Reducing turnaround time for inpatient plain film imaging

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Aims

To improve hospital flow by reducing the turnaround time (time from request to exam) for medical inpatients.

Methods

This project took place at an urban teaching hospital between January and July 2015. The plain film imaging pathway was broken down and examined with key stakeholders, including doctors, superintendent radiographers and representatives from portering and information technology. Bottlenecks were identified in each stage of the process, and appropriate interventions designed. These included identifying potential improvements to the hospital's electronic health records system (EHRS) used for requesting imaging, funding a dedicated pool of porters and redesigning the workflow management system used within the X-ray department.

Results

This project encountered a number of challenges as well as successes. The most successfully implemented intervention was the change to the X-ray department workflow management system. Previously, each X-ray room copied information from the orders in the EHRS onto separate paper lists, which were rewritten on a daily basis. We attempted to negotiate a solution embedded into the EHRS, but it was not flexible enough to be changed in an adequate timeframe. A separate electronic system using a Microsoft Access database was adapted from a similar system used in the CT department and was implemented by the superintendent radiographers. The dedicated portering pool was operated for a 2-month period between January and March using NHS winter pressure funding, although this ceased after the funding stopped. Suggested changes to the EHRS requesting system were not implemented due to the complex nature of making these alterations and a lack of guaranteed change funding for the supplier by the hospital. Turnaround time was monitored on a weekly basis between August 2014 and July 2015. Before introducing the Access database, a mean of 41.9 chest X-rays were performed per week, with a mean turnaround time of 11.8 hours. After intervention, a mean of 38.7 chest X-rays were performed per week (7.7% less), while mean turnaround time fell to 9.9 hours (16.3% less).

Conclusions

Successful implementation of a new workflow management system was achieved, which led to an initial improvement in turnaround time. Ongoing performance is being monitored, and future interventions designed to build on initial improvements. The portering intervention was short-lived, showing that it is difficult to create sustainable service improvements with temporary funding. EHRS modifications were too complex to be achievable within a reasonable timeframe. Local cost-neutral solutions, designed in conjunction with key stakeholders, are effective means for delivering quality improvement. ∎

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