LBP.

"Additional studies employing higher-quality methods and measuring intervention fidelity are strongly recommended to further explore the potential of ED-based interventions to reduce image ordering for this patient population," the authors conclude.

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