CT Exams for Traumatic Injuries (CETI)

Trauma patents, transferred from outside hospitals (OSH), to larger, level 1 regional trauma centers (RTC) frequently get repeat computerized tomography (CT) exams. Repeat CT exams result in additional, unnecessary, radiation exposure, tie-up resources, and add additional costs to the patient's healthcare. The objective of this study was to review and evaluate the causes, impact on patient management, and associated radiation and costs for repeated CT imaging of trauma patients transferred to the Fletcher Allen Health Care (FAHC) emergency department from OSH. A total of 200 subjects were recruited by research associates in the FAHC emergency department over one year. The frequency of duplicate CT scans was determined by reviewing OSH records, and provider interviews were used to determine the reasons for repeat scans. The primary outcome was the frequency of duplicate CT scan, defined as repeat imaging of the same body part within 24 hr. Secondary outcomes included the provider's reasons for imaging, impact on patient management, radiation exposure and cost of duplicate scans. 137 subjects were analyzed in the study. 108 patients received a CT exam at the OSH. 54 (50%) of those patients received a duplicate CT exam at FAHC. The major factor contributing to duplicate CT exams was technical problems. We found that the primary potentially avoidable cause for these scans were due to the inadequate transfer of CT imaging data, accounting for (30%) of duplicate scans. An ongoing, state funded education program is working with referral hospitals in Vermont and New York to improve the digital transfer of imaging data. All Vermont hospitals transferring to FAHC have been connected via a PACS network for direct transfer. Future research will determine the impact of the technological improvements and education efforts on reducing duplicate CT exams in trauma patients who are transferred to our center.