

<u>Location</u>	<u>Variable</u>	<u>Categories</u>	<u>Notes</u>
ED	ED area	1 Minors 2 Majors 3 Resus 4 Not documented	The highest dependency area that the patient went to during the ED attendance.
	HR on arrival	1 Normal 2 Low 3 High 4 Not documented	Normal heart rate (HR) = 60-100 beats per minute
	RR on arrival	1 Normal 2 Low 3 High 4 Not documented	Normal respiratory rate (RR) = 14-18 breaths per minute (male) and 16-20 breaths per minute (female)
	Systolic BP on arrival	1 Normal 2 Low 3 High 4 Not documented	Normal systolic blood pressure (BP) = 100-140 mmHg
	BM on arrival	1 Normal 2 Low 3 High 4 Not documented	Normal blood glucose (BM) = 3.5-11.1 mmol/l
	GCS on arrival	3 4 5 etc. 15 16 Not documented	GCS (Glasgow coma scale) is used to assess the state of consciousness of the patient. 3/15 (lowest score) = completely unresponsive 15/15 (highest score) = conscious, orientated, and responding well to questions

	Temperature on arrival	1 Normal 2 Low 3 High 4 Not documented	Normal temperature = 36.5-37.5°C
	O ₂ sats	1 Normal 2 Low 3 Not documented	Low O ₂ sats = < 94%
	SHEWS score on arrival	0 1 2 3 4 Not recorded	Sheffield hospitals early warning score (SHEWS) is an early warning system used to determine the degree of illness of a patient based on their HR, systolic BP, RR, temperature and level of alertness. Based on a scale from 0 to 3, where 0 is normal and 1-3 are outside the normal range, and 3 represents the greatest deviation from normal.
	Formal diagnosis of epilepsy?	1 Yes 2 No	A 'formal diagnosis of epilepsy' was as documented by the ED doctor on the ED card - as part of the medical history or documentation that the patient was known epileptic. Formal diagnosis means a diagnosis made by an appropriately qualified clinician - in most cases this would be a neurologist by could also include general physicians. Includes both idiopathic and symptomatic epilepsies. Non-epileptic attacks and alcohol-related seizures were not included unless a clear diagnosis of epilepsy was recorded as well.
	Documented history of PNES	1 Yes 2 No	

	Suspicion of non-epileptic seizure documented	1 Yes 2 No	If clinician had a suspicion that the event was a non-epileptic attack.
	Seizure presentation on arrival (1)	1 Single seizure 2 Recurrent seizures	This variable was copied directly from the pre-hospital (EPIC1) data, as it is difficult to determine recurrence from the ED card. Seizures were divided into patients for which this was their first seizure in the previous 24 hours (single) and patients who had experienced more than one seizure in the previous 24 hours (recurrent).
	Seizure presentation on arrival (2)	1 Complete 2 Ongoing	
	Seizures during ED attendance	1 Yes 2 No	This includes unwitnessed seizures where the patient was found to be post-ictal.

	Other clinical problem (1)	1 None 2 Syncope 3 Stroke/TIA/CVA 4 Hypoglycaemia 5 Arrhythmias 6 Alcohol 7 Injury 8 Drugs 9 Other (specify)	<p>This encompasses other clinical problems which may be acutely present in addition to the seizure, which requires hospital treatment and/or assessment. This would include, for example, a head injury requiring CT but no treatment, but would exclude bruising/grazes to the limbs. They may be the cause of the seizure, a complication of the seizure, or unrelated to the seizure.</p> <p>Arrhythmias: Does not include sinus tachycardia or sinus bradycardia.</p> <p>Alcohol: refers to any recent alcohol use and past alcohol abuse suggested by the past medical or drug history and of the patients such as a history of withdrawal seizures or alcohol dependent. The only exception is where alcohol consumption was indicated but was specifically noted to be below the recommended daily allowance (2-3 units for women, 3-4 units for men) with no reference to previous alcohol abuse.</p> <p>Drugs: includes illicit drug use as well as overdose on prescribed medication.</p>
	Other clinical problem (1) (other)		

	Other clinical problem (2)	1 None 2 Syncope 3 Stroke/TIA/CVA 4 Hypoglycaemia 5 Arrhythmias 6 Alcohol 7 Injury 8 Drugs 9 Other (specify)	
	Other clinical problem (2) (other)		
	Other clinical problem (3)	1 None 2 Syncope 3 Stroke/TIA/CVA 4 Hypoglycaemia 5 Arrhythmias 6 Alcohol 7 Injury 8 Drugs 9 Other (specify)	
	Other clinical problem (3) (other)		

	Documented alcohol dependency	1 Yes 2 No	<p>Where there is a clear statement that the patient has documented current alcohol dependency.</p> <p>Alcohol dependency is defined by the DSM-IV criteria as: “A maladaptive pattern of alcohol use leading to clinically significant impairment or distress, as manifested by three or more of the following seven criteria, occurring at any time in the same 12-month period: Tolerance; withdrawal; alcohol is often taken in larger amounts or over a longer period than was intended; there is a persistent desire or there are unsuccessful efforts to cut down or control alcohol use; a great deal of time is spent in activities necessary to obtain alcohol, use alcohol or recover from its effects; important social, occupational, or recreational activities are given up or reduced because of alcohol use; alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the alcohol”.¹⁸⁰</p>
--	-------------------------------	---------------	---

	Clinical condition on arrival	1 Alert 2 Post-ictal 3 Ictal 4 Other (specify)	<p>Taken from the nurses notes on arrival or ED notes if the clinical condition on arrival is clearly stated.</p> <p>The postictal state is the abnormal condition occurring between the end of an epileptic seizure and return to baseline condition. We operationalised our definition of post-ictal to only include symptoms that were a barrier to the patient being safely discharge home. It specifically did not include tiredness, headache or myalgia. The main feature which would mean safe discharge was not possible are: reduced consciousness, significant drowsiness, neurological deficits etc.</p>
	Clinical condition on arrival (other)		
	Seizure-related Injuries	1 Yes (specify) 2 No	Here injuries are only included if they required hospital assessment or treatment (in ED or as in-patient).
	Injuries (specify)		

	Fully recovered at the end of attendance	1 Yes 2 No	The patient was fully recovered if they had returned to their normal level of functioning with no acute medical problems that required hospital assessment and/or treatment, and were not post-ictal. We operationalised our definition of post-ictal to only include symptoms that were a barrier to the patient being safely discharge home. It specifically did not include tiredness, headache or myalgia. The main feature which would mean safe discharge was not possible are: reduced consciousness, significant drowsiness, neurological deficits etc.
	Pregnancy	1 Yes 2 No	
	Illicit drug abuse documented/suspected	1 Yes 2 No	
	Medication in ED (1)	1 Yes 2 No	Anticonvulsant medication used for the termination of seizures.
	Medication in ED (2)	1 Lorazepam 2 Phenytoin 3 Diazepam 4 Midazolam 5 Other (specify)	
	Medication in ED (2) (Other)		
	HES code (local)		
	HES code (national)		

	ED disposal	<ul style="list-style-type: none"> 1 Discharged home 2 Discharged elsewhere 3 Admitted (specify where) 4 Death 5 Self-discharge 	
	Admitted to	<ul style="list-style-type: none"> 1 General medicine 2 ICU 3 Neurology 4 Other (specify where) 	
	Admitted to (other)		
	Referral / Post-seizure follow up advice	<ul style="list-style-type: none"> 1 Epilepsy clinic/first fit clinic 2 Epilepsy specialist nurse (referral or verbal advice) 3 GP 4 Other 	The patient was said to have been referred to their GP if the patient was advised to see their GP for reasons relating to the care of their epilepsy. The ED physician may have written a letter to the GP.
	Referral (other)		
	Final diagnosis/impression of ED clinician (1)	<ul style="list-style-type: none"> 1 Epileptic seizure (first fit) 2 Epileptic seizure (not first fit, no formal diagnosis of epilepsy) 3 Epileptic seizure (formal epilepsy diagnosis) 4 Non-epileptic attack 	<p>This is the diagnosis of the suspected seizure event.</p> <p>"not seizure" cases were included in this variable.</p> <p>Here, a 'formal epilepsy diagnosis' is one documented by the ED clinician.</p>

		5 Acute symptomatic seizure (specify) 6 Not seizure (specify)	
	Final diagnosis/impression of ED clinician (1) (acute symptomatic - specify)		
	Final diagnosis/impression of ED clinician (1) (not seizure - specify)		
	Final diagnosis/impression of ED clinician (2)		
	Indication for admission	1 Social 2 Medical (seizure-related) (specify) 3 Medical (not seizure-related) (specify)	Social admissions are those where there is no medical reason for admission e.g. unable to put care package in place for discharge.
	Indication for admission (seizure-related - specify)		
	Indication for admission (not seizure-related - specify)		
In-patient	Date of admission		
	Date of discharge		
	Duration of admission		

	Seizures during admission	1 Yes 2 No	This includes unwitnessed seizures where the patient was found to be post-ictal.
	Final discharge destination	1 Home 2 Death 3 Self-discharge 4 Other (specify)	Home' was defined as the current or usual residence of the patient. This included rented or owned properties as well as institutions such as nursing or care homes. If the patient was discharged somewhere new, for example a patient previously living at home being discharged to a care home, this was documented as 'other'.
	Final discharge destination (other)		
	Transferred to another speciality during inpatient admission	1 Yes (specify) 2 No	
	Transferred to another speciality during inpatient admission (specify)		
	Fully recovered at the end of attendance	1 Yes 2 No	The patient was fully recovered if they had returned to their normal level of functioning with no acute medical problems that required hospital assessment and/or treatment, and were not-post ictal. We operationalised our definition of post-ictal to only include symptoms that were a barrier to the patient being safely discharge home. It specifically did not include tiredness, headache or myalgia. The main feature which would mean safe discharge was not possible are: reduced consciousness, significant drowsiness, neurological deficits etc.

	Referral / Post-seizure follow up advice	1 Epilepsy clinic/first fit clinic 2 Epilepsy specialist nurse (referral or verbal advice) 3 GP 4 Other	The patient was said to have been referred to their GP if the patient was advised to see their GP for reasons relating to the care of their epilepsy. The physician may have written a letter to the GP.
	Referral (other)		
	Diagnosis at discharge	1 Epileptic seizure (first fit) 2 Epileptic seizure (not first fit, no formal diagnosis of epilepsy) 3 Epileptic seizure (formal epilepsy diagnosis) 4 Non-epileptic attack 5 Acute symptomatic seizure (specify) 6 Not seizure (specify)	Taken from discharge sheet, if no discharge sheet then final diagnosis documented in progress record or clerking sheet.
	Diagnosis at discharge (acute symptomatic - specify)		
	Diagnosis at discharge (not seizure - specify)		
Epilepsy clinic	Ever seen in epilepsy clinic?	1 Yes 2 No	

	Seen in epilepsy clinic before the index event?	1 Yes 2 No	
	Seen in epilepsy clinic (or specialised epilepsy services) as a result of the index event?	1 Yes 2 No	
	Does the patient have a diagnosis of epilepsy that was made in the epilepsy clinic? If yes, specify.	1 Yes 2 No	Regardless of when this diagnosis was made.
	Epilepsy clinic epilepsy diagnosis	1 Localisation-related epilepsy (focal, local, partial) 2 Generalised epilepsy 3 Undetermined whether focal or general 4 Special syndromes	These categories are based on the ILAE Proposal for Revised Classification of Epilepsies and Epileptic Syndromes - Epilepsia (1989) 30(4): 389-399.
	Does the patient have a diagnosis of PNES that was made in the epilepsy clinic? If yes, specify.	1 Yes 2 No	
From all sources	AEDs	1 Yes (state which) 2 No	AEDs at the time of the ED attendance in May 2012.

	Which AED (1)	1 Sodium valproate 2 Carbamazepine 3 Levetiracetam 4 Phenytoin 5 Phenobarbital 6 Not documented 7 Other (state which)	
	Which AED (1) (Other)		
	Which AED (2)	1 Sodium valproate 2 Carbamazepine 3 Levetiracetam 4 Phenytoin 5 Phenobarbital 6 Not documented 7 Other (state which)	
	Which AED (2) (Other)		
	Non-concordance with AEDs	1 Yes 2 No	<p>At the time of the event in May 2012.</p> <p>This refers to patients who have not taken their AED medication as prescribed including cases where patients have run out of AEDs or forgotten to take their medication, as well as patients who have overdosed. Includes suspected non-adherence.</p>

	"Best available" aetiological explanation for the index event .	1 Epileptic seizure (first fit) 2 Epileptic seizure (not first fit, no diagnosis of epilepsy) 3 Epileptic seizure (epilepsy diagnosis) 4 Non-epileptic attack 5 Acute symptomatic seizure (specify) 6 Not seizure (specify)	"Not seizure" cases included in this variable.
	"Best available" aetiological explanation for the index event (acute symptomatic - specify)	1 Yes 2 No	
	"Best available" aetiological explanation for the index event (not seizure - specify)	1 Yes 2 No	
	Hospital management		These variables pertain to key features of hospital management received by the patient. The list is not exhaustive. This includes treatments that were not specifically to treat the seizure in the case of complex patients with more than one clinical problem.
	Expert opinion	1 Yes 2 No	Expert opinion from any hospital specialist on diagnosis, investigations or management.
	Was an AED regime started or modified during the admission?	1 Yes 2 No	Either in ED or in-patient.
	Neuroimaging	1 Yes 2 No	Acute neuroimaging especially CT head scan.

	Acute medical treatment (specify)	1 Yes 2 No	Excluding injuries. Including: parenteral drugs to terminate seizures, IV fluids, etc.
	Acute treatment of injuries (major)	1 Yes 2 No	Dressings, sutures, shoulder relocation etc. which probably required hospital treatment.
	Acute treatment of injuries (minor)	1 Yes 2 No	Dressings, sutures, shoulder relocation etc. which probably did not require hospital treatment.
	Other (specify)	1 Yes 2 No	
	Other (specify)		Narrative account of hospital treatment