Patients with Minor Injuries: A Literature Review of Options for their Treatment Outside Major Accident and Emergency Departments or Occupational Health Settings

by

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ABSTRACT

This paper was written to provide Trent RHA with a review of options for treatment provision for patients with minor injuries outside major A&E departments. A search was made for literature either published or in the form of internal reports on such treatment provision, whether in community hospitals, GP practices or "stand-alone" minor injury clinics, with particular emphasis on the work of nurse practitioners (NPs). The literature on so-called "inappropriate attenders" in A&E was found to be prolific, but description of alternative forms of care for such patients was much less readily available as was good research on the subject. The working definition of minor injury treatment used for this study was

> "The urgent outpatient treatment of trauma which is suitable for treatment by a primary care team and does not require the specialist facilities of a district general hospital."

The principal criterion for inclusion in the review was relevance of the item to policies for minor injury treatment.

Opinions vary on the proportion of A&E attenders who could be treated in minor injury or primary care facilities. The consensus seems to be between 40% and 50%. The scope of work which could be carried out in a minor injuries unit will depend on the facilities available, (eg X-ray) the qualifications and experience of staff and their parameters of practice and the organisational links with a major A&E department.

Several alternative forms of care for minor injury patients are described. Minor injury units in community hospitals are one option. Another option is the conversion of part of the premises vacated by a major A&E department when services are rationalised, into a nurse-led minor injury unit. A third option is provision of minor injury treatment facilities in community or primary health care premises, again nurse-led, with back-up either from local GPs or the nearest A&E department.

The literature review did not discover any empirical reports on the care of minor injury patients in general practice. The paper distils some principles for setting up Minor Injury Units which occur commonly in the literature, the most important of which are the need for very thorough consultation with all concerned at the planning stages, the need for clinical supervision through a major A&E department, and that relationships with local GPs should be fostered and strengthened. The paper recommends that further research on minor injury units should be carried out, considering organisational and economic factors as well as clinical safety.

1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

This paper aims to provide Trent RHA with a review of options for treatment provision for patients with minor injuries outside major A&E departments. A search was made for literature either published or in the form of internal reports on such treatment provision, whether in community hospitals, GP practices or "stand-alone" minor injury clinics, with particular emphasis on the work of nurse practitioners (NPs). The literature on so-called "inappropriate attenders" in A&E was found to be prolific, but description of alternative forms of care for such patients was much less readily available, and good research on the subject almost non-existent. The working definition of minor injury treatment used for this study was

> "The urgent outpatient treatment of trauma which is suitable for treatment by a primary care team and does not require the specialist facilities of a district general hospital."

The principal criterion for inclusion in the review was relevance of the item to policies for minor injury treatment.

1.2 THE LITERATURE REVIEW

Opinions vary on the **proportion of A&E attenders who could be treated in minor injury or primary care facilities**. The consensus seems to be between 40% and 50%. Many attempts have failed to divert such patients away from A&E, by using persuasion. An alternative is to change the service offered, either by providing primary care by GPs within A&E or by setting up nurse-led minor injury services.

The scope of work which could be carried out **in a minor injuries unit** will depend on the facilities available, (eg. X-ray) the qualifications and experience of staff and

their parameters of practice and the organisational links with a major A&E department.

Whilst much has been written about the work of **nurse practitioners** both in A&E and in primary care there has not been a well-conceived experimental study of such work. The difficulties of undertaking such a study should not be minimised.

Several models of alternative forms of care for minor injury patients are described. **Minor injury units in community hospitals** are one option. These are generally staffed by nurse practitioners, with back-up medical advice from local GPs, but in particularly busy centres such as holiday resorts there may be regular attendance by staff-grade doctors or GPs. Most authorities recommend linkage of such units with a major A&E department, particularly for staff training and clinical supervision.

Another option described in several reports is the conversion of part of the premises vacated by a major A&E department when services are rationalised, into a **nurse-led minor injury unit**. Again, it is recommended that such a unit should be linked to a major A&E department.

A third option is provision of **minor injury treatment facilities in community or primary health care** premises, again nurse-led, with back-up either from local GPs or the nearest A&E department.

The following principles are reiterated in several articles or reports on minor injury units:

1. The name is important - Minor Injury Unit seems to be ideal, if patients with other primary care problems are not to be covered.

2. A strong relationship with the nearest major A&E department is desirable.

    a) For clinical oversight, rotation of staff, continuing education.

b) So that patients may be transferred quickly when necessary, and not have to go through a long waiting period.

3. Nurse practitioners should work within protocols agreed between themselves, their managers and the relevant clinicians.

4. Nurse practitioners should have authority to request X-rays after appropriate training, and authority to refer directly to clinicians and other sources of help.

5. Clinical audit should be a continuous process in MIUs.

6. Relationships with local GPs should be fostered and strengthened.

7. Strenuous efforts are needed when a new MIU is planned, to consult with all concerned, and to publicise the service.

The literature review did not discover any empirical reports on the care of minor injury patients in general practice. **It is recommended** that a "trawl" of FHSAs and commissioning/purchasing authorities for such reports is carried out.

1.3 ISSUES FOR FURTHER CONSIDERATION

The care of patients with minor injuries raises a number of **organisational and economic issues**.

a) There is quite a measure of agreement, though falling short of complete consensus, on the criteria against which the suitability of minor injury provision may be measured. These include efficiency, effectiveness and cost-effectiveness, access, equity, relevance and acceptability and staff and patient safety.

b) There is little investment or incentive structure to encourage GPs to treat minor injury patients. The need to consider such treatment across the whole spectrum of hospital and community care deserves further thought.

c) Economic issues are largely overlooked in the UK literature. The costs of equipping GPs to treat more minor injury patients or of providing for them in community hospitals or minor injury units need further study. In particular, the marginal costs for minor injury patients in major A&E departments (which have to be fully staffed to cover serious trauma patients) need investigating as do the supposedly minimal extra benefits of employing GPs or staff-grade doctors instead of NPs.

The review closes with a brief overview of the six minor injury units which the report covers in some detail.

2. INTRODUCTION

2.1 BACKGROUND

Attendance at accident and emergency (A&E) departments has risen inexorably ever since the inception of the National Health Service (NHS)(1). The "Platt" Report(2) encouraged the use of the term "accident and emergency" instead of "casualty" as a name for the departments, to discourage casual attenders, but to no avail; over the years a large literature on the topic of "inappropriate attenders" has built up, which will be discussed briefly below. More recently the term "primary care attenders" has been adopted by researchers at King's College Hospital(3-6) and their publications have gained acceptance amongst many A&E planners for the concept that it is not the attenders who are inappropriate, but the care provided. Accordingly, this review covers much published literature; but perhaps more importantly it covers a number of unpublished reports on alternative forms of care for patients with minor injuries, some of which were produced as part of option appraisals for health care decision making bodies. In common with Trent RHA, many authorities concerned with provision of health care need to decide how best to meet the needs of patients with minor injuries.

2.2 AIMS OF THE REVIEW

This report aims to provide Trent RHA with evidence of literature describing models of treatment provision for patients with minor injuries. It is hoped that two or three of these models may be suitable for adaptation to meet local needs here in Trent, and may themselves be subject to rigorous evaluation. This evaluation should meet the criteria of the health technology assessment report(7) that any new form of health care should be introduced only when it is part of a properly designed evaluation.

There were four objectives set for this literature review:-

1. To obtain articles and reports on alternative means of providing for minor injury patients outside traditional major A&E departments or occupational health departments - either in small local hospitals, GP practices or `stand-alone' clinics.

2. To search particularly for information on nurse-led facilities.

3. To review these articles and reports to demonstrate whether possible models exist for replication within Trent region, or at the very least whether the literature provides guidance on setting up alternative forms of provision.

4. To demonstrate whether a survey of FHSAs and purchasing authorities for such facilities could be worthwhile.

2.3 METHODS

The search strategy adopted for the first two objectives began with on-line searches of several databases then continued with scanning of abstracting materials and the reference lists of articles already obtained; this was followed by asking key personal contacts for information (see Appendices 1 - 3).

Keywords used in the search were:-

minor injuries

minor injury units

casualty departments

emergency care

community health centres

nurse practitioners

emergency treatment centre

accident treatment in general practice

minor accident departments

stand-alone minor injury units

Apart from a large body of literature on so-called "inappropriate attenders" the results of these exercises were meagre. Personal communication was the remaining, and most fruitful part of the search strategy; contacts in different parts of the NHS who shared Dr. Read's interest in nurse practitioners suggested a number of local reports on recently established minor injury facilities and these were obtained.

2.4 CRITERIA FOR INCLUSION

The principal criterion for inclusion in this review is relevance of the article or report to policies for minor injury treatment. In much of the literature, it is assumed that the meaning of "minor injury" is self-evident. For the purposes of this review, a working definition of minor injury treatment is adapted from the draft review from Leicestershire Health(8) of minor casualty services.

> "the urgent outpatient treatment of trauma which is suitable for treatment by a primary care team and does not require the specialist facilities of a district general hospital".

Associated with the element of suitability for primary care are the notions of self referral and being one of the "walking wounded" - in other words the decision to attend is the patient's (or the carer in the case of a child) and the patient does not need an ambulance to attend for treatment.

Because much of the literature is based on small scale studies or clinical experience, scientific standing is not a major criterion for inclusion, although most of the published work included has appeared in reputable and refereed journals. The very recent unpublished reports on minor injury units have not been assessed for scientific worth, but are quoted for their value as possible models of care provision, subject to further investigation. The review does not claim to be exhaustive, but aims to be useful to its commissioners in choosing options for the future.

3. THE REVIEW OF THE LITERATURE

3.1 THE NATURE OF THE PROBLEM OF PROVISION OF CARE FOR MINOR INJURY PATIENTS

Two recent reviews(9,10) suggest a range of between 14% and 70% of A&E attenders who may be suitable for treatment in a primary care facility or minor injury unit. A figure of 40% to 50% seems to achieve a consensus of opinion(11-14).

A number of studies investigate patients' reasons for attending A&E rather than general practice(15-20). These reasons include lack of knowledge that GPs have the facilities and are available to treat minor injuries, especially to suture wounds, and the patients' expectations that X-rays may be required. Of course in some cases, the GP may not be available, or willing. Several studies conclude that social deprivation increases attendance, as does living close to an A&E department and not being registered with a GP(21-24).

3.2 SUGGESTED SOLUTIONS TO THE PROBLEM

3.2.1 Changing Perceptions

Some authors concentrate on attracting patients back to primary care. Improving facilities for primary care especially in health centres is one suggested solution(25,26). Others suggest that educating the population about care of injuries and improving publicity would improve matters(13,16,20,23).

Conversely, another group believe that providing a service within the A&E department but following a primary care pattern of assessment and treatment, rather than an acute medical model, is the answer(27,4,5,6).

Jones(28) suggests that the demarcation between hospital and community services is a false one. He says

> "First we must identify A&E as a service to the community. If we continue to identify A&E solely as a department in the hospital then all the current concerns will simply escalate."(28).

Jones's solution is that A&E management teams should work directly with both hospital and community trusts, and with GPs, to provide primary care/minor injury services in A&E and in community settings, including employing nurse practitioners who would rotate between hospital and community, thus maintaining their clinical expertise and skills.

3.2.2 Nurse Practitioners

The concept of the **nurse practitioner in emergency care** is not a new one, of course. Many authors have suggested that minor injury patients would be very well managed by such nurses, or have described and analysed their work(1,24,29-36).

Maglacas defines the term "nurse practitioner" as

> "not so much a formal title as a form of practice and the specific training that has been designed for that practice"(37).

Devereaux adds

> "clearly what differentiates a nurse practitioner are her advanced skills in the diagnosis and treatment of disease. She practises these skills in the context of a nursing role complemented by traditional nursing skills . . . "(38).

Specifically in an A&E setting, Read et al(30) define an N.P. as

> "A nurse who is authorised to assess and treat patients attending an A&E department, either as an alternative to being seen by a doctor, or in the absence of a doctor in a department where a continuous medical presence is not maintained."

Read et al(30) describe a survey and census of nurse practitioner activity in major, minor and specialist A&E departments. Other writers describe specific NP schemes for treating minor injury patients in major A&E departments(31,32) or in minor injury units(35,36). More details of the latter are given below.

Fawcett-Henesy(39) sets out seven characteristics of NP practice:

> direct access for patients
> choice for patients (between NP and doctor)
> diagnostic and prescribing powers
> authority for referral
> personal attention during consultation
> adequate time for consultation
> counselling and health education

The need to stop applying a rigid demarcation between hospital and community care for minor injury patients, as argued by a number of authors already cited(3-6, 27-28) is echoed by Button(40) in a study of training needs for nurses treating minor injury patients, particularly nurses working in proposed "primary care resource centres" envisaged for the London area under the "Tomlinson" changes(41). Button(40) poses the question of whether the nursing role would be better filled by a primary care nurse with additional trauma training, or an experienced A&E nurse with additional education in primary care - but leaves the question unanswered. In her very useful report, Button defines the purpose of equipping nurses in general practice to deal with minor injuries as reducing recourse for patients to secondary care. She lists the following conditions as amenable to treatment by any reasonably prepared practice nurse.

grazes and lacerations
lumps, bumps and bruises
bee, wasp and other insect bites
dog bites
epistaxis
minor burns and scalds
sprains and muscle injury
foreign bodies

The author observes that at present there is no financial incentive for GPs to treat minor injury patients.

Button(40) then states that NPs in a "primary care resource centre" would encompass a far wider remit, operating autonomously in assessing, treating, discharging or referring for all primary care needs as well as minor injuries. She reviewed training and education already available in West London, and recommended that educational preparation and protocol development connected

with minor injury work should go hand in hand. Button's opinion was that the expense of increasing a practice's capability to treat minor injuries would not be justified for a practice with less than 10,000 patients; she listed the following items for costing at a later date.

capital costs of adapting/equipping buildings
staff costs for extended hours of opening
staff costs of nurses for minor injury work
up-grading of sterilizing equipment/sterile supply costs
training costs ie. course fees plus possible staff replacement costs

3.2.3 Community Hospitals

Many patients with minor injuries are treated at their local community hospital, either by an "unofficial" nurse practitioner(30) or by a GP or occasionally a clinical assistant or staff-grade doctor. The contribution of such community hospitals is described in a number of papers(42-47). Although not relevant at present in Sheffield, the topic of minor injury care in community hospitals is a much discussed issue in other parts of Trent region. An exceptionally useful report from Leicestershire(8) describes how a strategic review was set up to

1) define the need for minor casualty services in Leicestershire,

2) to evaluate the nature of existing provision against the criteria of
   access
   equity
   effectiveness
   relevance to need
   efficiency and cost effectiveness
   acceptability to consumers
   staff safety.

3) to determine the nature and range of service reasonably expected of primary care providers over a 24 hour period for minor injuries and health problems.

4) and finally to identify a range of future options, evaluating them against the listed criteria.

The Leicestershire review(8) focused on community hospitals, as there are already six of these in the county, and suggested that the cost of treating patients in minor injury units within such hospitals is half that of treatment in a major A&E department. The review noted that demand for primary care is usually high in areas with a high Jarman score on deprivation. An appendix to the Leicestershire review discusses medical cover in community hospital minor injury units and concludes that nurse practitioner staffing with back-up cover from GPs is more practicable than employing staff-grade doctors. Another useful appendix discusses costs which are low because many aspects are already covered by the day-to-day running costs of the hospital.

Further appendices to the Leicestershire review(8) cover GP opinions and the views of the general public, and the role of the FHSA and contractual aspects. Useful reports are given on the work of several minor injury units in other parts of England; these are discussed later in this paper. The review's conclusions are

1. That minor injury units (MIU) can be successful.

2. The name "minor injury unit" is important as it defines scope.

3. That it is vital for the MIU to be linked with a major A&E department (including regular transport and "fast-tracking" for MIU patients who are transferred so they do not have to repeat the waiting process).

4. That the parameters of practice for NPs in MIUs are vital, especially that they should be able to refer for X-ray and be trained to interpret X-rays.

Another report of a **minor injury unit in a local hospital** comes from **Bridlington**(48). This hospital is more than a community hospital - it is 18 miles from Scarborough, the nearest DGH, takes acute medical emergencies and has a coronary care unit. The MIU is under the supervision of the A&E consultant in Scarborough, and used to be covered medically by local GPs. The GPs withdrew their services following the signing of the new GP contract (1992) and from 1992 there has been medical cover from 8am to 4pm, 7 days a week, provided by staff-grade doctors, and a nurse practitioner service from 4pm till 8am. The NPs have no medical cover from within the hospital, but have admission rights to hospital beds at Bridlington, and may arrange immediate ambulance transfers to Scarborough A&E in cases of need.

The Bridlington MIU treats 20,000 new patients per annum and the report(48) covers three main issues - risk, waiting times and staffing needs. In the daytime, the risk is minimal. At night-time only one qualified nurse is on duty, so if two significantly injured people arrived at the same time, there would be serious problems. The waiting time issue is exacerbated by the Patient's Charter requirement(49) for immediate assessment; if that requirement is to be met, the single nurse has to repeatedly interrupt treatments to assess new arrivals. Both the risk and waiting issues contribute to the staffing requirement that in future, there should be medical cover between 8am and 6pm, supported by a triage nurse and another supporting nurse, and that the rest of the 24 hours should be covered by a nurse practitioner and a triage nurse. Consideration is being given to closing the Unit between 12 midnight and 8am, but the long distance between Bridlington and Scarborough makes this an unpopular option.

3.2.4 Minor Injury Units

The remaining articles and reports refer to **six different minor injury units, all of which were set up in the wake of the closure of a major A&E department**. The

order of review is related to the date of opening of the MIU. **Ancoats Community Clinic**(50,51) opened in 1989, following the closure of the A&E department on the same site. Staffed by four "F grade" sisters, with no medical cover, it is open every day and sees about 20,000 patients a year between 9am and 9pm. It is three miles from the nearest A&E department and few local people have their own transport. In addition to minor injury treatment, a needle-exchange service for drug addicts is provided, and some health promotion activities are held. The clinic is also a base for health visitors and district nurses. Extensive publicity heralded the clinic's opening.

Garnett and Elton's paper(50) describes a 6 month survey of attenders made in 1989. 70% of attenders came with minor injuries, and 20% were referred to Ancoats by GPs or other hospitals for blood tests, injections, dressings, suture removal or ear syringing. 90% of patients were seen within 15 minutes of arrival, and 92% were very satisfied with their treatment. The nursing staff only had to refer 8% of patients to the A&E department and 12% to their GP. The profile of attenders has more in common with A&E attenders than GP practice attenders (predominantly young and male), and the authors therefore conclude that the Ancoats clinic is not duplicating general practice provision but is appropriately treating minor injury patients who would otherwise attend an A&E department at a greater cost. Garnett and Elton(50) recommend that health outcome studies of nurse-led minor injury services be carried out, followed by cost-effectiveness comparison of competing options.

Gravesend Minor Casualty Centre(52) evolved in 1990 from the gradual run-down of an A&E department. Open 7 days a week from 9am to 9pm it is staffed by a rota of GPs and serves a community who mainly live within 10 minutes travelling time; about 25,000 patients per year attend. Dale and Dolan(52) report on a two-month study which aimed to consider three options for the future of the centre - closure, maintenance of the status quo, or enhancement of facilities. The study involved patient and GP surveys, consultation with HA managers, centre staff, patient, GP

and consultant representatives and an operational and process analysis of the service provided. Closure was thought to be unacceptable to the local community, and maintenance of the status quo not feasible. Dale and Dolan therefore recommended that the present GP run service should change, and that a nurse-led MIU should be established, with appropriate protocols and training for the nursing staff, to include accreditation for requesting simple X-rays and prescription from a basic formulary including analgesics, antibiotics and first-dose salbutamol. The report recommends that there should be GP on-call cover, that training and audit should be on-going, and that the service should be advertised appropriately. In addition, the authors recommend that consideration be given to augmenting the MIU by provision of a primary care resource centre, an out-of-hours care centre, and possible GP accessed beds.

Jones(35) describes the **Purfleet Minor Injuries Clinic** which opened in 1991, following the rationalisation of A&E services in Essex which involved transfer of A&E services from Orsett to Basildon. The clinic is unusual in that it only provides care for 5 hours each day (5-10pm weekdays, noon to 5pm at weekends). The clinic is not situated in hospital premises. Each shift is staffed by a G grade nurse practitioner and an A grade support worker. The opening times were designed to provide a service when most GP surgeries are closed and most minor injuries occur. Jones(35) reports on a six month pilot study from October 1991 to April 1992, but he has informed me that the clinic is continuing. The nurse practitioners may refer directly to the A&E consultant at Basildon, to the A&E clinic there, or may telephone the duty SHO for advice. The vast majority of the almost 1000 patients attending in the first 6 months complained of injury rather than illness, and audit of records by the consultant led to the conclusion that both attendance and treatment was entirely appropriate. Patient satisfaction was high and so the health authority has agreed to the continuation of the clinic which is now managed by Thameside Community Trust.

The inauguration of **St. Charles' Hospital's Minor Injuries Unit** in West London took place in February 1993(36,53). The MIU replaced the old A&E department which was only 2 miles from St. Mary's Paddington A&E department. It is staffed by seven nurse practitioners and opens 9am to 10pm 7 days a week. It has close working links with A&E at St. Mary's, including regular transport and immediate telephone links for advice. It has treated 12,000 patients in its first year of operation. Baker's article(36) describes the operating system as "client-led"; it enables the client to gain access to other services by direct referral from the nurse practitioner, without having to channel all requests through a doctor, as happens in many places. This level of co-operation was achieved through careful negotiation with the varying disciplines in hospital, primary and community care. The MIU staff devised protocols for different aspects of care, which were then adjusted and agreed by the consultants in the specialties concerned, such as orthopaedics, paediatrics, psychiatry as well as A&E. The MIU staff audit their work very rigorously which increases both their confidence and that of the consultants in the various specialties.

Like the Ancoats(50,51) and Purfleet(35) clinics, attendance has been found to be overwhelmingly appropriate at St. Charles' MIU, indicating that people do understand the concept and scope of minor injury clinics. Glasman's article(53) gives the MIU's costs as £240,000 a year, much less than the cost of a major A&E department, and quotes the Trust's Chief Nurse as saying that the MIU "is an attractive option if you have two expensive casualty departments close to each other". Bevan(8), in her report for Leicestershire, describes the St. Charles' MIU, and stresses the importance of the public relations role in the changeover from major A&E to MIU. Leaflets were delivered to all houses in the area, to all hospital and community staff and organisations, to supermarkets and other focal points. There were posters, press releases and media contact - and close co-operation with the Community Health Council all the way through. There is as yet no formal

evaluation of the St. Charles MIU, in common with most of the other units described so far in this review, other than Ancoats(50).

The last two facilities to be described have been running for less than a year. **St. Albans Minor Injuries Unit**(54) was opened in April 1993, on the site of the former A&E department, several months after major A&E services were rationalised to Hemel Hempstead General Hospital. Dr. Penny Newman of North West Thames RHA's Department of Public Health Medicine conducted a preliminary evaluation and issued a report in January 1994, making recommendations to the commissioning agency.

The aims of the study were

1. To describe the use of the Minor Injuries Unit, and of Hemel Hempstead A&E by St. Alban's residents,

2. To estimate the numbers of St. Albans residents attending Hemel Hempstead that could be treated at St. Albans MIU if

    i) the role of the NPs was extended to include making X-ray requests and out-patient referrals.

    ii) a GP was employed to support the NPs.

    iii) an A&E specialist was employed to support the NPs.

3. To assess potential quality of care in the MIU if each of options i to iii were adopted, and

4. To make recommendations to the commissioning Agency and local providers on the future of the service.

St. Albans MIU is open from 9am to 8pm, 7 days a week. Attendances between April and December numbered over 10,000, which was almost double the number

predicted. The attendance rate increased particularly from October onwards, when NP requested X-rays were introduced. It is staffed by 6 NPs and 3 receptionists.

Following detailed studies of 400 case notes of St. Albans' residents attending Hemel Hempstead A&E by a multi-disciplinary team, it was estimated that 43% could safely have been treated at St. Albans MIU - these were dubbed "primary care attenders". They were new patients with non-critical conditions (defined by triage category) who arrived at A&E between 9am and 8pm, not by ambulance, and who did not require urgent investigation or referral to the on-call team. Further study of case notes led Dr. Newman to conclude that provision of either GPs or A&E doctors in St. Albans MIU would only marginally increase the potential number of treatable patients, and would not be economically effective(54). However, it was acknowledged that proper studies of cost effectiveness were needed before MIUs could be widely adopted. Dr. Newman made several recommendations that would apply equally, whichever option was adopted. Contact with a major A&E department and local GPs should be fostered and maintained, along with a commitment to continuing education. Audit should be careful, taking particular note of X-ray requests, transfers to other hospitals, and return appointments. Patients transferred to major A&E departments should be "fast-tracked" on arrival, to avoid repeated waiting. Transport between the MIU and the major A&E department should be easily available, and publicity to inform and educate the public and health professionals of changes in services is very important.

Finally, the **Minor Treatment Centre at South Westminster Centre for Health** was also opened in April 1993, to compensate for the closure of Westminster and Westminster Children's Hospitals' A&E departments(55,56). The centre utilises former hospital premises.

The Minor Treatment Centre (MTC) is staffed by 2 nurse practitioners and is open 9-5 on weekdays and 9-12 on Saturdays. (Planning permission does not allow longer

hours of opening.) About 88 patients have attended each week since opening - about 50% of these for minor injury care, and the remainder for blood tests, health advice and counselling. The GPs who share the building perceived the MTC as an extension of the practice nursing service, to be used when their own nurses were over busy(56). Newman et al's options appraisal paper(55) on the Minor Treatment Centre also commented on the need for clarification of relationships between the NPs and the primary care teams that use the building. The paper(55) also recommended that the NPs should undertake training for suturing wounds, that the limited prescribing rights for NPs should be extended a little, that protocols for treatment, prescribing, requesting X-rays and referral should be compiled and regularly reviewed, and that records should be computerised to facilitate audit and further evaluation.

An NHS Management Executive report on minor injury services was published in late March 1994, but too late for inclusion in this review.

Most of the papers in this section on new minor injury units have recommended that economic appraisal should be carried out before wider dissemination of these models is undertaken. Two further articles underline the need for further study.

3.3 THE NEED FOR MORE RESEARCH

A thoughtful article by a group of Danish authors(57) highlights the complexity of the issues surrounding treatment of patients with minor injuries, taking as themes for analysis utilisation patterns of GP facilities and A&E departments, patients' choice of mode of care, quality of care in various types of system, substitution possibilities of different modes of care, and the economic and/or medical desirability of the different modes.

In Denmark attention is focused on the transfer of treatment of minor injuries from A&E to general practice, in the belief (as yet unproven) that this is cheaper, but also

less tangibly that the patient benefits from personal attention from the doctor who knows him, thus providing both ease of access and continuity of care. Bentzen et al(57) describe a study they undertook of substitution possibilities for patients attending an A&E department out-of-hours over a two week period. Both lay people and professionals agreed that about 50% of minor trauma cases could have been managed in general practice. The authors suggest that for a balanced analysis of the substitution question, information is needed from service users and professionals (including doctors in both A&E and general practice) and from economists. Implementing substitution policies is acknowledged as difficult, and needs co-operation from administrators and politicians as well as health care professionals and the public.

Bentzen et al(57) highlight the difficulty of estimating the real cost of treating minor injury patients in A&E departments, given that the department still has to maintain 24 hour facilities even if minor injury patients are diverted elsewhere. They stress that patient costs should also be considered (transport costs, waiting time and time off work), as should the extra costs incurred by general practice.

Hallam(9) in a very recent and comprehensive review of "out-of-hours" primary care in both general practice and A&E departments echoes Bentzen's(57) conclusion that this is a complex problem that demands research comparing different solutions. Hallam summarises her article by saying

"the lack of comprehensive information on the current provision, utilisation, demand and cost of out of hours primary care services and the limited attempts to evaluate any alternative system argue the need for an experimental phase, in which new approaches to service delivery are explored and evaluated, before the widespread adoption of any particular option."(9)

4. SUMMING UP THE ISSUES

A number of issues have been raised in this review, some conceptual and some practical, which should be highlighted.

4.1 Many authors have discussed **why patients attend A&E** in preference to their own GPs practice(3-6, 9-27). One solution which has often failed is attempting to persuade people to change their behaviour pattern. The alternative is to change the service offered, either by providing primary care by GPs within A&E (3-6) or by setting up nurse-led minor injury services(28, 35-36, 48, 50-56).

4.2 **The scope of work** which could be carried out **in a minor injuries unit** will depend on the facilities available, (eg. X-ray)(36,54) the qualifications and experience of staff and their parameters of practice(30, 40, 8, 48, 50, 54-56) and the organisational links with a major A&E department(8, 35, 48, 50-54).

4.3 Whilst much has been written about the work of **nurse practitioners** both in A&E and in primary care(28-40, 48-56) there has not been a well-conceived experimental study of such work. The difficulties of undertaking such a study should not be minimised(58).

4.4 The care of patients with minor injuries raises a number of **organisational and economic issues**. The criteria against which care needs to be measured are efficiency, effectiveness and cost-effectiveness, access, equity, relevance and acceptability and staff and patient safety(8). The lack of incentives for GPs to treat minor injury patients(40,8,48), and the need to consider such treatment across the whole spectrum of hospital and community care(28, 35, 57, 9) deserves further thought. Economic issues such as the costs of equipping GPs to treat more minor injury patients(40), or of providing for them in community hospitals(8) or minor injury units(53,54) need further study(9, 57). In particular, the marginal costs for minor injury patients in major A&E departments which have to be fully staffed to cover

serious trauma patients need investigating(57,59) as do the supposedly minimal extra benefits of employing GPs or staff-grade doctors instead of NPs(8, 54, 57). The siting of minor injury units, whether in previous A&E premises or in new community based premises, and the opening hours for such units are other issues which have been raised. The question of the use of sports injury clinics did not emerge in the literature consulted, but could be considered.

5. CONCLUSIONS

This report has gone some way towards meeting the aims and objectives set. Some of the reports discussed do suggest models which could be followed, particularly of nurse-led facilities, although none of the MIUs have been established long enough for evaluation to be really well founded. Empirical studies describing minor injury care in general practice did not emerge from the review; a "trawl" of FHSAs and commissioning/purchasing authorities could be useful in this respect.

Six minor injury units replacing closed A&E departments are described here. They are:

Ancoats Community Clinic(50,51), established in 1989, is nurse-led with no medical cover. It opens from 9am to 9pm, and sees 20,000 patients per year. The nurses work within protocols, and it was set up after much lobbying by the local community, and was well publicised. It is situated in a deprived area of Manchester, on former hospital premises. It would be useful to have more up to date information about it.

Gravesend Minor Casualty Centre, established in 1990 on old hospital premises, has been GP run, but appears(52) to be encountering difficulties and therefore could not be taken as a model. It opens 9am to 9pm and sees 25,000 patients per year.

Purfleet Minor Injuries Clinic(35) established in 1991, is interesting because its opening hours (5 hours a day) are targeted at times when GP care is difficult to

obtain, and because it is situated in community premises, not in a hospital. 2000 patients per year are treated. It is nurse-led, with telephone contact to a major A&E department and further information could be very useful.

St. Charles Minor Injuries Unit(36,53), established in 1993, is nurse-led with close links to a nearby major A&E department. It is in hospital premises, and the nurse practitioners work within strict protocols. It is open 9am to 10pm, seeing 12,000 patients in its first year. It has strong support in the local community, and its opening was well publicised. Further information could be useful.

St. Albans Minor Injuries Unit(54), established in 1993, is in hospital premises and open from 9am to 8pm. It has much in common with St. Charles, and again could be a useful model.

South Westminster Centre for Health's Minor Treatment Centre(55,56), again established in 1993, opens office hours only and is situated in old hospital premises. It is obviously experiencing problems because of lack of agreement about its purpose and scope, insufficient protocol development and publicity.

There are a number of principles that recur in accounts of MIUs and this report closes with a restatement of them.

1. The name is important - Minor Injury Unit seems to be ideal, if patients with other primary care problems are not to be covered.

2. A strong relationship with the nearest major A&E department is desirable.

a) For clinical oversight, rotation of staff, continuing education.

b) So that patients may be transferred quickly when necessary, and not have to go through a long waiting period.

3. Nurse practitioners should work within protocols agreed between themselves, their managers and the relevant clinicians.

4. Nurse practitioners should have authority to request X-rays after appropriate training, and authority to refer directly to clinicians and other sources of help.

5. Clinical audit should be a continuous process in MIUs.

6. Relationships with local GPs should be fostered and strengthened.

7. Strenuous efforts are needed when a new MIU is planned, to consult with all concerned, and to publicise the service.

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APPENDIX 1: JOURNALS CONSULTED

Annals of Emergency Medicine

Archives of Emergency Medicine

British Journal of General Practice (formerly JRCGP)

British Journal of Nursing (formerly Nursing)

British Medical Journal

Community Medicine

Family Practice

Health and Social Service Journal

Health Service Journal

Health Services Management

Health Trends

Hospital and Health Services Review

International Journal of Nursing Studies

Journal of Advanced Nursing

Journal of Emergency Nursing

Journal of Public Health Medicine

Journal of the Royal College of General Practitioners

Journal of the Royal Society of Medicine

Medeconomics

Mew Zealand Medical Journal

Nursing

Nursing Mirror

Nursing Research

Nursing Times

Paediatric Nursing

The Practitioner

Practice Nurse

Primary Health Care Management

Pulse

Quality in Health Care

Sociology of Health and Illness.

APPENDIX 2: DATABASES CONSULTED

CINAHL

Current literature on health services

DHSS Data

Health Service Abstracts

Hospital Abstracts

King's Fund Centre Library, Unicorn Database

Medline

Nursing Bibliography

Nursing Research Abstracts

APPENDIX 3: ORGANISATIONS CONSULTED

Bridlington and District Hospital

Gary Jones, A&E nursing consultant and lecturer

Kensington, Chelsea and Westminster FHSA

King's College Department of General Practice and Primary Care. Brian Dolan, researcher.

Leicestershire Health

NWThames RHA - R&D Directorate and
Department of Public Health Medicine (Dr Penny Newman)

Sheffield FHSA - Dr. T. Williams, Medical Director.

Sheffield University Department of General Practice - Dr. Nigel Mathers