

Electronic referral system for critical care - A patient safety and quality improvement project

Prashant

Northwick Park Hospital, UK

Electronic referral (eReferral) systems have been designed with the dual purpose of decreasing wait times and improving workflow efficiency. Evidence about the clinical and economic value enabled through the use of eReferral systems is limited. Our objective was to review the evidence base for the effectiveness and cost-effectiveness of eReferral systems. A systematic search was conducted to capture the available literature on the effectiveness and cost-effectiveness of eReferral system interventions. Evaluation of eReferral system for cost or outcome(s) were included. Strictly e-consultation systems were excluded.

Being a major hospital, we come across many patients requiring direct referral to critical care at the earliest. Sometimes, these referrals are in large numbers that prioritizing and managing become challenging. During COVID-19 outbreak, to meet rising demands we implemented an Electronic-Referral system (e-referral) which was designed to facilitate clear information, better tracking and earliest delivery of critical care services. We reviewed the utility of this system as per the Guidelines for provision of intensive care services 2019(3.1) / National Institute for Health and Care Excellence CG50 and modify it for all critical care referrals. Questionnaire-based survey was performed among critical care staff to assess the effectiveness of bleep/telephonic and e-referral. We obtained a total of 40 responses from consultants, trainees and critical care outreach nurses (66% response-rate). Only one-third of the them were satisfied with bleep/telephonic referral. Nearly 70% believe that there is loss of patient information due to multiple calls leading to delay in prioritising patients. Almost 95% found the e-referral useful and efficient for reviewing the patients. More than 80% agree that this system is helpful in maintaining records, clear handover, follow up of intensive care step-downs and facilitate in audits. Overall, e-referral for critical care was great success in reviewing and following up of COVID-19 patients. Based on this experience, we have proposed template to facilitate the need for all referrals. This system is not a replacement of bleep/telephonic

consultations but it will strengthen the structure of patient referral to critical care as per the standards. Electronic referral (eReferral) systems have been designed with the dual purpose of decreasing wait times and improving workflow efficiency. Evidence about the clinical and economic value enabled through the use of eReferral systems is limited. Our objective was to review the evidence base for the effectiveness and cost-effectiveness of eReferral systems.

This review is part of a bigger project to inform the economic benefits of a regional eReferral implementation program. Material and methods: A systematic search was conducted to capture the available literature on the effectiveness and cost-effectiveness of eReferral system interventions. Evaluation of eReferral system for cost or outcome(s) were included. Strictly e-consultation systems were excluded. We only included publications in English. Results: We found 274 citations. After removing duplicates and conducting levels one and two screenings, nine publications qualified. Results were divided into four categories: cost or cost-effectiveness analysis, changes in workflow efficiency, the quantity of referrals, and the quality of referrals. A full economic evaluation, conducted in Denmark, found that an eReferral system was cost-effective compared with a paper-based referral system. Of the other eight studies, three demonstrated positive changes in referral processing; two evaluated changes in the quality of the referrals, and three evaluated if the eReferral system increased the quantity of referrals. Discussion: The evidence base on the effectiveness of eReferral systems to improve communication between primary care and specialists and to decrease wait times is positive but limited. Economic evaluations are needed to examine the clinical and economic value of eReferral systems in health care.

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