

West Midlands AKI data returns

KQuIP event 23/3/17

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Patient Safety Alert

Stage Three: Directive *Standardising the early identification of Acute Kidney Injury*

9 June 2014

Alert reference number: NHS/PSA/D/2014/010

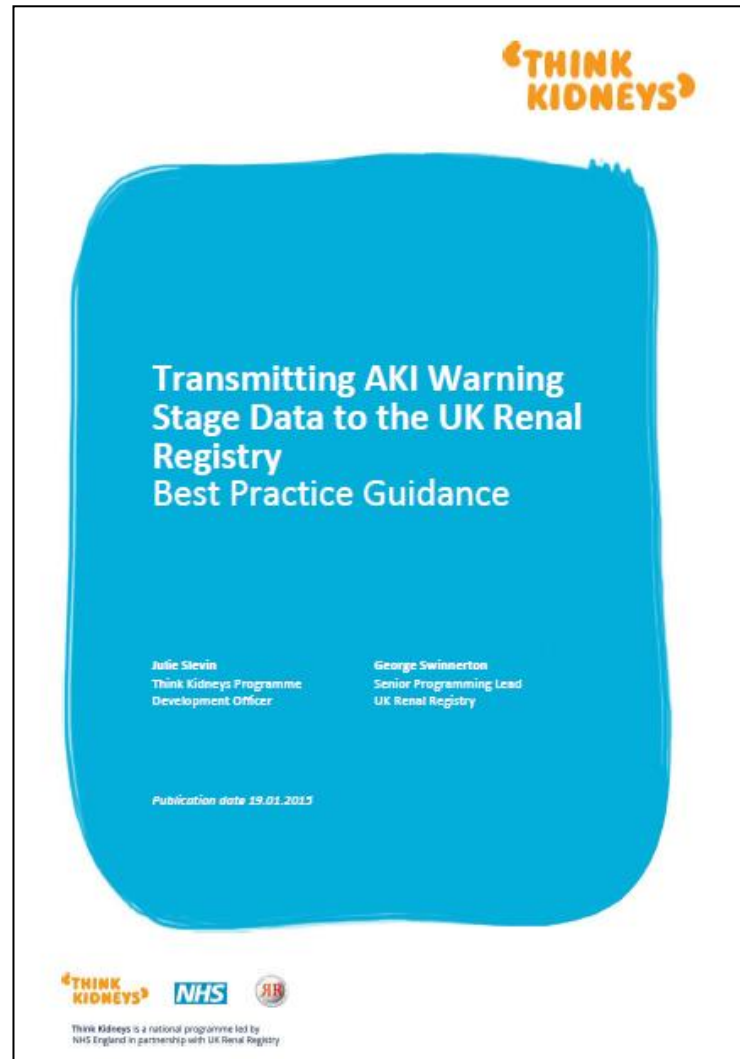
- Agreed AKI Identification Algorithm for implementation across NHS
- Integration into Laboratory Information Management Systems (LIMS)
- Real time reporting via local patient management systems
- Data submission for national monitoring

Actions

Who: NHS acute trusts and foundation trusts providing pathology services

When: By 9 March 2015

AKI data specification





Data specification – warning grade

Data Item	Data Format	Notes
NHS Number	String	
Local Patient Identifier	String	If NHS Number not available
Forename	String	
Surname	String	
Sex	M/F/U	
DOB	Date	
Address 1	String	
Address 2	String	
Address 3 (Town)	String	
Address 4 (County)	String	
Post Code	String	
Lab Code	String	ODS Code of Processing Lab
Specimen Number	String	
Source of Request	String	ODS Code if possible or text
Inpatient/Outpatient/Community Care Indicator Field	IP/OP/COM	If the system cannot distinguish between Outpatient and Community (Inc. GP) requests they should be coded as OP.
Date/Time of Alert Triggering Sample	Datetime	Date used in the AKI Algorithm
AKI Warning Stage Test Result	1/2/3	
Serum Creatinine Result (umol/l)	Decimal	The result associated with the alert
eGFR by MDRD Result	Decimal	The result associated with the alert
eGFR by CKD EPI Result	Decimal	If being used in place of eGFR by MDRD



AKI data returns, end July 2015

Lab Name	Lab Code	No. of alerts	Correct format?	Notes
AIREDALE NHS FOUNDATION TRUST LABORATORY	697C0	540	✓	
BRADFORD ROYAL INFIRMARY LABORATORY	690H0	3149	✗	Address only filled in address line 1, IP/OP indicator field contains
BROOMFIELD HOSPITAL LABORATORY	692V0	717	✓	All OP?
★ CHELTENHAM GENERAL HOSPITAL	691C0	1468	✗	OP/IP indicators contains GP
CHRISTIE HOSPITAL LABORATORY	696F0	239	✓	Sent in AKItests rows
COUNTY HOSPITAL LABORATORY	69240	1569	✗	OP/IP indicators contains U
DIANA, PRINCESS OF WALES HOSPITAL LAB	696J0	5785	✓	* in egfr field
DONCASTER ROYAL INFIRMARY LABORATORY	69180	750	✓	
FAZAKERLEY HOSPITAL LABORATORY	69020	2204	✗	IP/OP indicator field contains other values, Character values in Cr
HULL & EAST YORKSHIRE PATHOLOGY SERVICES	69460	758	✗	Address only filled in address line 1, IP/OP indicator field contains
LEEDS GENERAL INFIRMARY LABORATORY	695N0	2877	✗	Address only filled in address line 1, IP/OP indicator field contains
MEDWAY MARITIME HOSPITAL LABORATORY	692T0	3015	✗	Character values in creatinine and Egfr, IP/OP indicator field
NORFOLK & NORWICH HOSPITAL LABORATORY	69330	3059	✓	
NORTHERN GENERAL HOSPITAL LABORATORY	693	4158	✗	Character values in creatinine and Egfr, IP/OP indicator field
★ POOLE GENERAL HOSPITAL LABORATORY	693S0	6886	✗	IP/OP indicator field contains "COM"
★ PORTSMOUTH PATHOLOGY SERVICE	697	1777	✗	IP/OP indicator field contains "DP"
ROYAL LIVERPOOL UNIVERSITY HOSPITAL LAB	69470	2904	✓	All IP?
SALFORD ROYAL MICROBIOLOGY DEPARTMENT	697T0	2770	✓	
★ SOUTHAMPTON GENERAL HOSPITAL LABORATORY	694X0	1687	✗	Character values in Egfr, IP/OP indicator field contains other
★ SPS MUSGROVE PARK HOSPITAL	697M0	3096	✗	IP/OP indicator field contains other values
ST JAMES'S UNIVERSITY HOSP LABORATORY	696B0	4916	✗	Address only filled in address line 1, IP/OP indicator field contains
THE ROYAL BOLTON HOSPITAL LABORATORY	690F0	1919	✗	Addresses not filled in correct lines, IP/OP indicator field contains
UHSM NHS FOUNDATION TRUST LABORATORY	694T0	1867	✗	IP/OP indicator field contains "COM"
UNIVERSITY HOSP BIRMINGHAM LABORATORY	695Q0	4223	✓	
	698E0	110	✓	
	Missin			
Missing	g	14	-	Remove from analysis, all fields black (except PII fields)

So, 25 from a total number of labs ~ 180

AKI by stage 2015

Total number of cases = 62,436

- AKI level 1 = 39,004 (62%)
- AKI level 2 = 11,575 (18%)
- AKI level 3 = 11,857 (19%)



AKI stage	Sex (% M)	Age (Median, IQR)
1	50.57	73.09 (58.97, 82.82)
2	51.36	71.83 (58.38, 81.7)
3	59.66	70.65 (57.74, 80.41)

National data return Apr 2015-Jan 2017: Restricted to patients first AKI alert

Total number of labs: 84

Total number of alerts: 1,273,714

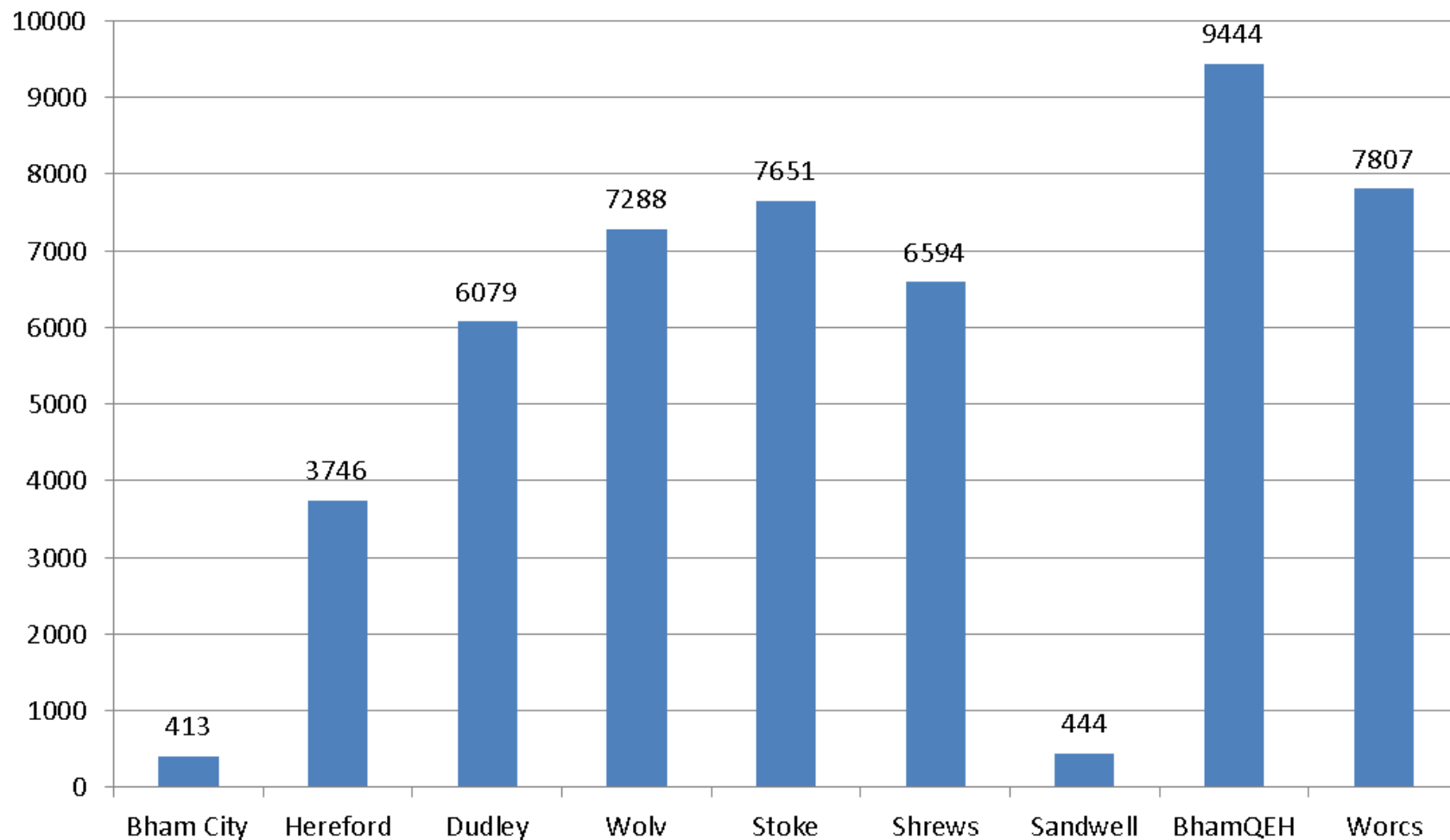
Total number of patients with NHS no.s : 390,960

Data Item	% Complete
NHS no	99.06
Sex	99.99
DOB	99.92
Postcode	97.19
Care Ind	96.19
AKI stage	99.94
eGFR (either CKD EPI or MDRD)	83.06
Creatinine	99.07

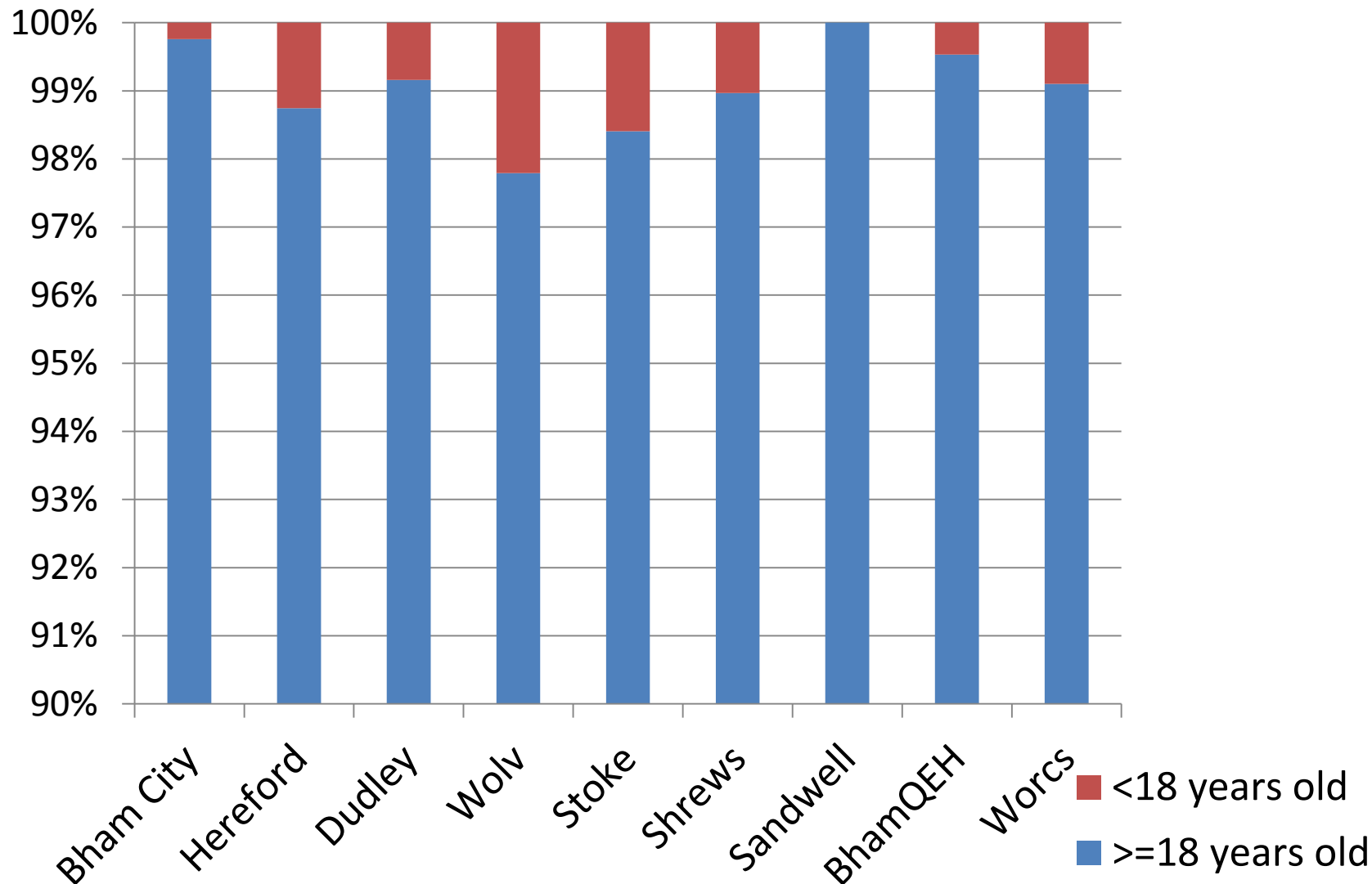
W Midlands AKI return data

Lab Name	Lab Code	Returns from
CITY HOSPITAL NHS TRUST	69100	Dec 15
HEREFORD COUNTY HOSPITAL	69240	Apr 15
RUSSELLS HALL HOSPITAL	69190	Jun 15
NEW CROSS HOSPITAL	694F0	May 15
NORTH STAFFORDSHIRE HOSPITAL	69390	Feb 16
ROYAL SHREWSBURY HOSPITAL	694A0	Apr 15
SANDWELL GENERAL HOSPITAL	694K0	Dec 15
UNIVERSITY HOSP BIRMINGHAM	695Q0	Apr 15
WORCESTER ROYAL HOSPITAL	69650	Jul 15

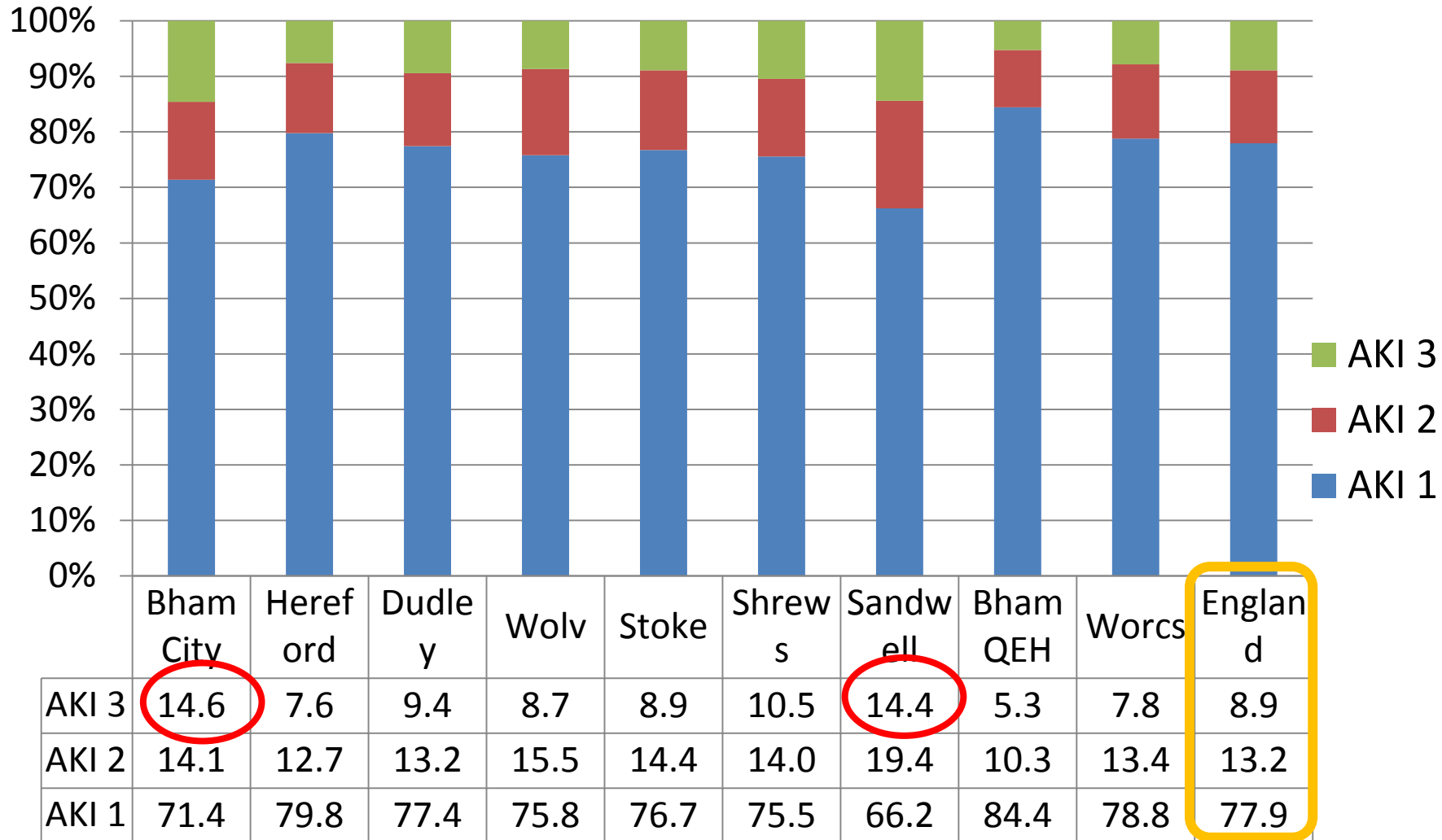
AKI alerts: Apr 2015-Jan 2017 (restricted to patients first alert)



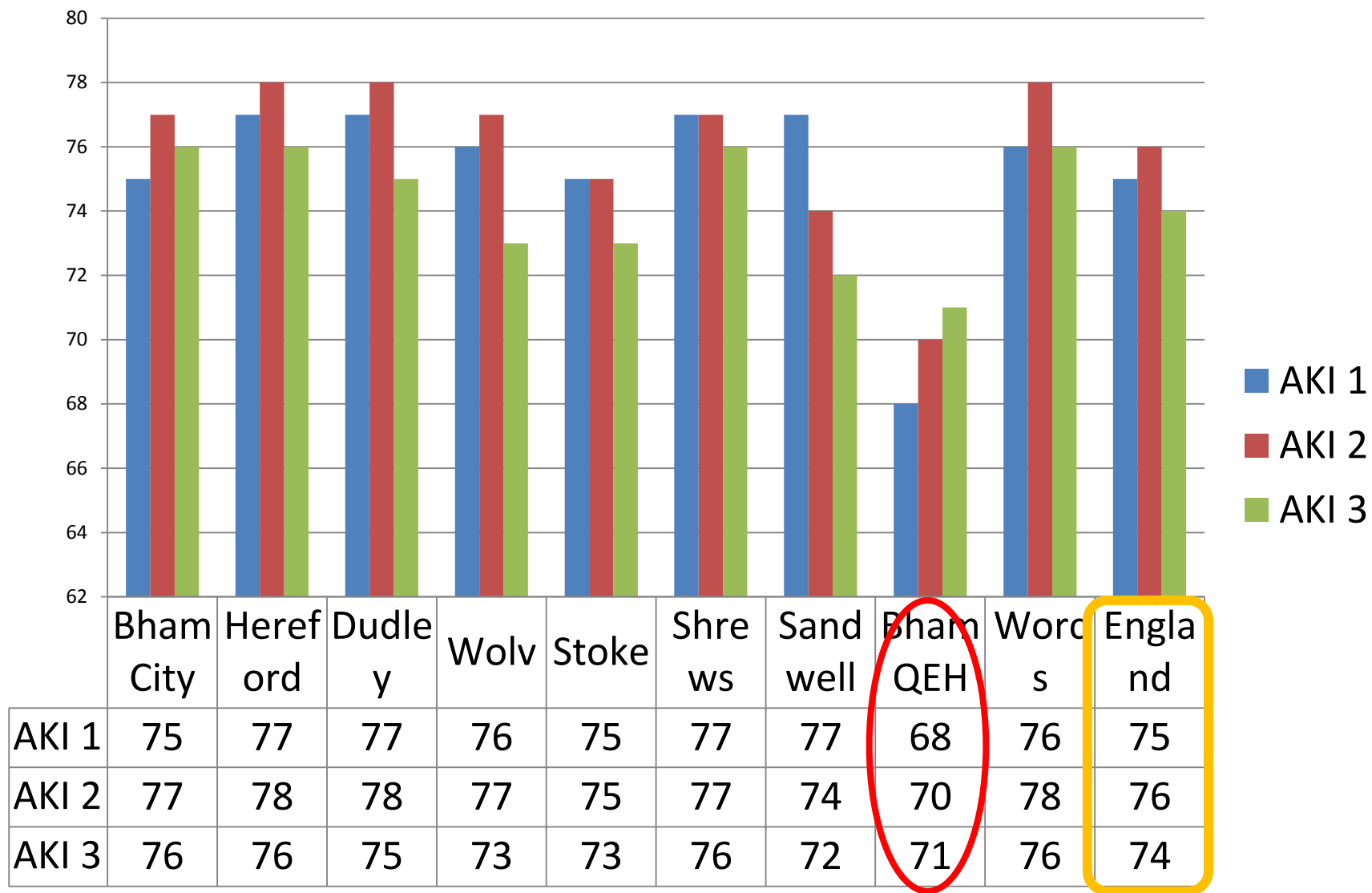
W Mids AKI data: adult vs <18 y



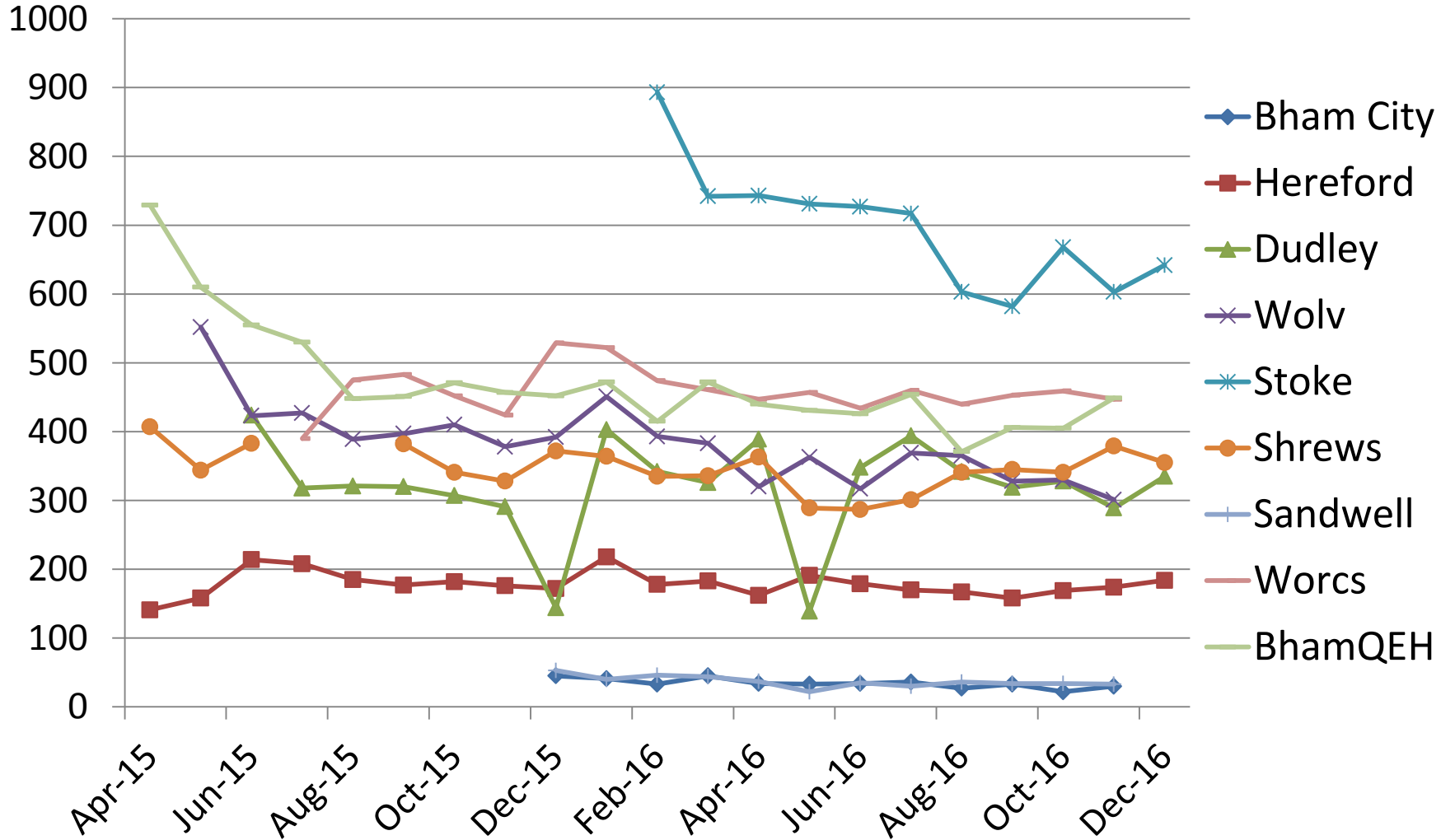
W Mids AKI data by stage



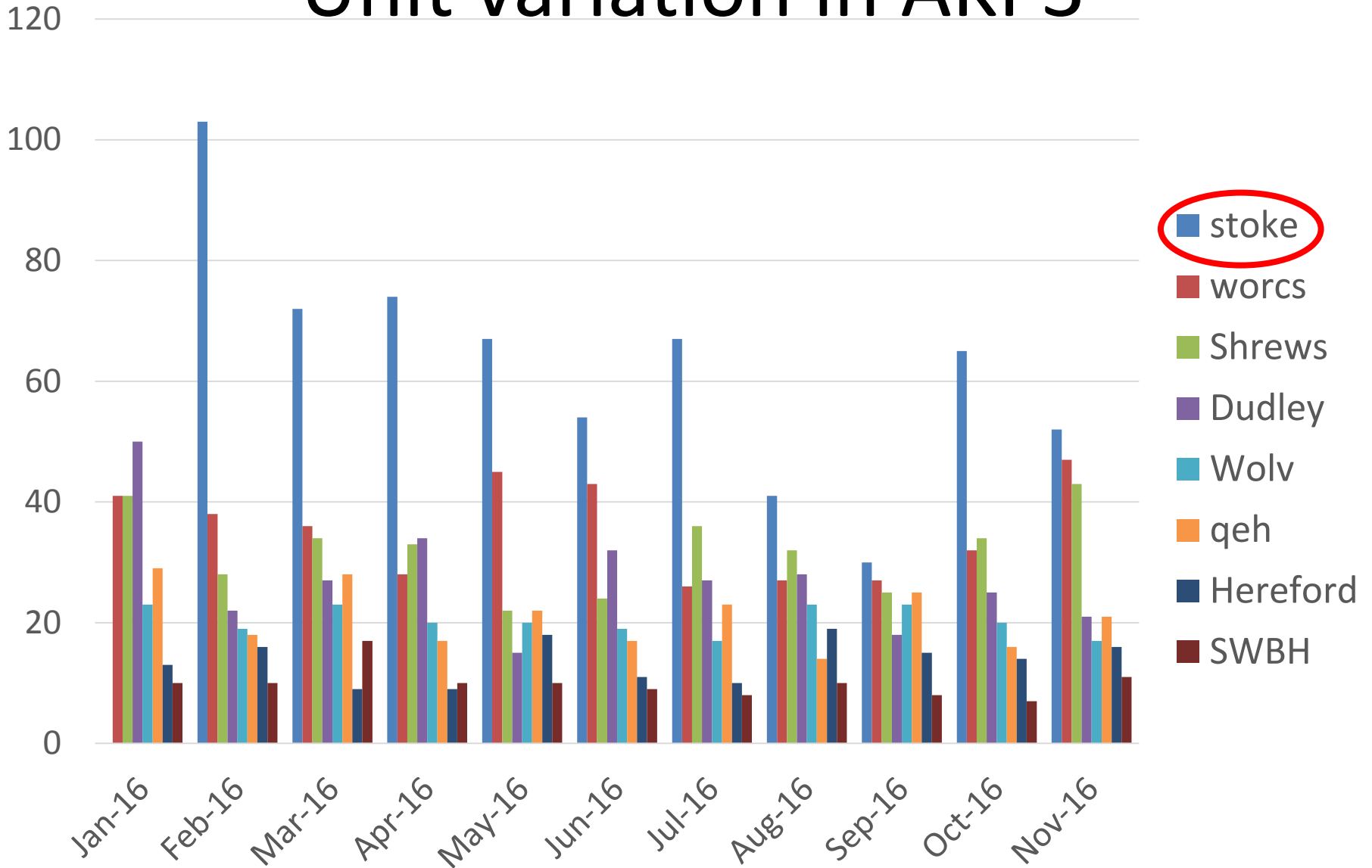
AKI stage: median age



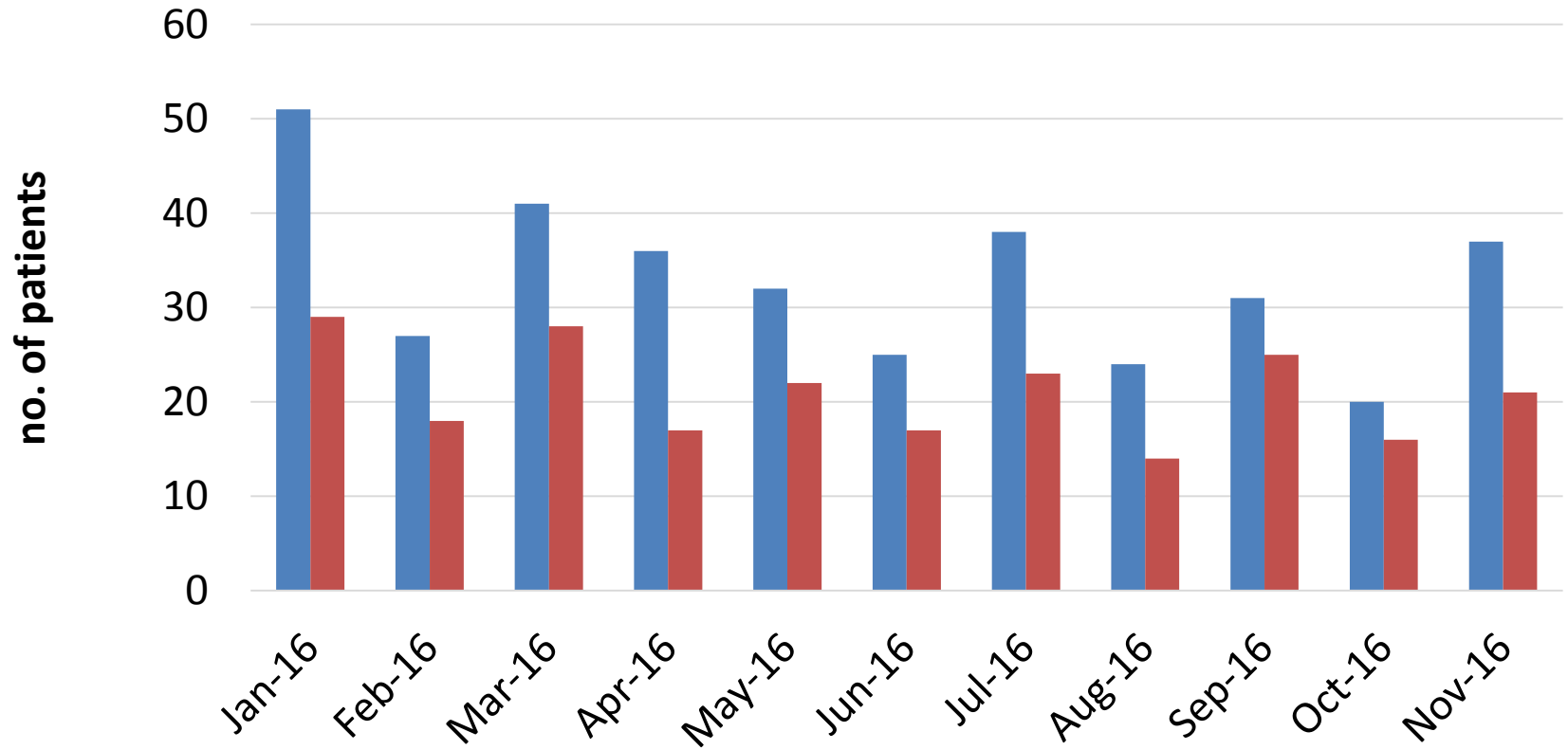
W Mids AKI 1-3 returns



Unit variation in AKI 3



QEH AKI 3 unique patients 2016: submitted vs returned data



	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16
■ QE date	51	27	41	36	32	25	38	24	31	20	37
■ UKRR data	29	18	28	17	22	17	23	14	25	16	21

UKRR Haemodialysis for AKI and 'acute-on-chronic'

- 1693 UK patients with acute HD-sessions in 2015
- 37% of 1693 went onto chronic RRT in 2015

W Mids Acute HD data from UKRR 2015

centre	Total no. incident patients	No. starting as chronic	No. starting as acute	No. starting as acute: no HD-sessions data	No. starting as acute: HD-sessions data
B Heart	122	105	17	1	16
B QEH	247	196	51	23	28
Covnt	109	98	11	1	10
Dudley	49	37	12	3	9
Shrew	65	50	15	0	15
Wolve	83	70	13	4	9
total	675	556	119		

Acute HD data from UKRR 2015:

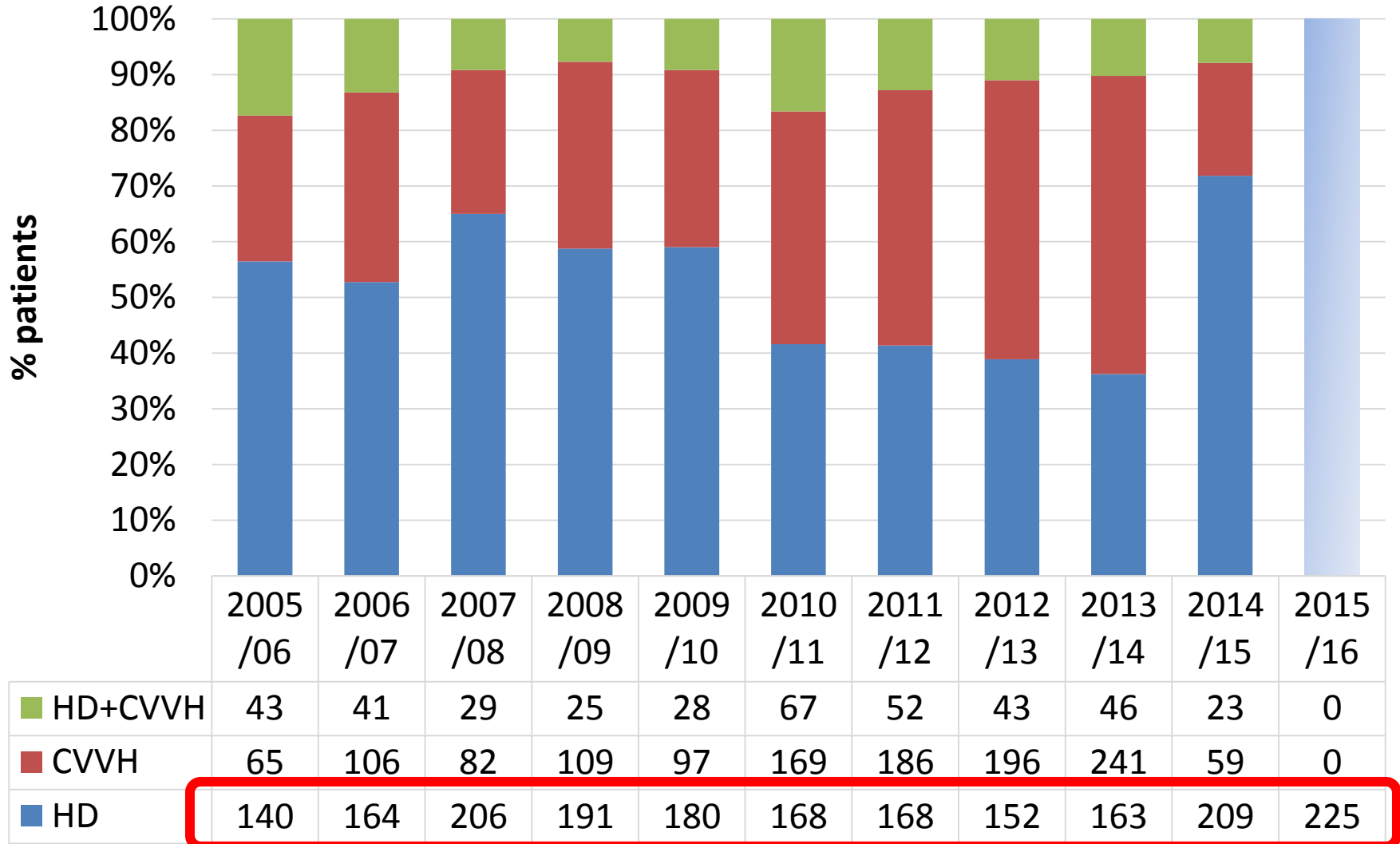
Centre	No of patients	No of acute sessions	% period submitted			
			Q1	Q2	Q3	Q4
B Heart	19	157		49.0	8.3	42.7
B QEH	32	219			49.8	50.2
<i>Covnt</i>	<i>44</i>	<i>418</i>	<i>7.7</i>	<i>19.1</i>	<i>45.7</i>	<i>27.5</i>
<i>Dudley</i>	<i>40</i>	<i>371</i>		<i>38.3</i>	<i>22.9</i>	<i>38.8</i>
<i>Shrew</i>	<i>65</i>	<i>367</i>		<i>30.8</i>	<i>43.1</i>	<i>26.2</i>
<i>Wolve</i>	<i>55</i>	<i>351</i>		<i>29.3</i>	<i>29.6</i>	<i>41.0</i>
UK	1,693	12,363	10.8	32.2	28.8	28.2

Acute HD data from UKRR 2015: completeness

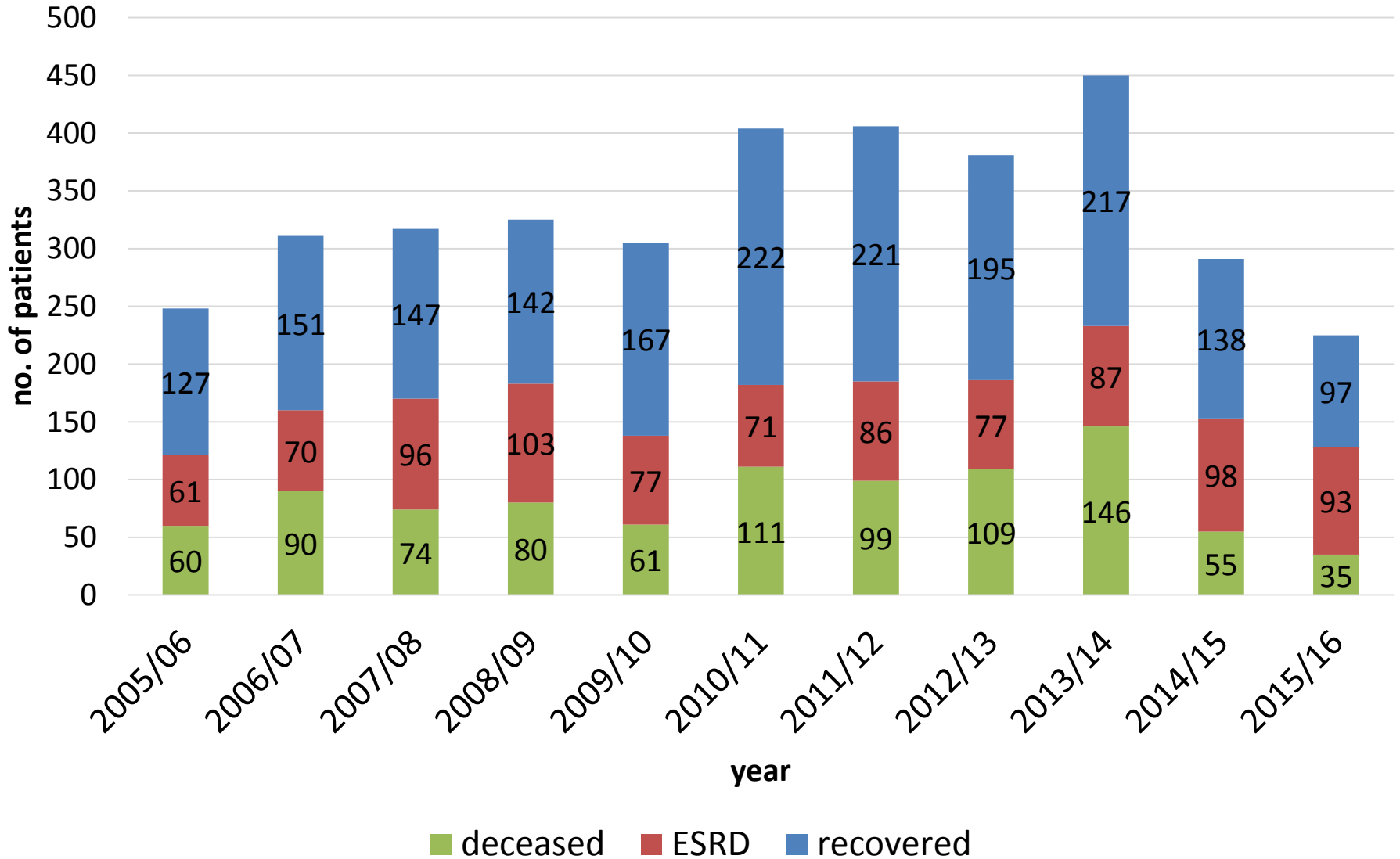
Centre	% completeness					
	PRE weight	Post weight	pre-SBP	post-SBP	pre-DBP	post-DBP
B Heart	49.0	40.1	99.4	97.5	99.4	96.8
B QEH	63.0	54.3	100.0	99.5	99.5	99.5
<i>Covnt</i>	<i>54.1</i>	<i>41.6</i>	<i>99.5</i>	<i>98.6</i>	<i>99.5</i>	<i>98.6</i>
<i>Dudley</i>	<i>63.1</i>	<i>56.9</i>	<i>100.0</i>	<i>99.5</i>	<i>98.9</i>	<i>99.5</i>
<i>Shrew</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Wolve</i>	<i>29.3</i>	<i>25.9</i>	<i>97.4</i>	<i>96.9</i>	<i>95.4</i>	<i>96.9</i>
Total	39.9	31.0	75.9	72.1	75.6	72.0

Local data: RRT for AKI @ QEH

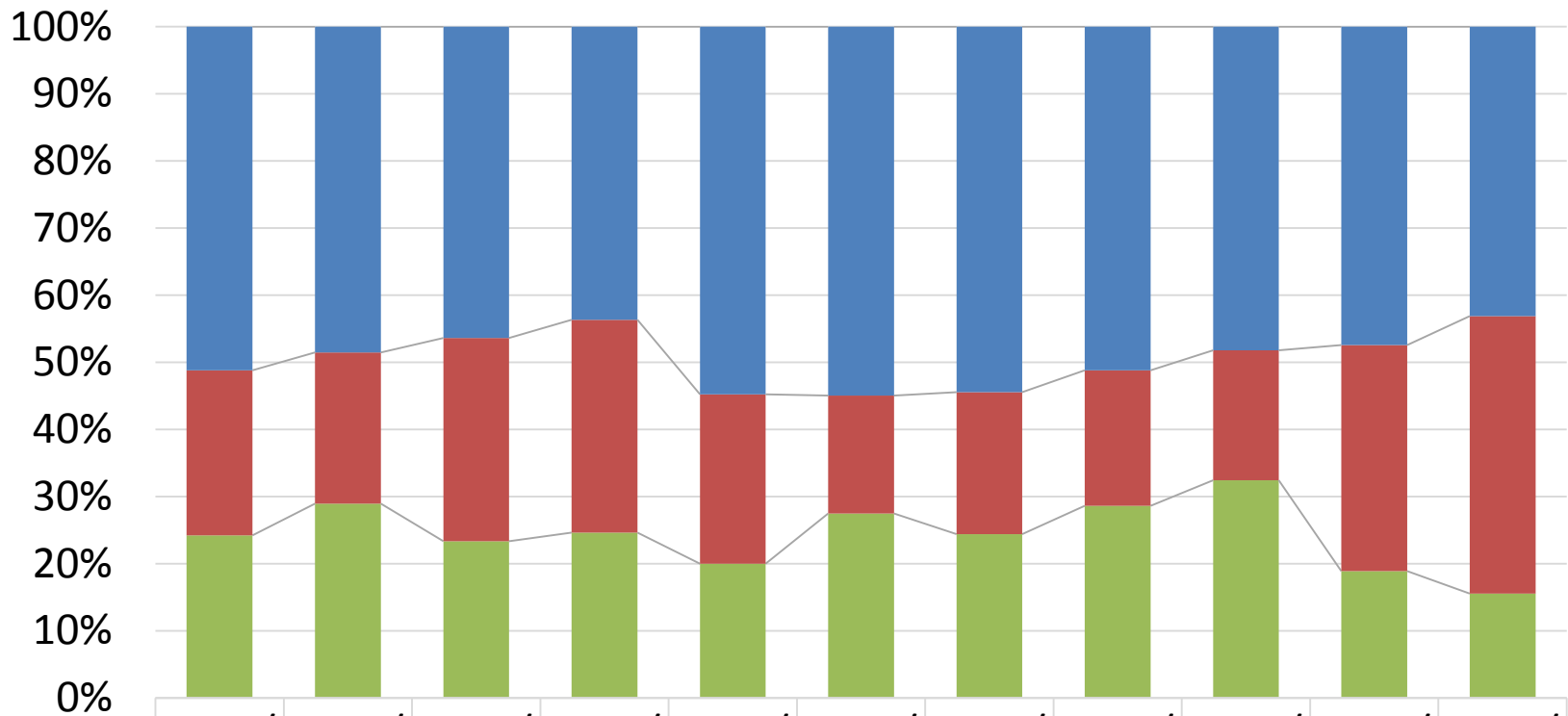
Acute RRT QEH (renal unit + ICU): % modality



Acute RRT QEH (renal unit + ICU)



Acute RRT QEH: % outcome



	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15	2015/ 16
recovered	127	151	147	142	167	222	221	195	217	138	97
ESRD	61	70	96	103	77	71	86	77	87	98	93
deceased	60	90	74	80	61	111	99	109	146	55	35

Acute RRT QEH: HD only or HD+CVVH

