

## APPENDIX 1 SEIZURES PROCEDURE

All original analysis/syntax located at CISSU S:\Information\Ruth\Seizures\Original data.

Seizures data extracted from staging inpatients dataset:-

- 01/04/2006 – 31/03/2013 all episodes where :-

Admission method is in the list

<b>Emergency Admission</b> , when admission is unpredictable and at short notice because of clinical need:	
21	Accident and emergency or dental casualty department of the Health Care Provider
22	GENERAL PRACTITIONER: after a request for immediate admission has been made direct to a Hospital Provider, i.e. not through a Bed bureau, by a GENERAL PRACTITIONER or deputy
23	Bed bureau
24	Consultant Clinic, of this or another Health Care Provider
28	Other means, examples are: *** - admitted from the Accident and Emergency Department of another provider where they had not been admitted - transfer of an admitted PATIENT from another Hospital Provider in an emergency - baby born at home as intended

Where medical specialty is in the list

192 Critical Care Medicine
300 General Medicine
301 Gastroenterology
302 Endocrinology
303 Clinical Haematology
314 Rehabilitation
315 Palliative Medicine
320 Cardiology
330 Dermatology
340 Respiratory Medicine
361 Nephrology
370 Medical Oncology
400 Neurology

410 Rheumatology
430 Geriatric Medicine
820 General Pathology
823 Haematology

Where the last episode in the spell indicator is

“1. This episode is the last episode in the hospital provider spell”

Where x\_transaction\_flag =null

Where any of the 1<sup>st</sup> 15 ICD10 codes are in the list (SEIZURE CODES)

G400	LOCAL-RELATED (PART) IDIOPATH EPILEP/EPILEP SYND WITH SEIZ O
G401	LOCAL-RELATED (PART) SYMPTOM EPILEPSY/EPILEPTIC SYND WITH SI
G402	LOCAL-RELATED (PART) SYMPTOM EPILEPSY/ EPILEP SYND W/ COMPLE
G403	GENERALIZED IDIOPATHIC EPILEPSY AND EPILEPTIC SYNDROMES
G404	OTHER GENERALIZED EPILEPSY AND EPILEPTIC SYNDROMES
G405	SPECIAL EPILEPTIC SYNDROMES
G406	GRAND MAL SEIZURES, UNSPECIFIED (WITH OR WITHOUT PETIT MAL)
G407	PETIT MAL, UNSPECIFIED, WITHOUT GRAND MAL SEIZURES
G408	OTHER EPILEPSY
G409	EPILEPSY, UNSPECIFIED
G410	GRAND MAL STATUS EPILEPTICUS
G411	PETIT MAL STATUS EPILEPTICUS
G412	COMPLEX PARTIAL STATUS EPILEPTICUS
G418	OTHER STATUS EPILEPTICUS
G419	STATUS EPILEPTICUS, UNSPECIFIED
R568	OTHER UNSPECIFIED CONVULSION

Where hospital trust code is in the list

RBL	WIRRAL UNIVERSITY TEACHING HOSPITAL NHS FOUNDATION TRUST
RBN	ST HELENS AND KNOWSLEY HOSPITALS NHS TRUST
RBT	MID CHESHIRE HOSPITALS NHS FOUNDATION TRUST

REM	AINTREE UNIVERSITY HOSPITAL NHS FOUNDATION TRUST
RJN	EAST CHESHIRE NHS TRUST
RJR	COUNTESS OF CHESTER HOSPITAL NHS FOUNDATION TRUST
RQ6	ROYAL LIVERPOOL AND BROADGREEN UNIVERSITY HOSPITALS NHS TRUST
RVY	SOUTHPORT AND ORMSKIRK HOSPITAL NHS TRUST
RWW	WARRINGTON AND HALTON HOSPITALS NHS FOUNDATION TRUST

Dataset produces a file containing 33,194 admissions

- Validation complete on main datasets, to ensure level of discharges are consistent over the 7 year dataset period

Year	% of dataset
2006/2007	12.56%
2007/2008	12.89%
2008/2009	13.30%
2009/2010	14.99%
2010/2011	15.27%
2011/2012	15.20%
2012/2013	15.79%
(blank)	0.00%
<b>Grand Total</b>	<b>100.00%</b>

- This main dataset referenced above was then queried to produce a list of diagnosis codes appearing in P1, the diagnosis codes were then clinically evaluated by MGP to determine whether they were relevant to epilepsy or not. See appendix 1 for the full list of diagnosis codes in P1. This then allowed for the data to be categorised into 4 main groups

- 1) DEFINITE SEIZURE – Seizure code in position 1 with relevant secondary or R568 in position1 with a seizure code in later position
- 2) PROBABLE SEIZURE – Seizure code in later position and a probable linked diagnosis in position 1
- 3) POSSIBLE SEIZURE – Seizure code in later position and a possible linked diagnosis in position 1
- 4) DEFINITELY NOT SEIZURE – Seizure code in later position but no linked diagnosis in position 1

Year	Definite	Probable	Possible	Not relevant	Blank	Grand Total
2006/2007	1232	442	688	1785	22	4169
2007/2008	1155	514	784	1796	29	4278
2008/2009	1257	485	807	1839	28	4416
2009/2010	1256	596	932	2161	30	4975
2010/2011	1306	551	1033	2155	24	5069
2011/2012	1230	601	1052	2132	31	5046
2012/2013	1258	588	1094	2247	54	5241
<b>Grand Total</b>	<b>8694</b>	<b>3777</b>	<b>6390</b>	<b>14115</b>	<b>218</b>	<b>33194</b>

## ADDING DATA FROM OTHER DATA SOURCES

- The admissions dataset for definite and probable seizures was linked to the A&E dataset, also saved in CISSU S:\Information\Ruth\Seizures\Original data. The staging inpatients table was linked to staging A&E where HESID is the same in both tables and the A&E arrival date is within one year of the admission date.
- The admissions dataset for definite and probable seizures was linked to the outpatients dataset, also saved in CISSU S:\Information\Ruth\Seizures\Original data. The staging inpatients table was linked to staging outpatients where HESID is the same in both tables and the outpatient clinic date is within one year of the admission date and the outpatient treatment function is '400' (neurology).

## VALIDATIONS, EXCLUSIONS AND CHANGES TO THE DATASET

### VALIDATIONS

All fields in the dataset had frequencies run on them to understand what was contained, so that we could change or exclude any corrupt data

- Of the 12,471 definite and probable seizures, there were 162 records missing a HESID, these have been included in the number of admissions but discounted from any analysis at patient level. Records without a HESID have also been excluded from A&E and outpatient analysis as the record will not have matched with an A&E or outpatient clinic.
- There were 98 records at the Walton Centre, these have been left in the dataset but removed from any summary analysis

### DUPLICATES

- It is important to check the Data Quality of the dataset and to check for duplicates. This was completed by creating a concatenated field of HESID and discharge date and spell ID, no duplicates were identified as they were removed during the query in the statement `x_transaction_flag=null`.

### ADDING ADDITIONAL FIELDS

- **CATEGORY** – Identifies the admission as a definite, probable, possible or not relevant to epilepsy
- **FINYEAR** - Contains the financial year of the discharge date.
- **UNIQUE ADMISSION** – Identifies a unique admission when linking data to A&E and outpatient records as admissions will duplicate by the number of A&E attendances or outpatient clinics
- **TIME TO CLINIC** – Clinic date minus discharge date or if clinic date < discharge date then admission date minus clinic date
- **TIME TO A&E** – A&E date minus discharge date or if A&E < discharge date then admission date minus A&E arrival

### ANALYSIS

- All initial basic analysis has been done using Excel pivot tables

ICD codes used

Row Labels	Description	Definite	Probable
G400	LOCAL-RELATED (PART) IDIOPATH EPILEP/EPILEP SYND WITH SEIZ O	1	0
G401	LOCAL-RELATED (PART) SYMPTOM EPILEPSY/EPILEPTIC SYND WITH SI	1	0
G402	LOCAL-RELATED (PART) SYMPTOM EPILEPSY/ EPILEP SYND W/ COMPLE	1	0
G403	GENERALIZED IDIOPATHIC EPILEPSY AND EPILEPTIC SYNDROMES	1	0
G404	OTHER GENERALIZED EPILEPSY AND EPILEPTIC SYNDROMES	1	0
G405	SPECIAL EPILEPTIC SYNDROMES	1	0
G406	GRAND MAL SEIZURES, UNSPECIFIED (WITH OR WITHOUT PETIT MAL)	1	0
G407	PETIT MAL, UNSPECIFIED, WITHOUT GRAND MAL SEIZURES	1	0
G408	OTHER EPILEPSY	1	0
G409	EPILEPSY, UNSPECIFIED	1	0
G410	GRAND MAL STATUS EPILEPTICUS	1	0
G411	PETIT MAL STATUS EPILEPTICUS	1	0
G412	COMPLEX PARTIAL STATUS EPILEPTICUS	1	0
G418	OTHER STATUS EPILEPTICUS	1	0
G419	STATUS EPILEPTICUS, UNSPECIFIED	1	0
R568	OTHER AND UNSPECIFIED CONVULSIONS	1	0
F019	VASCULAR DEMENTIA, UNSPECIFIED	0	1
F100	MENTAL AND BEHAVIOURAL DISORDERS DUE TO ACUTE INTOXICATION W	0	1
F101	MENTAL AND BEHAVIOURAL DISORDERS DUE TO HARMFUL USE OF ALCOH	0	1
F102	MENTAL AND BEHAVIOURAL DISORDERS DUE TO ALCOHOL DEPENDENCE S	0	1
F103	MENTAL AND BEHAVIOURAL DISORDERS DUE TO WITHDRAWAL OF ALCOHO	0	1
F104	MENTAL AND BEHAVIOURAL DISORDERS AND DELIRIUM DUE TO WITHDRA	0	1
F419	ANXIETY DISORDER, UNSPECIFIED	0	1
G439	MIGRAINE, UNSPECIFIED	0	1
H538	OTHER VISUAL DISTURBANCES	0	1
J690	PNEUMONITIS DUE TO FOOD AND VOMIT	0	1
K292	ALCOHOLIC GASTRITIS	0	1
R402	COMA, UNSPECIFIED	0	1
R410	DISORIENTATION, UNSPECIFIED	0	1
R418	OTHER & UNSPEC SYMPTOMS & SIGNS INVOLVING COGNITIVE FUNCTION	0	1
R42X	DIZZINESS AND GIDDINESS	0	1
R451	RESTLESSNESS AND AGITATION	0	1
R51X	HEADACHE	0	1
R55X	SYNCOPE AND COLLAPSE	0	1
R600	LOCALIZED OEDEMA	0	1
R798	OTHER SPECIFIED ABNORMAL FINDINGS OF BLOOD CHEMISTRY	0	1
S000	SUPERFICIAL INJURY OF SCALP	0	1
S001	CONTUSION OF EYELID AND PERIOCCULAR AREA	0	1
S008	SUPERFICIAL INJURY OF OTHER PARTS OF HEAD	0	1
S009	SUPERFICIAL INJURY OF HEAD, PART UNSPECIFIED	0	1
S010	OPEN WOUND OF SCALP	0	1

S018	OPEN WOUND OF OTHER PARTS OF HEAD	0	1
S019	OPEN WOUND OF HEAD, PART UNSPECIFIED	0	1
S099	UNSPECIFIED INJURY OF HEAD	0	1
S308	OTHER SUPERFICIAL INJURIES OF ABDOMEN, LOWER BACK AND PELVIS	0	1
Z038	OBSERVATION FOR OTHER SUSPECTED DISEASES AND CONDITIONS	0	1
Z739	PROBLEM RELATED TO LIFE-MANAGEMENT DIFFICULTY, UNSPECIFIED	0	1