

Main Line Emergency Medicine Associates, home to 45 physicians, collaborated with Radiology Associates of the Main Line, a practice of physicians, to reduce avoidable imaging in the emergency department (ED). The practices are affiliated with Main Line Health and the physicians leading the collaboration chose to carry out the project at Riddle Hospital, a medium-sized Main Line Health hospital in suburban Philadelphia. The physicians leading the effort focused on the ordering of CT angiography (CTA) imaging exams for patients who arrive in the ED with chest pain or shortness of breath that could be indicative of a pulmonary embolism (PE).

The Challenge: CTA for suspected PE is an exam that is sometimes ordered unnecessarily. The project goal was to evaluate the emergency physicians' ordering patterns of CTA for suspected PE exams at Riddle Hospital and to improve ordering, if indicated. Reducing avoidable imaging saves: the risk of unnecessary radiation; kidney injury; further testing of indolent, incidental findings; and the high cost of imaging and further testing of inconsequential incidental findings.

The Baseline Project Results: The physician project leads identified 84 cases for which emergency physicians ordered a CTA exam for suspected PE over a three-

Involving Patients: Part of the program involved sharing information with patients about why imaging was, or was not, recommended based upon their medical history. Specifically, patients were provided a handout that explained if their historical factors, physical examination findings, and a D-dimer blood test (if ordered) were negative for PE, evidence shows no advantage in obtaining information from a CT angiography.

Post-Education Results: Following the educational intervention, 90 cases of CTA exams for suspected PE were accessed over a four-month period. The post-educational intervention project results showed that 29 (32%) of the CTA exams ordered may not have been optimal or may have been unnecessary—a 31% improvement over baseline results.

Additionally, 25 patients were called after they were discharged from Riddle Hospital to collect feedback about the educational handout. A