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Emergency Department redirection to Primary Care: A prospective evaluation of practice

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Abstract

Background and Aim: Non-urgent Emergency Department (ED) presentations contribute to overcrowding which can adversely affect patient care. Redirecting patients to a more appropriate service is an option to help address this. We conducted a prospective evaluation of a major Scottish hospital's ED redirection policy to assess its safety.

Methods and Results: Over two months, 620 patients triggered senior assessment for redirection with 444 (72%) redirected to Primary Care. Information on presentation was collected with subsequent management and outcome of redirection provided by the patient's GP. Those who required admission within seven days of redirection triggered review. This was carried out independently by an ED Consultant and a GP Principal to assess the incidence of sub-optimal care or harm as a consequence of redirection. Most patients presented during daytime hours with no significant variation between days. 'Patient factors' accounted for 74% of presentations with 'convenience' (20%) cited the most common reason. Twenty-two patients were subsequently admitted, with one case of sub-optimal care (incidence 0.23%) and no cases of harm.

Conclusions: Our redirection policy provides a safe and effective means of directing patients to more appropriate care that the authors believe to be in the patient's best interest. ED clinicians are not specifically trained to manage Primary Care issues.

Keywords

'REDIRECT'; 'EMERGENCY MEDICAL SERVICE'; 'PRIMARY HEALTH SERVICE'; 'PRIMARY HEALTH CARE' 'REFERRAL AND CONSULTATION'; 'GENERAL PRACTICE'

Introduction

Emergency Departments (EDs) absorb workload which falls outwith their primary function, which is to diagnose and manage acute and urgent aspects of illness and injury affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioural disorders (International Federation for Emergency Medicine, 1991). This contributes to overcrowding which is detrimental to patient care.^{1, 2} Recent studies have shown that a significant number of non-urgent cases present to the ED, and that around 16% of ED attendances could be seen in Primary Care (PC).³⁻⁵

Ninewells Hospital is a major teaching hospital in Dundee, Scotland, with a catchment population of 450,000 and approximately 50,000 ED attendances per annum. A 'Redirection Policy' was introduced in August 1998, whereby patients presenting with a complaint which had been present for three days or longer were identified at triage and reviewed face-to-face by a senior doctor who decided whether they should receive full ED assessment (seen, following wait, within their standard triage allocation), be given advice, or be redirected to PC. Initial evaluation of the policy showed no adverse outcomes.⁶ The policy has since been revised (Appendix 1). By avoiding the application of a rigid protocol

based on a list of clinical conditions, flexibility is retained to accommodate the unpredictable nature of ED presentations and allow a patient-specific approach.

This study is the first major evaluation of the policy since its refinement and since the introduction of the 2004 GP contract.

Objectives

The aim was to evaluate the redirection policy and measure the incidence of any sub-optimal care or harm resulting from its application.

Methods

From 09:00 hours, 23 December 2013 till 08:59 hours, 17 February 2014 patients fulfilling one or more criteria for potential redirection were recruited. These criteria are:

1. Injury or illness present for more than three days
2. Already consulted their GP with the presenting complaint
3. Minor illness or a problem which would normally be seen by a GP (regardless of when this developed)

In accordance with the standard policy (Appendix 1), patients were given verbal and written explanation (Appendix 2) before a brief senior doctor (ST3 or above) review. During the study, senior doctors also asked four specific questions and categorised the patient's presentation (Table1).

Table 1– Specific questions by senior EM doctor and categories for patient presentation

QUESTIONS

1. Why did you choose to attend the Emergency Department today?
2. Did you attempt to contact any other service before coming to the Emergency Department?
3. If not, why did you not contact any other service before coming to the Emergency Department?
4. Were you advised by any person or any other service to come to the Emergency Department?

CATEGORIES

Patient Factors

Not registered with local GP

Not aware of out-of-hours Primary Care arrangements

Did not contact NHS 24

Perceived need for X-ray

Dissatisfied with GP care/opinion

Advised to attend by healthcare professional

Advised to attend by non-healthcare professional

Not tried to get GP appointment ED more convenient

Primary Care Issues

Tried to get GP appointment - none available

Tried to get GP appointment - none suitable

Tried to get GP appointment - advised to attend by receptionist

Not tried to get GP appointment - previous experience

NHS24 Issues

Contacted NHS 24 - unhappy with response

Contacted NHS 24 - awaiting call back

Information was recorded on a data collection sheet kept with the ED card and on the Symphony (EMISHealth, Leeds) patient information system. Those receiving full ED assessment had the final ED diagnosis recorded. All ED assessment cards and data sheets were collected for review.

Redirected patient data were extracted from Symphony and cross-referenced against ED cards to ensure all eligible patients had been recruited. Duration of the complaint, responses to questions and the presentation category were collected from the data sheets and ED card.

Four weeks after ED attendance, GPs of redirected patients were contacted by letter and asked the following questions:

1. Has this patient subsequently presented to Primary Care (in hours General Practice or the Out-of-Hours Service) with this complaint?
2. Did they require further investigation or treatment? If yes, please provide brief details.
3. If possible, can you advise of the eventual outcome?

Patient diagnosis, management, investigations and final outcome data were collated from the replies. Records were checked on TOPAS (Patient Administration System) (CAMBRIC Systems Limited, Dundee) for any hospital admission within seven days of ED presentation.

Acute hospital admission within seven days was used as a trigger to identify patients who may have experienced harm from ED redirection. These cases were reviewed independently using all available patient records (ED assessment card, GP reply letter, hospital case notes) by two reviewers, not part of the research team: A GP Principal who works two sessions a week in Emergency Medicine (EM) and an EM consultant who has undergone vocational GP training. They considered whether the patient had come to harm or experienced sub-optimal care as a result of redirection, using the following definition of harm:

'unintended physical injury resulting from or contributed to by medical care that requires additional monitoring, treatment or hospitalization, or that results in death'^{7, 8}

They also answered the question:

Would you be happy for your relative to be managed in this way?

Chi-squared test was used to assess multi-group data for significant differences. Descriptive analyses were performed on other data. Patients for whom incomplete data were collected, e.g. no GP reply, were excluded from specific analysis.

The study had Caldicott Guardian approval and was supported by Tayside Local Medical Committee.

Results

Demographic data are displayed in Table 2. Of 6643 consecutive unscheduled ED attendances, 620 patients (9%) were recruited. 72% (444 patients, 7% total attendance) were redirected. 16-35-year-olds were the largest group (247 cases, 40%). 3-7 days (264 patients, 43%) was the most common duration of symptoms. 37 patients (6%) did not wait for a review by the senior clinician. 228 (37%) patients had already consulted their GP regarding their presenting complaint.

Table 2 – Patient demographics and presentation data

	Managed in ED	Redirected	Total
Number of patients	176	444	620
Proportion of total study population	28%	72%	100%
Gender			
Male	92 (52%)	217 (35%)	309 (50%)

Female	84 (48%)	227 (37%)	311 (50%)
Age			
<16	23 (13%)	47 (11%)	70 (11%)
16-25	29 (16%)	106 (24%)	135 (22%)
26-35	37 (21%)	75 (17%)	112 (18%)
36-45	18 (10%)	68 (15%)	86 (14%)
46-55	20 (11%)	61 (14%)	81 (13%)
56-65	26 (15%)	43 (10%)	69 (11%)
66-75	18 (10%)	20 (5%)	42 (7%)
>76	5 (3%)	24 (5%)	25 (4%)
Duration of symptoms			
Not recorded	9 (5%)	57 (13%)	66 (11%)
<3days	26 (15%)	71 (16%)	97 (16%)
3-7 days	104 (59%)	160 (36%)	264 (43%)
1-4 weeks	33 (19%)	99 (22%)	132 (21%)
1-12months	4 (2%)	53 (12%)	57 (9%)
>1year	0	4 (0.90%)	4 (0.65%)

There was no significant variation in total daily attendance with similar hourly attendance distributions. There were significant differences in the hour-of-day a patient attended ($p < 0.001$). 241 patients (39%; 95% CI, 35.0%-42.6%) attended during GP working hours (08:00 to 18:00, Monday to Friday excluding Public Holidays) and only 131 patients (21%; 95% CI, 17.9%-24.3%) attended overnight (20:00-07.59). 12:00-15.59 saw the most patients (21-30 patients each day) totalling 185 cases (30%; 95% CI, 26.2%-33.4%).

‘Injury’ was the most common presentation (183 patients, 30%) (Table 3), followed by ‘musculoskeletal disease’ (96 patients, 15%) of whom 82 (85%) were redirected. For patients managed in the ED the second most common presentation category was ‘skin disease’ (15%), with 26 of 27 cases being soft tissue infections, compared with only 6% (28 cases) of the redirected group.

Table 3 – Presenting complaint (categorised using ICD 10 Chapters)⁹

	Seen ED n=176	in Redirected n=444	Total n=620
Presenting Complaint			
Certain infectious and parasitic diseases	9 (5%)	16 (4%)	25 (4%)
Neoplasms	1 (0.57%)	3 (0.68%)	4 (0.65%)
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	1 (0.57%)	2 (0.45%)	3 (0.48%)
Mental and behavioural disorders	2 (1%)	9 (2%)	11 (2%)
Diseases of the nervous system	3 (2%)	5 (1%)	8 (1%)
Diseases of the eye and adnexa	9 (5%)	7 (2%)	16 (3%)
Diseases of the ear and mastoid process	2 (1%)	19 (4%)	21 (3%)

Diseases of the circulatory system	3 (2%)	6 (1%)	9 (1%)
Diseases of the respiratory system	10 (6%)	29 (7%)	39 (6%)
Diseases of the digestive system	10 (6%)	27 (6%)	37 (6%)
Diseases of the skin and subcutaneous tissue	27 (15%)	28 (6%)	55 (9%)
Diseases of the musculoskeletal system and connective tissue	14 (8%)	82 (18%)	96 (15%)
Diseases of the genitourinary system	6 (3%)	21 (5%)	27 (4%)
Certain conditions originating in the perinatal period	1 (0.57%)	0	1 (0.16%)
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	23 (13%)	59 (13%)	82 (13%)
Injury, poisoning and certain other consequences of external causes	55 (31%)	128 (29%)	183 (30%)
External causes of morbidity and mortality	0	1 (0.23%)	1 (0.16%)
Factors influencing health status and contact with health services	0	2 (0.45%)	2 (0.32%)

‘Patient Factors’ (561 responses, 74%) was the most common category for presenting (Figure 1), with ‘convenience’ being the most frequent reason (147 responses, 20%).

[insert Figure 1.]

Figure 1 – Reasons for attending the ED with total number of responses and proportions of total responses received

GP replies were received for 381 cases (86%), of whom 250 (66%) attended their GP. Six replies (2%) stated that the patient was not registered at the practice so were removed from further analysis. Table 4 details the 375 (84%) patient outcomes confirmed through GP replies.

Table 4 – Outcomes for redirected patients and GP interventions according to responses

Patient Outcomes (n=375)	
No GP follow-up	115 (31%)
PC/Community management	166 (44%)
Outpatient referral	75 (20%)
Acute admission	19 (5%)
GP interventions (n=250)	
Consultation only	35 (14%)
Prescription	77 (31%)

Investigation	17 (7%)
Procedure	13 (5%)
Community referral	21 (8%)
Specialty referral	87 (35%)

Six additional patients were found, via TOPAS, to have been admitted, leaving 63 (14%) unknown outcomes. Twenty-five patients (6%) were admitted within one week of being redirected from the ED. Three of these patients had elected not to remain for senior doctor review which left 22 (5%) redirected cases to be reviewed.

After independent review both assessors agreed that there was a single case of sub-optimal care (0.23%) and no cases of harm resulting from redirection. The characteristics of reviewed cases are shown in Table 5.

Table 5– Characteristics of presentations redirected from ED and subsequently admitted

Already seen by GP	Duration of symptoms (days)	ED Impression	Admission for same medical complaint as ED presentation	Admitting specialty	Eventual Diagnosis	Sub-optimal care/harm
Admitted within 24 hours						
No	7	Pain passing water, undistressed and well	No	Paediatrics	Hydrocele	No
No	1	Pyrexial but well	Yes	Paediatrics	Lower respiratory tract infection	No
Yes	8	Balanitis under GP review	Yes	Paediatrics	Phimosis	Sub-optimal care
Yes	60	Chronic recurrent abdominal pain worsening over last 2 months	Yes	Paediatrics	Chronic abdominal pain	No
No	5	Worsening chronic abdominal pain	Yes	Gynaecology	Pelvic inflammatory disease	No
No	Not documented	Atraumatic foot pain	Yes	General Medicine	Complex regional pain syndrome	No
Yes	4	Epididymo-orchitis on appropriate treatment without deterioration	Yes	Urology	Epididymo-orchitis	No
No	1	Sore throat and rash	Yes	General Medicine	Viral illness	No
Yes	365+	Ongoing abdominal pain (attended hospital for OP CT)	No	General Surgery	Metastatic stomach cancer	No
No	7	Worsening headache	Yes	General	Thunderclap	No

				Medicine	headache	
Yes	7	Abscess, under treatment of GP	Yes	General Surgery	Groin abscess	No
No	7	Chronic cyst	Yes	Trauma and Orthopaedics	Abscess	No
Yes	1	Breathing and coughing difficulties (seen GP earlier in day and treatment commenced)	Yes	ENT	Motor Neurone Disease	No
No	3	Previous idiopathic thrombocytopenic purpura had noticed bleeding gums	Yes	Clinical Oncology	Idiopathic thrombocytopenic purpura	No
Admitted from 2-7 day						
No	1	Viral illness	No	Paediatrics	Exacerbation of asthma	No
Yes	5	Viral illness	Yes	Paediatrics	Tonsillitis	No
Yes	6	Undescended testicle under GP review	Yes	Paediatrics	Undescended testicle	No
No	Not documented	Discharging abscess	Yes	General Surgery	Thigh abscess	No
Yes	Not documented	Groin abscess, on treatment	No	General Medicine	Pulmonary Embolus	No
No	21	Drug seeking	No	Mental Health	Delirium	No
Yes	1	Abdominal pain	Yes	General Surgery	No definite diagnosis	No
Yes	2	Gout	Yes	General Medicine	Osteoarthritis	No

Discussion

Redirection has been practiced in Tayside for nearly 20 years. Recent local surveys have demonstrated that the community is aware of the policy. (Bromley J et al. 2012, Report for Scottish Government) The criteria for identifying patients who have the potential to be seen by a more appropriate service were devised by the EM consultant group, were not initially evidence-based, and have been refined. The criteria are not discriminators for redirection but highlight a group to be reviewed by a senior clinician who decides whether a patient will be seen in the ED or directed elsewhere. A protocol-based system is not used to guide the senior doctors' decision-making on the basis that protocols can constrain and cannot cover every scenario, and that senior ED staff have the necessary training to discriminate patients who require ED-level care from those who do not. They are guided by the ED service definition applied in Tayside: 'A service with the expertise to receive and manage undifferentiated patients when the urgency of presentation is such that no appropriate alternative arrangements can be made'. While variation can exist, inconsistency is minimised by frequent peer review and audit. Our hypothesis is that the combination of triggers and the senior doctor decision incorporate a margin of safety which is essential.

This study was an observation of practice with no intervention. The number of patients highlighted as ‘non-urgent’ is lower than most quoted studies.^{3, 4} The authors believe that the consistent application of the policy over a number of years has resulted in fewer patients with PC presentations attending Ninewells ED. Previous studies have failed to show such a benefit from education programmes alone.^{4, 10, 11} We contend that providing education for those presenting with ‘non-acute conditions’, while continuing to provide care, sends a mixed message and is unlikely to be successful.

Only 8% highlighted a PC factor as a reason for attending and only 7% of patients had attempted to see their GP. While GP accessibility has been raised as an issue, our evidence would suggest that it is not a significant problem in our area. It is of interest that only 66% of those redirected subsequently attended PC. A number of possible explanations exist, e.g. condition too minor to seek further consultation, self-limiting condition with resolution, care from services outwith our data collection. Regardless, the number not attending PC was higher than anticipated and this group merits further study.

Patient factors were cited in 74% of attendances. 20% regarded attending ED as more convenient than an appointment-based service despite the possibility of having to wait, and 10% attended for a second opinion after consulting their GP. We feel it is important to challenge the perception that the services are interchangeable. Convenience

does not equate with quality, or even an appropriate standard of care. Patients need to be aware that it is in their interests to be managed by staff trained to deal with their complaint. ED staff are not trained to deliver PC and have no prior knowledge of the patient or of possible follow-up arrangements. Potential for confusion is evident and GPs' own preference for non-urgent cases to be managed by PC has been demonstrated.¹²

Although only 4% of patients specifically cited an 'NHS24 reason' for attendance, 26% stated that they were either unaware of out-of-hours PC arrangements or chose not to contact NHS24. This raises concerns regarding failure to educate the public and, possibly, dissatisfaction with the 'front end' of the out-of-hours service in its present form.

Any strategy for managing attendances deemed non-urgent must be safe. The authors acknowledge that >72 hours of symptoms does not equate to non-urgency. Regular review has shown a reasonable correlation of that time period with the acuteness of a condition, and it is only used as a screening test, along with the other criteria, for a senior assessment. One third of highlighted patients reviewed by a senior doctor are subsequently seen formally, indicating a margin of safety. 34% of redirected patients did not present to PC and it is not possible to state definitively that no harm occurred in this group. Conversely, the figure for subsequent admission within one week (6%) does not necessarily imply that redirection was inappropriate. A proportion of admissions was for unrelated

conditions, some conditions had progressed, and a further group reflected a differing level of risk assessment between clinicians. These admissions represented the group of patients for whom we had the greatest concern and it is reassuring that, using a recognised tool to define harm, there was concordance between our PC and EM reviewers that there was no evidence of harm and only one episode of sub-optimal care.

Patients with non-urgent conditions attending EDs is a longstanding issue. Platt attempted to address this in 1962, advocating a change of name for Casualty Departments, in the hope of discouraging ‘casual’ attendances.¹³ More recently, Dale et al suggested that this group could be seen by PC within EDs.^{5, 14, 15} Attempts to provide a solution have included public education, provision of PC within EDs, co-location of PC centres and redirection by nurse triage.^{4, 5, 14-17}

Recent studies suggest that around 16% of ED attendances could be seen in PC although higher figures have been reported.³⁻⁵ Reducing this number would reduce ED overcrowding. There are differing views on tackling this, even at national level. In England, the National Integrated Urgent and Unscheduled Care Policy advocates that, where possible, a patient’s perceived treatment need should be concluded at first point of contact, while the Scottish Government Health Department’s (SGHD) Unscheduled Care Programme has a ‘Know Who to Turn to’ campaign advocating that patients be seen at the

right time, in the right place, by the right person. SGHD supports 'Redirection', and has issued guidance on implementation. Interestingly, co-location is advocated by both, and also by RCEM.

Limitations

There were a number of limitations to our study. This was an observation of normal practice and as the redirection policy has been applied for 18 years, it was not possible to provide a baseline. Data collected from another unit with no redirection policy may have been useful. We collected data over two months as a convenience sample and no calculation of sample size was carried out. Our follow-up of redirected patients was limited to GP feedback and review of those admitted within one week. This does not rule out all forms of harm and we cannot provide further information on patients who did not attend their GP after redirection. The definition of harm, developed by the Institute of Healthcare Improvement, is internationally recognised but favours a search for acts of commission rather than omission.¹⁸ It can be difficult to link an act of omission to harm and therefore a judgement of sub-optimal care was included. There is subjectivity in such judgements, and a larger expert panel may have strengthened the study. It was not the purpose of this study to look at patient, GP or staff satisfaction. The application of a redirection policy takes

significant commitment from staff. We did not carry out an assessment of resources and there are implications for senior doctor time. This has to be offset against what would otherwise progress to a full ED assessment, and further study is indicated.

Conclusions

Providing care for non-urgent cases within the ED has the potential to distract staff from their main function. While we would not wish to put barriers in the way of ED attendance, we advocate a short, focused assessment by an experienced clinician as an integral and early part of the process. Redirection with education has both immediate and long term effects. Co-location, as opposed to combination, of services would facilitate redirection and would allow maintenance of separate identity. We would emphasise that, in order to deliver safe care, patients with PC problems should be seen by appropriately trained clinicians.

Most strategic approaches to non-urgent attendances have involved reconfiguring EDs to accommodate them. We remain concerned that such an approach leads to overcrowding and reduces ability to respond to and manage acute conditions. The annual attendance increase in Tayside EDs is significantly less than the national average, and Ninewells is the only hospital in Scotland which has consistently achieved 98% 4-hour

waiting time target over 10 years.¹⁹ This may, in part, be a result of a consistent approach to redirection to PC and patient education.

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Contributors

The concept and design idea was generated by JAB, ST and WM. Notes were reviewed and data collected by JAB. Data review and interpretation was performed by JAB. Literature and background searches were performed by JAB. Statistical analysis was performed by WW. Figures and tables were created by JAB. Case note review was completed by Drs Fergus Gilmour and Neil Nichol using a trigger tool created by ST. Results were analysed

by WM. The first draft was written by JAB. WM and ST reviewed and edited all drafts. All authors agreed on the final draft.

Ethics approval

Local Caldicott Guardian approval.

Competing interests

None.

Provenance and peer review

Not commissioned; submitted for external peer review.

Data sharing statement

All requests for further data from this study should be addressed to the corresponding author.

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APPENDIX 1

‘Redirection’ – nurses’ guidance

Identify at ‘Triage’

- Patients whose injury or illness has been present for **MORE** than 3 days.
- Patients who have already consulted their General Practitioner with this presenting complaint.
- Patients presenting with minor illness or any problem which would normally be seen by a General Practitioner. This applies no matter when the illness or problem developed

There are no exceptions to the above

Advise these patients of the guideline and that it is likely they will be redirected to GP/OOH. Advise that this decision will be made by the senior doctor on duty who will speak to them as soon as possible.

Emphasise the importance of ensuring that staff are able to concentrate on emergency cases.

Give the patient a laminated information sheet, an advice leaflet and ask them to go back to the waiting room.

‘Special Situations’

- **Early Pregnancy Bleeding**

The ED is not a suitable referral destination for those with **early pregnancy bleeding** unless they are acutely unwell. NHS24 and GPs should refer directly to the gynaecology dept in Ninewells and the gynaecology triage nurse should not re-triage these patients to the ED.

Self presentations to the ED will be assessed by the triage nurse. Unless requiring opiate analgesia for severe pain or fluid resuscitation, they will be directed to the EPAC (in hours) or ward 36 (OOH) for assessment. The ED triage nurse will call the nursing staff in EPAC or ward 36 to inform them of the patient.

OOH patients in PRI will be directed to the collocated OOH service for GP care unless requiring active intervention.

- ***Patients under ongoing care from in-patient specialities.***

Patients who have had, or are under ongoing treatment from, an in-patient speciality may present to the ED with a problem related to that care. Unless the patient requires immediate intervention (resuscitation or analgesia) the triage nurse should refer to the on call team for the appropriate speciality. The nurse should inform the senior doctor if unsure how to proceed or if there is any difficulty in making the referral.

- ***Patients returning from out of area with conditions requiring further orthopaedic care.***

These patients should be redirected from reception to Plaster Room staff within hours and to the orthopaedic on call team in the OOH period.

APPENDIX 2

‘Redirection’ – Patient information

You have attended the Emergency department with

- **A condition that has been present for more than 3 days**
OR
- **A condition with which you have already consulted your own General Practitioner**
OR
- **An illness or health problem which would normally be seen and dealt with by a General Practitioner.**

What Happens Now?

The senior doctor on duty will come and speak to you and make a decision on whether you will be seen in the Emergency Department:

It is likely that you will be advised to make arrangements to see a General Practitioner.

We will attempt to do this as soon as possible but you may have to wait if the senior doctor is busy attending to emergency cases.

If you decide to leave and make arrangements to see a GP, please advise a nurse or a member of reception staff.

If the senior doctor decides that you should be seen in the Emergency Department, you will be seen in order of clinical priority and are likely to have to wait.

To allow us to deal effectively with emergency patients it is essential that non-emergencies make arrangements to see their GP. They will be more familiar with your medical history and can arrange appropriate investigations and care for this condition.