



Moving evidence based guidelines for seizures into practice in the emergency department: What's stopping us?



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ABSTRACT

Purpose: To identify barriers to implementation of an evidence based integrated care pathway (ICP) for seizure management in the Emergency Department (ED).

Methods: A site specific bespoke questionnaire was designed to solicit anonymous responses from all grades of ED medical and nursing staff to a series of questions regarding utility, feasibility, significance and implementation of a locally designed and championed ICP for seizure management and onward referral.

Results: While 95% of respondents agreed that the pathway ensured patients were treated according to best practice, a number of human factors were identified as barriers to use. These fell into three categories 1) environmental 2) pathway design/process and 3) user related issues.

Conclusions: Most respondents understood and endorsed the evidence based utility of the pathway. Barriers to use, however, are broad with interactions involving many complex human factors. Nevertheless, solutions can be relatively easily formulated but departmental-wide effort is required to comprehensively address all issues.

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1. Introduction

Epilepsy is the second most common chronic neurological disorder after stroke. A recent prevalence study in Ireland suggests that 1% or around 40,000 people have epilepsy [1]. One third of patients have poorly controlled seizures on medication prompting regular presentations to the Emergency Department (ED). International studies have suggested that the majority of patients are referred unnecessarily for admission and that acute management of seizures is ineffective, resulting in delayed diagnosis and prolonged length of stay [2]. Repeated seizure presentations and admissions can lead not only to an increase in ED workload [3] but contribute to wasted resources in an ever challenging health environment. The annual cost of epilepsy in Europe is estimated to be in the region of €13.8 billion [4].

The National Audit of Seizure management in Hospitals (NASH) study has shown that there is variability in the approach to acute seizure assessment, investigation and treatment in EDs in the UK. The study also

showed highly variable thoroughness of the neurological examination, eyewitness history taking, commencement of treatment and referral for specialist follow up [5]. Seizures have a significant impact on the quality of life of the patient, due to the legal implications of driving and also the physical danger posed by unpredictable or prolonged convulsions. Therefore a standardised evidence based care approach is necessary to guide management in the non-specialist and acute setting.

An Irish led national initiative, developed through the National Epilepsy Care Programme, led to the design of an Integrated Care Pathway (ICP) for seizure management in the ED [6]. The pathway was a 6 page document which contained all the necessary steps for evaluation, investigation, management and follow-up of patients who present to the ED following a seizure. It was designed by a committee of stakeholders from multiple disciplines including epileptology, emergency medicine, specialist nurses from both disciplines and patient representative groups. Embedded into the document were standards of care outlined in the NICE and AAN guidelines which should be met when evaluating a patient with seizures in the ED. The document includes the criteria necessary for admission, acute neuroimaging and the optimum time-scale for evaluating a patient presenting with seizures and status epilepticus. The pathway also contains a detachable patient information sheet which gives details of safety information, legal implications for driving and the use where necessary of rescue medication. When a patient is admitted to hospital, the pathway is filed as part of the patient's

Abbreviations: ED, Emergency Department; ICP, Integrated Care Pathway; NASH, National Audit of Seizure management in Hospitals; AAN, American Academy of Neurology; NICE, National Institute for Health and Care Excellence.

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admission record for the admitting team. If the patient is discharged from ED, the pathway is then sent to the epilepsy service and the patient given a rapid access seizure clinic appointment.

The pathway was piloted by the Neurology service at our hospital. Initial work by our group showed that use of the ICP could significantly reduce readmission rates from 45% down to 8.9% [7], aid in timely decision making, reduce waiting time for EEG and facilitate early discharge. This helped to reduce the median length of stay 5 to 2 days and saving a total of 834 hospital bed days [7]. In order for the pathway to be sustainable nationally in the long-term it needed to be embedded within the emergency department and carried out by ED staff. It is currently in operation in several hospital emergency departments in Ireland though is not yet standard practice at all ED sites in the country. Studies in emergency medicine have shown that doctors are reticent to employ structured guidelines or clinical pathways as they consider this process to be like a 'cookbook', lacking recognition of the complex treatment required for the heterogeneity of a patient's condition (8). However it has also generally been accepted that the judicious use of prescribed pathways in the correct clinical scenario can help reduce variability in care and potential for error. Studies have shown targeted use of guidelines can provide improved care of chronic diseases such as asthma and diabetes [8,9].

Local audit figures within our hospital up until September 2015 showed that three years after initial implementation only 30% of patients presenting following a seizure were placed on the ICP. Follow up data obtained from hospital electronic patient records system, showed that those not placed on the ICP were twice as likely to get admitted after presenting and 10 times more likely to represent with seizures within the subsequent 6 months [10]. Given the obvious benefits to patient care by being placed on the ICP, the main aim of this project was to identify the barriers to its use within the ED in order to improve utilisation rates.

2. Methods

This study was conducted in the ED of St. James's Hospital, a large tertiary referral centre in an urban area. The hospital has over 1000 inpatient beds and end of year figures from 2016 revealed that there were a total of 47,989 presentations to the ED. Of these 732 were due to seizures accounting for approximately 1.5% of all ED presentations. The study was carried out in March 2016, 4 years after full implementation of the seizure ICP at our institution.

A bespoke questionnaire was designed to solicit anonymous responses from all grades of ED medical and nursing staff to a series of questions regarding factors that limit the use of the seizure ICP in the ED. The survey tool was designed by JW after an extensive literature review on the barriers to implementing care pathways and healthcare reform. It was reviewed at a multidisciplinary team meeting prior to being piloted on a sample of ED staff. At the time of the survey all ED doctors had undergone education and instruction about the ICP at the junior doctor staff changeover. All of those surveyed had been working in the department for at least two months, so would have had sufficient exposure and familiarity with the pathway and its operation to answer the questionnaire. The questionnaire was distributed to all 42 ED staff members (Consultants, non-consultant hospital doctors, nurse managers and staff nurses all of whom perform patient triage in the emergency department on a rotational basis).

The questionnaire had 3 subsections:

- 1) Anonymous information about the participant; e.g. staff grade, length of time working in the ED and number of years since qualification.
- 2) A checklist of 11 questions specifically about the seizure ICP which required participants to grade their responses on a Likert rating scale.
- 3) Participants were asked to individually identify and prioritise barriers to pathway utilisation and suggest improvements in their

own words. They were also asked to identify if patients had been informed their care was driven by an evidence based pathway.

This study was conducted in March 2016 when the ICP had been in operation for 4 years. Forty two experienced ED staff from both medical and nursing backgrounds were approached to take part. The questionnaire was completed anonymously with data collected by a nominated person within the ED and not by any of the investigators involved with the study to help reduce bias. The study investigators were all blinded as to which comments and answers were given by specific staff members. To investigate if clinical seniority had an impact on results we categorised consultants, specialist registrars and registrars into a group called senior clinicians, the other two groups were junior doctors and nursing staff for the purposes of subgroup analysis.

3. Results

3.1. Participant demographics

There was a total number of 42 participants. The staff role figures were broken down as follows: staff nurses whom all also provide triage nurse service on a rotational basis to ED 18 (43%), clinical nurse managers 6 (14%), senior house officers 9 (21%), registrars 4 (10%), specialist registrars 2 (5%) and consultants 3 (7%).

3.2. Likert rating scale responses in the group as a whole

A Likert scale asking participants to choose between strongly agree, agree, neutral, disagree or strongly disagree with certain statements was used to assess the ED staff understanding of the role and utility of the ICP. The results are presented in Fig. 1. The majority of respondents (95%) agreed that use of the ICP ensured patients were managed according to best practice. A significant proportion of respondents (80%) understood that completing the ICP meant patients received specialist follow up after discharge from ED in a timely manner. Just under two thirds (62%) agreed or strongly agreed that the pathway document circumvented the need for ED clinical notes thus avoiding double documenting. The same proportion (62%) also reported they followed the recommended timeline outlined in the pathway guidelines for investigating and treating people with seizures who presented to the ED. A minority (14%) felt that patient work up on the pathway took longer than without it. Respondents views were equally split on whether or not being placed on the ICP avoided unnecessary investigations and admissions with one third in favour, one third disagreeing and one third remaining neutral.

3.3. Likert responder subgroup analysis

Our study sample of respondents illustrates the diversity of the ED workforce which comprises of different grades of nurses, junior doctors and more senior clinicians such as consultants, specialist registrars and registrars. This is not unique to our institution and would be reflective of emergency room teams nationwide and in other countries. Given that the absolute numbers of consultants, specialist registrars and registrars is small we have grouped them into one group called senior clinicians for the purposes of subgroup analysis. As a group they represented 9 out of all 42 questionnaire respondents with junior doctors and nurses accounting for 9 and 24 respectively. In Table 1 we have presented subgroup analysis of the percentage of each group who agreed or strongly agreed with the statements outlined in the Likert questionnaire. The majority of participants in all groups felt that the seizure care pathway ensured patients were treated according to best practice and that placing a patient on the seizure care pathway ensured specialist follow up. We noted that between 17 and 33% of all participants' responded neutral to the Likert scale questions. We found that staff nurses and junior non-consultant hospital doctors displayed a higher degree of uncertainty when compared with the more senior members of staff.

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