

Improving Timeliness of Care in Ireland's Emergency Departments

P. Gilligan¹, V. Hetherington²

1. Emergency Department, Beaumont Hospital, Dublin.
2. Irish Medical Organisation, Dublin.

Abstract

Background

The National Emergency Medicine Programme in Ireland in 2012 recommended that a six-hour limit to the time patients spend in an Emergency Department (ED) from ED arrival to admission to a ward, transfer or discharge home should be achieved 95% of the time. This research was performed to establish what Consultants in Emergency Medicine in Ireland felt was required to consistently achieve the delivery of emergency medical care within a six-hour limit.

Methods

This prospective qualitative research involved a questionnaire based on Asplin et al's conceptual model of Emergency Department crowding and a review of the literature as to proposed causes and solutions to crowding.

Results

Long waiting lists for diagnostic tests and outpatient appointments are leading to patients being referred to ED. It was proposed to increase access to diagnostics and outpatient appointments and to facilitate appropriate direct referrals to specialist services. Solutions proposed to address throughput challenges were increasing staffing levels in the ED, improving patient flow and extending the hours of access to diagnostics and imaging.

Discussion

Inadequate hospital capacity was noted as the major cause of ED crowding and an urgent need for an increase in hospital bed numbers was identified.

Introduction

Emergency Department (ED) crowding is a manifestation of failure to address the healthcare needs of a population in a timely manner.¹ There is significant frustration with this failure of health systems to deliver on solutions to this ongoing compromise to patient safety and cause of increased preventable deaths.²⁻⁷ A number of countries have now introduced limits on the length of time patients should spend in the ED.^{8-10.}

Ireland is particularly challenged with respect to the accessibility and timeliness of hospital based care.¹¹ The National Emergency Medicine Programme in Ireland in 2012 noted that a six hour limit to the time patients spend in an Emergency Department from arrival to the ED to admission to a ward, transfer or discharge home should be achieved 95% of the time.¹² This six hour Limit is still frequently not delivered on as evidenced by the numbers of patients awaiting a ward bed in Irish EDs each day.¹³ This research was performed to establish what Consultants in Emergency Medicine in Ireland felt was required to consistently achieve the delivery of emergency medical care within a six hour limit.

Methods

This prospective qualitative questionnaire research involved collaboration between the Irish Medical Organisation (IMO) and the Irish Association for Emergency Medicine (IAEM). Approval for the study was obtained from the research committee of the IAEM. An online Survey Monkey questionnaire was developed based on Asplin et al's conceptual model of Emergency Department crowding and a review of the literature as to proposed causes and solutions to Emergency Department crowding.¹⁴ The twenty question questionnaire addressed the potential causes and solutions relating to input challenges i.e. the numbers of patients arriving to EDs. The throughput challenges and solutions addressed things that might impact on the timely delivery of care relating to internal processes in the ED. The output element examined the potential causes and solutions to delays in admitting patients to wards, transferring patients or discharging patients from the ED.

The questionnaire was circulated by e-mail to the Consultant members of the Irish Association for Emergency Medicine with a link to the questions embedded in the e-mail. A reminder e-mail was sent to prompt further responses. The data was analysed using Survey Monkey and Excel software and descriptive statistics are used to present the data. The responses were ranked on the basis of the level of priority given by the respondents which was converted to a score for each cause or solution. Those answering the survey were asked to prioritise the factors with 1 being the highest priority and the lowest priority being given the number dependent on the number of options given e.g. 4 were there were 4 factors. The priority level for each factor was averaged and subtracted from the average for the maximal score which was dependent on the number of factors identified and the number of respondents ranking that factor.

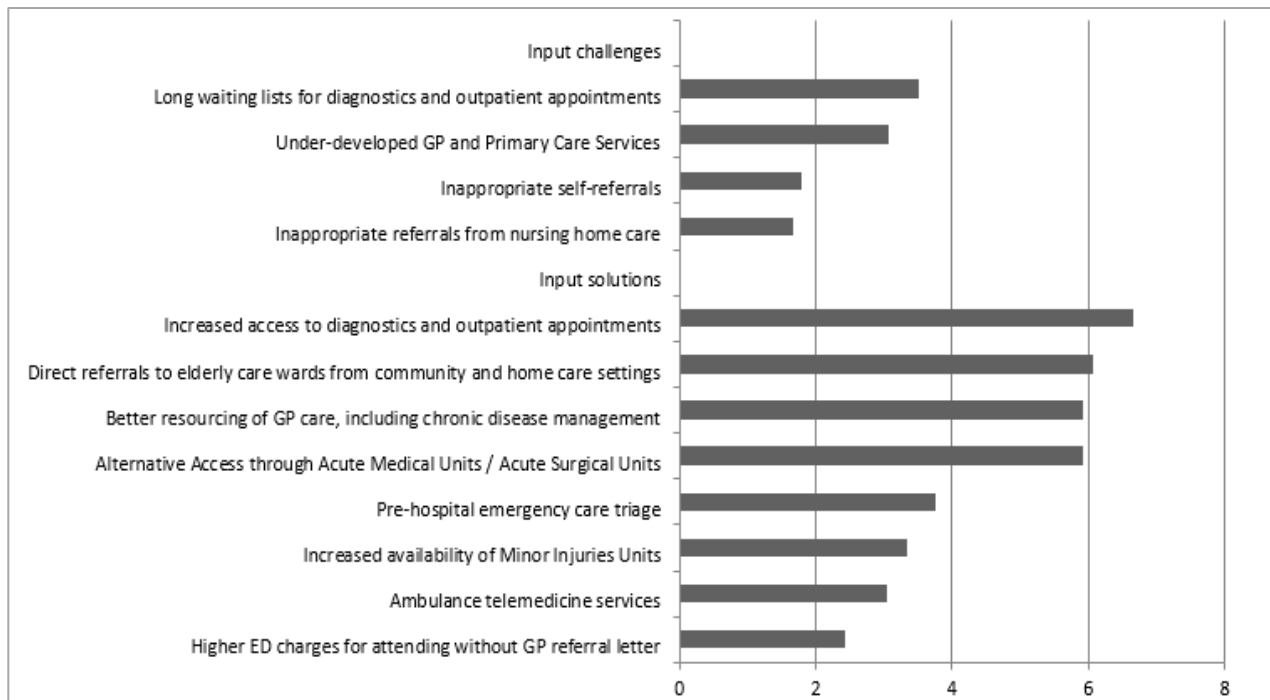
Results

Completed questionnaires were returned by 31 respondents who spent a mean time of 50 minutes (Range 6 minutes to 469 minutes) completing it. All but one of the Hospital groups in Ireland were represented. 26 (83.9%) of the respondents were in full time Consultant practice. Eighteen (58%) worked in mixed adult and paediatric EDs and 12 (39%) were in Adult EDs and 1 (3%) worked in a Paediatric ED.

Input factors

When asked about the main input factors i.e. the numbers of patient attendances contributing to ED overcrowding and delayed admissions and discharges, the senior Doctors prioritised the issue of long waiting lists for diagnostic tests and outpatient appointments which led to patients being referred to ED to potentially access these in a more timely manner (Fig. 1).

Figure 1: Ranking of input challenges and solutions.



Y axis: Causes and solutions, X axis mean priority score

The Respondents wrote

“GP referrals for what could and should be outpatient department referrals.”

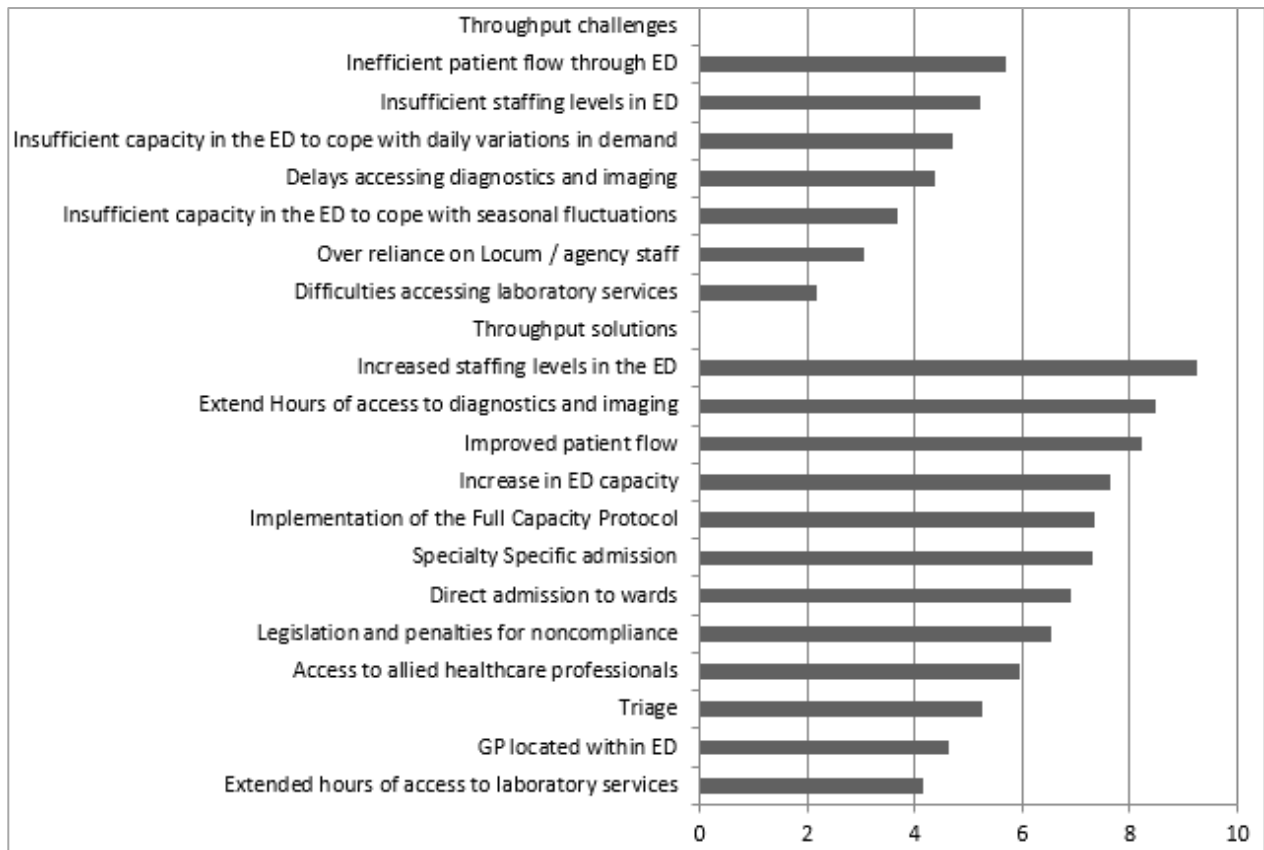
“In patient (and impatient!) specialties using ED as the default urgent (as opposed to emergent) admission pathway for urgent admissions or inter hospital transfers. No attempt to contact bed management. Symptomatic of how embedded the tolerance and expectation of lack of bed capacity has become.”

Other reasons proposed for increased attendances to EDs included demographic change, lack of alternative access to healthcare, changing societal expectations, increased complexity of patients’ conditions, lack of access to support services such as home care providers, nursing home care, detoxification centres, increased referrals from private hospitals and ambulance service protocols.

The priorities in relation to solutions proposed to address the input challenges were to increase access to diagnostics and outpatient appointments, to facilitate direct referrals to elderly care wards from the community and home care settings, to provide resources to General Practice (GP) including resourcing of chronic disease management and to provide alternative access through Acute Medical Units (AMUS)/ Acute Surgical Units (ASUs) (Fig 1.)

With respect to the issues within the Emergency Department i.e throughput factors contributing to ED overcrowding and delayed admissions/discharges, inefficient patient flow through the Emergency Department and inadequate staffing were seen to be of major importance (Fig.2). The highest priority solutions proposed were increasing staffing levels in the ED and extending the hours of access to diagnostics and imaging and improving patient flow (Fig. 2).

Figure 2: Ranking of throughput challenges and solutions



Y axis: Causes and solutions, X axis mean priority score

Throughput factors

In relation to the main throughput factors contributing to ED overcrowding and delayed admissions/discharges the respondents wrote:

“No free ED spaces at 8 am. Playing catch up all day. Remove boarders and Ed will flow.”

“ED cubicles taken over by in-house teams to lodge isolation patients or other admitted patients. We have to provide our ED care on corridors in a department with 22 bays in our non-resuscitation areas.”

“Unavailability of on call teams due to scheduled commitments.”

“Because of lack of bed capacity - inpatient teams routinely see their referrals in ED - often major time lag between referral and inpatient team completing the admission with delays therefore in patient being listed for bed.”

The majority of the Consultants felt they would require significant increases in all staff groups to provide more timely care. The sort of staffing level increases proposed for each ED were a mean increase of 5 more EM Consultants (range 2 to 12), 5 more Registrars (range 1 to 15), 4 more Senior House Officers (range 0 to 15), 3 more Advanced Nurse Practitioners (range 0 to 10) and 15 more Nurses (range 0 to 40).

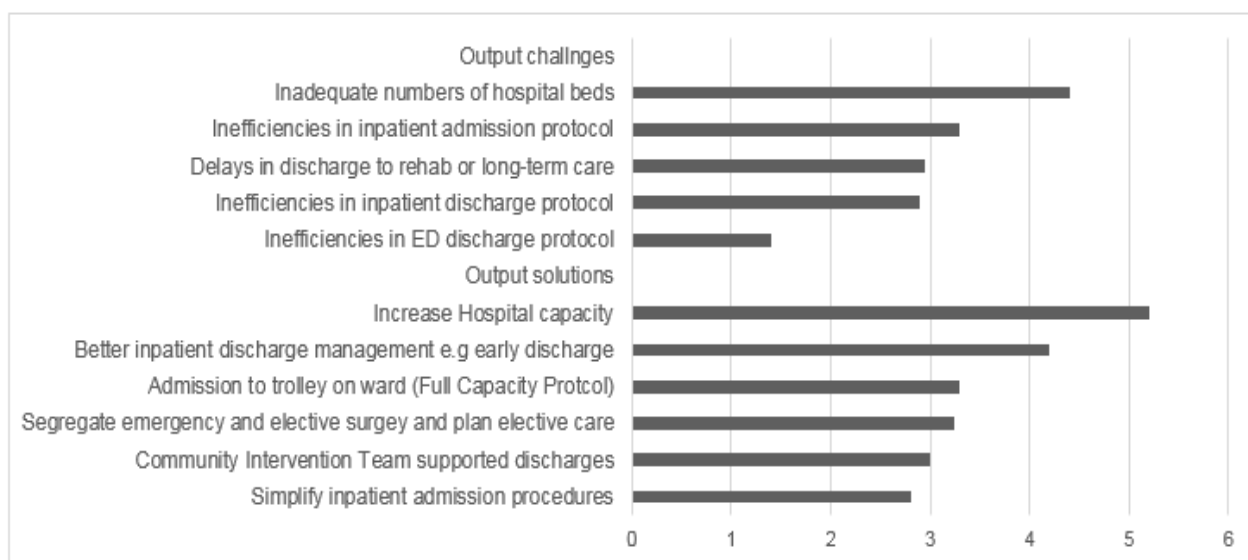
For those requiring expansion of their EDs the following additional capacity would be required to assist them in achieving the six-hour limit:

A mean increase of 11 assessment cubicles (range 0 to 37), 7 more observation cubicles (range 0 to 20), 4 more critical care spaces (range 0 to 10)

Output factors

In relation to the main output factors which contribute to ED overcrowding and delayed admissions and discharges the lack of available hospital beds was noted to be the most significant issue (Fig 3).

Figure 3. Ranking of output challenges and solutions



Y axis: Causes and solutions, X axis mean priority score

The suggested solutions were to Increase hospital capacity both in terms of inpatient and critical care beds and to try to improve inpatient discharge management with more early morning discharges and quicker turnaround times for ward beds to become available.

When asked about the additional hospital capacity required to consistently achieve the six hour target the mean requirement per hospital for hospital beds was 76 additional ward beds (range 16 to 250), 8 additional intensive care beds (range 1 to 30), 6 Coronary care beds (range 0 to 20) and 11 discharge lounge beds (range 0 to 40). This gives a mean proposed additional bed requirement of 106 beds per acute hospital in Ireland according to the Emergency Medicine Consultant respondents.

When asked about what are the main output factors which contribute to ED overcrowding and delayed admissions and discharges, they wrote:

“The in-house teams are often not aware of the extent of the overcrowding and how bad the conditions are for patients and staff in the ED and therefore may not feel under pressure to discharge patients”.

“This requires a change in culture and a hospital wide approach. It requires a zero-tolerance approach by hospital management to allowing patients to wait for protracted periods on trolleys for in house beds. This situation is now unfortunately deemed acceptable by hospital management and hospital staff.”

Discussion

The frustration of the senior EM specialists with regard to failure to deliver timely care and the ensuing crowding of EDs was particularly evident from the free text responses in this study. Khanna et al have argued that “the complexity of hospital operations ensures that one-size-fits-all solutions seldom work and that as hospitals turn to evidence based strategies to redesign flow, it is critical that they tailor the strategies to suit their individual service”.¹⁵ This study clarified that the senior EM specialists in Ireland felt there were multi-factorial reasons for crowding and hence they emphasized different potential solutions. There did appear to be consensus relating to the fact that insufficient hospital bed numbers was a significant contributor to ED delays and crowding. The number of hospital beds per capita has decreased over the past decade in most OECD countries, falling on average from 5.6 per 1 000 population in 2000 to 4.7 per 1000 in 2015 at which time Ireland had 3 per 1000.¹⁶ When compared with other OECD countries, Ireland not only has a low supply of hospital beds but it records the highest rate of patient bed occupancy at 95 per cent.¹⁶ The National Audit Office in the United Kingdom has suggested that hospitals with average bed occupancy levels above 85% can expect to have regular bed shortages, periodic bed crises and increased numbers of health care-acquired infections.¹⁷ Derlet and Richards in their ten suggestions to address crowding of Emergency Departments placed expansion of Hospital capacity as the first suggested solution.¹⁸ In this research the Emergency Medicine Consultants of Ireland strongly identified the need to increase hospital bed numbers nationally if they are to deliver timely care to patients. Over one hundred additional beds per acute hospital would be even more than the 2590 beds suggested by the Health Service Capacity Review.¹⁹ The increase in acute hospital bed numbers suggested by the EM Consultants is closer to that noted by the Economic and Social Research institute which was that between 3,200 and 5,600 additional beds are projected to be required in Ireland’s public hospitals between 2015 and 2030.²⁰

Limitations of this study include the fact that the number of respondents was 31 out of a possible 88 Consultants but as all EDs in Ireland are multi-Consultant Departments and given the nature of the questionnaire it was unnecessary for all Consultants in each Department to complete the questionnaire to achieve thematic saturation. We were pleased that all but one Hospital group were represented by the respondents. The closed question format pertaining to the ranking of causes and solutions may have inadvertently omitted themes but the free text sections attempted to compensate for this and few other themes were identified by the participants. The study only sought the insight of senior specialists in Emergency Medicine as they are vicariously responsible for the delivery of clinical care in the EDs in which they work but we accept that other professionals would certainly have relevant and useful insights to offer.

Crowding of Emergency Departments is significantly contributed to by patients waiting for a ward bed to become available.²¹ Setting and resourcing a limit to the time patients should spend in an Emergency Department has been achieved in a number of countries.^{9,22-24} It has been associated with reduction in Emergency Department length of stay in the United Kingdom, Australia and New Zealand.²²⁻²⁴ It is clear from our research that the ability to deliver timely care in Emergency Departments requires a whole system approach and a well-resourced health service. Consultants in emergency medicine are clear that inadequate acute hospital capacity in terms of staffing and bed numbers is the key challenge to achieving the 6-hour target. They have identified a clear need to expand hospital bed numbers and increase staffing in ED if the six-hour patient care limit is to be achieved in Ireland.

Declaration of Conflicts of Interest:

The authors have no conflicts of interest to declare.

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Corresponding Author:

Dr Peadar Gilligan,
Emergency Department,
Beaumont Hospital,
Dublin.

Email: peadargilligan@beaumont.ie

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