Establishing a general practitioner led minor injury service: mixed methods evaluation at 10 months with an emphasis on use of radiology by GPs in the out-of-hours setting

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Abstract

Aims and methods A mixed methods study was conducted to evaluate a recently established general practitioner (GP) led minor injury (MI) service; it included a patient feedback study, a qualitative enquiry into the experience of the MI GPs, and analysis of use of radiology. **Results** Forty-nine (81.6 %) patients surveyed were seen in 30 min or less. Forty-five (75 %) felt that the quality of the service was excellent/very good. Twenty-seven (45 %) responders felt that the X-ray service was expensive; 49 (81.6 %) patients said that they would be happy to use the service again. 271 X-rays were taken (137, 50.55 % upper limb, 95, 35.06 % lower limb, 18, 6.64 % CXR). One hundred and ninety-four (73.48 %) patients were self-financing. There was an 86.72 % (235/271) concordance between GP/radiologist findings. Issues elaborated by MI GPs at the focus group included secondary care/hospital interaction, patients' experience, professional fulfilment, competence concerns, finances, and interest in educational resources; they were unanimous in maintaining the service at 10 months.

Conclusions This study demonstrates a positive experience by patients, and conservative evaluation of X-rays by GPs.

Keywords Patient satisfaction · Qualitative research · Minor injuries · General practice

Introduction

The gatekeeper role of the general practitioner (GP) is well established, valued and recognised, in terms of efficient use of resources and good clinical care and particularly so in the out-of-hours (OOH) setting [1]. The desirability of treating the greatest proportion of patients presenting acutely within the community, and avoiding unnecessary referrals for hospital-based care where possible, is also recognised as a desirable objective in the delivery of care. The importance of GP co-operatives in reducing demand on emergency department services is increasingly well understood [2]. In at least one recent UK longitudinal study, reduced input by GPs in the provision of OOH services led to markedly increased hospital attendances [3]. This paper examines the aspects of a service development initiative which was undertaken with the primary objective of enabling GPs within a defined catchment area (Kildare and West Wicklow) to increase the proportion of their patients presenting acutely in the OOH setting, who could be definitively cared for, and without need for onward referral to hospital. Important secondary objectives included assisting in reducing demand within local emergency departments through reducing presentations for minor illnesses, and also the re-skilling of GPs participating in the service, with a focus on suturing, and the greater involvement of GPs in the initial management of common

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orthopaedic presentations, and definitive treatment of minor trauma.

K Doc (Kildare and West Wicklow Doctors on Call), a 110 GP co-operative, established a GP led minor injury service (MIS) in 2010. Following invitation to participate, 24 out of a total of 110 GPs expressed an interest. The approach taken included 6 × 1 h modules of training in relevant areas (case-handling procedure, suturing workshops, interpretation of trauma X-rays, plastering techniques, medicolegal aspects, and ophthalmology), resourced using expertise within the Co Op, and from local Specialists, with approval for CPD through the ICGP, and co-ordinated through the Kildare Faculty ICGP CME Tutor. The set-up also included augmentation of medical inventory at the principal Co-Op treatment centre, issuing case-handling guidelines, provision of relevant texts to participating GPs, and also the provision of direct access to OOH radiology within the same campus by a third party radiology department. This was provided at a cost of €85 for fee paying patients (including radiography and hot reporting), and €50 to patients demonstrating eligibility under the GMS (medical card). Radiology fees were paid to the radiology department, as a distinct entity from the GP co-operative. There was thus no direct correlation between income to the treating GPs/co-operative and the number of X-rays ordered. Of note, access to the local hospital emergency department is free to GMS patients and those with a GP referral letter; otherwise, a €100 fee is charged. The initiative was communicated to and co-ordinated with the local hospital and service commenced from 1.1.10. The MIS currently runs from 2 pm to 11 pm at weekdays, and 11 am to 11 pm at weekends and public holidays.

The aim of this study was to evaluate aspects of the service, with an emphasis on the use of radiology by GPs in the OOH setting, and it includes a patient feedback study, formal feedback on the experience from the MI GPs, and analysis of use of radiology by GPs at 10 months.

Methods

This is a mixed methods study. Ethical approval was obtained through the Ethics Committee at the TCD HSE GP Training Scheme. All patients ($n = 264$) serially presenting during the study period, who had been X-rayed through the service were included [Fig. 1 (total numbers of X-rays per month); Fig. 2 (body parts X-rayed)]. 93 patients were invited to participate in a post-consultation postal survey over a 3-month period. Additional data collected included clinical diagnosis noted at initial presentation by the GP, and subsequent comparison with radiological diagnosis as reported by the radiologist (Fig. 3) (diagnostic concordance). A qualitative enquiry

(focus group, with 13/24 of participating minor injury GPs) was carried out. All GPs involved in service provision were invited to attend the single focus group session, which was facilitated by a trained moderator as well as the principal researcher. CPD/CME certification was awarded for attendance to maximize recruitment and to encourage the broadest representation of GPs possible. At the focus group, informed written consent was obtained, identities anonymised, and a semi-structured discussion of the GPs was recorded and transcribed. Qualitative content analysis was utilised with triangulation by the research team to derive themes. Data saturation was ensured by an adequate sample size, time for participants to air opinions as well independent thematic analysis of data [4].

Results

A sample of 93 patients serially presenting were identified; 12 were un-contactable, and none declined to participate. 81 patients were surveyed. Response to the patient's

Fig. 1 Number of X-rays performed

Fig. 2 Types of X-rays performed

Fig. 3 GP-Radiologist concordance rate of 87 %

satisfaction survey was respectable at 60 (74.1 %) patients. 49 (81.6 %) patients responding indicated they had been seen in 30 min or less. 45 (75 %) patients responding indicated the quality of the service was excellent/very good, with a comparable percentage reporting high satisfaction with the ease of access. 27 (45 %) of responders felt that the X-ray service was expensive; 49 (81.6 %) would be happy to use the service again. 21 (35 %) required further treatment or referral, of which 11 (52.4 %) were unhappy with the process by which this was done.

With respect to the 264 patients X-rayed on the MIS (1.1.10–31.10.10), 153 (57.95 %) were male, younger patients were over represented and 110 (41.67 %) aged 20 or less. While a majority, 194 (73.48 %), of patients were self-financing, a quarter of all X-rays carried out were on medical card patients, who elected to pay a reduced fee of €50 rather than attend the local emergency department. Trauma was evident in 117 (44.32 %) of cases, with twisted ankles/feet (26, 9.85 %) and falls (94, 35.61 %) accounting for many presentations. 271 X-rays were taken during the study period; the main subcategories included 137 (50.55 %) upper limb, 95 (35.06 %) lower limb and 18 (6.64 %) CXR. There was an 86.72 % concordance between GP/radiologist findings. There was a consistent false-positive ratio evident with GP evaluation of X-ray findings (77 GP diagnosed fractures vs. 66 by radiologist). There was a 2.19 % (53 vs. 50) difference between upper limb fractures diagnosed, 4.21 % (16 vs. 12) between lower limb fractures, and a 16.67 % (8 abnormal CXR vs. 5 abnormal CXR) difference on CXR interpretation. There were no false-negative diagnoses made by GPs in this sample.

Among GPs within the focus group, there was a uniform desire to continue the service apparent at 10 months. There was no personal reporting of any significant adverse clinical outcomes by the participating GPs, and this data complement an absence of any significant adverse clinical outcome notified through the co-operative feedback/complaints process, which ran concurrently and independently of this study.

Discussion

Overuse or ‘inappropriate’ use of emergency departments is recognised in many countries as major problem for health services provision [5]. Research suggests that in an Irish setting, most emergency department attendees tend to be younger, suffering from soft tissue injuries and could be managed appropriately by general practitioners [6]. Properly structured primary care physician cooperatives have been shown to reduce the number of patients attending EDs, particularly patients with musculoskeletal disorders [7]. When compared, GP’s tend to refer patients less for investigations and specialist consultations than junior doctors in emergency departments and it has been shown that most patients do elect appropriately whether to attend an MIU or ED for their complaint [8, 9].

This study describes the aspects of the establishment of a MIS in the OOH setting, under the direction of a GP co-operative, and with essential support from the principal hospital within the catchment, and from individual specialists within the area. The process has resulted in an expanded role for GPs staffing the service, and arguably describes both effective re-skilling and better use of the GPs involved as a community-based resource, both of which are highly relevant in the context of maintaining service in a straitened economy. The study has been supported by Vista Radiology, through the provision of radiography, hot reporting of trauma films, and a competitive fee structure. In establishing this service, additional financial resources were not necessary, given the level of commitment of the clinicians involved, primarily the MI GPs, individual Specialists who resourced some of the educational elements, and significant co-operation and interest from The GP Hospital Liaison Committee at Naas General Hospital.

The number of radiological examinations analysed in this study is modest, reflecting that it is carried out on an establishing service, and also perhaps the recognised tendency of experienced GPs to be more conservative in their use of radiology relative to junior hospital doctors who typically field a majority of consultations in emergency departments. Some degree of responder bias in a satisfaction survey such as this must be considered; the methodology did include a look-back postal questionnaire survey which to some extent may have addressed this issue, and the good response rate from this further addresses this concern. A further systematic bias is evident in that a smaller proportion (approximately half) of medical card eligible patients used the radiology service relative to fee paying patients, assumed for reasons relating to cost, which requires to be considered in the interpretation of results presented. The findings of the qualitative research are

limited to that of a single focus group and would benefit from repeated sampling for data saturation.

GPs have a vital role to play in the provision of high quality OOH care; the potential opportunities in terms of health economics, continuity of care and ongoing medical education have received much attention [10]. The development of a specific minor injuries unit is a commitment by the local GPs to further enhance care provided to patients. This study demonstrates a positive experience by patients, participating GPs, and conservative evaluation of X-rays by GPs. Minor injury GPs reported positively on their experience while expressing some continuing concern around competence and a desire for further experience and training. This concern was not reflected in the high satisfaction reported by patients. Lower satisfaction evident among that sub group of patients requiring onward referral has been addressed substantially through improved communication, and also by finessing the process of such referral through the co-operation of the local hospital, in terms of direct access to the fracture clinic run by the local orthopaedic department.

Conflict of interest None.

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