

**Title:** *Acute Kidney Injury in the era of the AKI e-alert*

**Supplemental Material**

**Supplemental Table 1.** Staging of AKI

**Supplemental Table 2.** E-alert rules.

**Supplemental Table 3.** AKI e-alert codes and their corresponding triggers, AKI rules, AKI stages

**Supplemental Table 4.** Specialties labelled 'Other' in Figure 1C

**Supplemental Table 5.** Specialties labelled 'Other' in Fig 1D

**Supplemental Figure 1:** Geographical location of Welsh Local Health boards and their associated descriptive demographic data.

**Supplemental Figure 2:** Algorithm for generating e-alerts for Acute Kidney Injury based on serum creatinine (SCr) changes with time.

**Supplemental Table 1.** Staging of AKI

Stage	Serum creatinine
1	1.5 -1.9 times baseline or $\geq 26\mu\text{mol/L}$ increase
2	2.0-2.9 times baseline
3	3.0 times baseline or $\geq 354\mu\text{mol/L}$

**Supplemental Table 2.** E-alert rules.

Rule	Description	Associated alert
1	>26 $\mu$ mol/L increase in creatinine in previous 48 hours	<i>Acute Kidney Injury alert: rising creatinine within last 48 hours</i>
2	>50% increase in creatinine in previous 7 days	<i>Acute Kidney Injury alert: rising creatinine within last 7 days</i>
3	>50% increase in creatinine against median result for previous 8-365 days	<i>Acute Kidney Injury alert – creatinine increase over baseline value</i>

**Supplemental Table 3.** AKI e-alert codes and their corresponding triggers, AKI rules, AKI stages

E-alert code	Trigger	AKI rule	AKI stage
DELTA1	D>26 $\mu$ mol/L and no other rule triggered	1	1
ABS1	C1/RV1>C1/RV2 and C1/RV1 $\geq$ 1.5 and C1>354 $\mu$ mol/L	2	3
ABS2	C1/RV2>C1/RV1 and C1/RV2 $\geq$ 1.5 and C1>354 $\mu$ mol/L	3	3
R1AKI1	C1/RV1>C1/RV2 and C1/RV1 $\geq$ 1.5 and C1/RV1<2.0	2	1
R1AKI2	C1/RV1>C1/RV2 and C1/RV1 $\geq$ 2.0 and C1/RV1<3.0	2	2
R1AKI3	C1/RV1>C1/RV2 and C1/RV1 $\geq$ 3.0	2	3
R2AKI1	C1/RV2>C1/RV1 and C1/RV2 $\geq$ 1.5 and C1/RV2<2.0	3	1
R2AKI2	C1/RV2>C1/RV1 and C1/RV2 $\geq$ 2.0 and C1/RV2<3.0	3	2
R2AKI3	C1/RV2>C1/RV1 and C1/RV2 $\geq$ 3.0	3	3

D, Difference between C1 and lowest previous serum creatinine (SCr) value within 48 hours; C1, Index SCr value (current result entered and authorised on the LIMS); RV1, Reference value 1, lowest SCr value existing within previous 7 days; RV2, Reference value 2, median of SCr values existing within previous 8-365 days.

**Supplemental Table 4.** Specialties labelled 'Other' in Figure 1C

Specialty	N AKI episodes	%
Thoracic Medicine	85	1.45%
Medical Oncology	82	1.40%
Rheumatology	65	1.11%
Nephrology	54	0.92%
Endocrinology	45	0.77%
GP Other	30	0.51%
Cardiothoracic Surgery	29	0.50%
Rehabilitation	27	0.46%
Gynaecology	25	0.43%
Chemical Pathology	25	0.43%
Clinical Pharmacology and therapeutics	24	0.41%
Anaesthetics	17	0.29%
Palliative Medicine	15	0.26%
Pain Management	14	0.24%
Old Age Psychiatry	14	0.24%
Obstetrics (for patients using a bed)	13	0.22%
Dermatology	13	0.22%
Mental Illness	12	0.21%
ENT	10	0.17%
Paediatrics	9	0.15%
Ophthalmology	6	0.10%
Neurology	6	0.10%
Plastic Surgery	6	0.10%
Oral Surgery	5	0.09%
Not Known	5	0.09%
Obstetrics PN (outpatients)	4	0.07%
Haematology (non-clinical)	4	0.07%
Arts therapist	4	0.07%
Radiology	4	0.07%
Obstetrics AN (outpatients)	3	0.05%
Mental Handicap	2	0.03%
Community Medicine	2	0.03%
Genito Urinary Medicine	2	0.03%
Clinical Immunology and Allergy	2	0.03%
Midwifery	1	0.02%
General Pathology	1	0.02%
Restorative Dentistry	1	0.02%

**Supplemental Table 5.** Specialties labelled 'Other' in Fig 1D

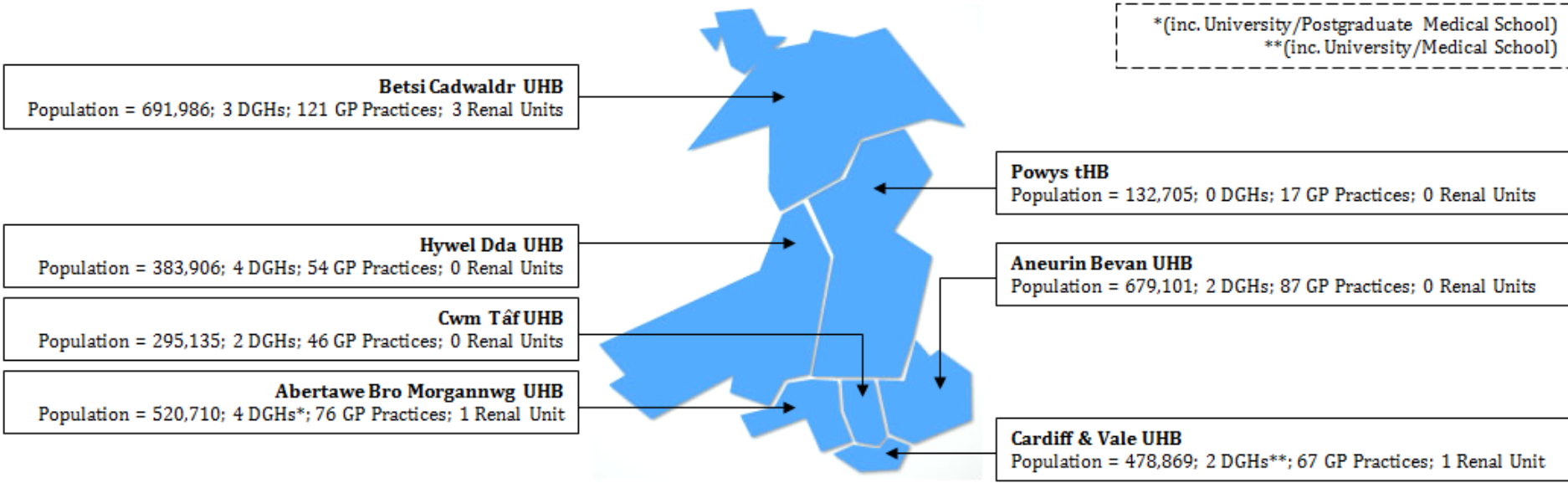
Specialty	N of AKI episodes	%
Haematology (Clinical)	135	2.05%
Endocrinology	117	1.77%
Rehabilitation	95	1.44%
Obstetrics (for patients using a bed)	81	1.23%
Gynaecology	79	1.20%
Accident & Emergency	62	0.94%
Old Age Psychiatry	59	0.89%
Nephrology	59	0.89%
GP Other	50	0.76%
Clinical Oncology	47	0.71%
Neurosurgery	27	0.41%
Mental Illness	23	0.35%
Clinical Pharmacology and therapeutics	17	0.26%
ENT	16	0.24%
Paediatrics	15	0.23%
Medical Oncology	12	0.18%
Neurology	9	0.14%
Oral Surgery	7	0.11%
Plastic Surgery	7	0.11%
Community Medicine	6	0.09%
Rheumatology	4	0.06%
Dermatology	4	0.06%
Chemical Pathology	3	0.05%
Clinical Genetics	3	0.05%
Ophthalmology	2	0.03%
General Pathology	2	0.03%
Midwifery	2	0.03%
Restorative Dentistry	1	0.02%
Genito Urinary Medicine	1	0.02%
Psychotherapy	1	0.02%
Radiology	1	0.02%
Palliative Medicine	1	0.02%
Obstetrics AN (outpatients)	1	0.02%
Pain Management	1	0.02%
Mental Handicap	1	0.02%

**Supplemental Figure Legends:**

**Supplemental Figure 1:** Geographical location of Welsh Local Health boards and their associated descriptive demographic data. UHB, University Health Board; tHB, Teaching Health Board; DGH, District General Hospital; GP, General Practitioner.

**Supplemental Figure 2:** Algorithm for generating e-alerts for Acute Kidney Injury based on serum creatinine (SCr) changes with time. RV, Reference value, defined as the SCr value with which the index SCr value is compared; D, difference between current and lowest previous result within 48 hours; RI, Population reference interval.

**SUPPLEMENTARY FIGURE 1**





**SUPPLEMENTARY FIGURE 2**

