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Analysis of research and education indicators to support designation of Academic Health Science Centres in England

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Executive summary

The Department of Health (DH) announced an open competition in April 2013 to designate Academic Health Science Centres (AHSCs) in England. The DH awarded AHSC status to institutions in England for the first time in March 2009. To support the current competition the DH commissioned RAND Europe to compile and analyse various types of publicly available data and quality assessments in the domains of medical research and health education. This report primarily focuses on medical schools/academic partners likely to seek AHSC status but, where available, an analysis of research and education quality metrics has also been presented for NHS institutions in England.

This report presents the results of the analysis in the form of summary ‘tables of excellence’. A consolidated table showing the research and education domain ranking lists is presented below (Table ES-1). To provide an impression of the relative performance of the listed institutions across the research and education domains, a colour code is applied to each indicator ranking list in the table.

A detailed bibliometric analysis of health-related research publications has also been carried out and is presented. To support consideration of the tables, the report provides an overview of the publicly available data and outlines the significant caveats to using the data to produce education and research ranking lists for candidate institutions. The appendices describe the source data in more detail, and also list some of the strengths and weaknesses of each particular indicator.

It should be noted that the analysis is not intended to provide a definitive shortlist of institutions. There are a series of caveats about the methods we have used that should be borne in mind when reviewing the results presented. Our analysis is perhaps overly selective in that we have only examined the performance of universities with medical schools, whereas partnerships of any NHS provider/university in England that judge themselves able to demonstrate characteristics for AHSCs and to meet the published designation criteria may submit a pre-qualifying questionnaire. A more serious concern is that most of the indicators are proxies for quality. Because we are depending on pre-existing indicators, the unit of analysis for which the indicator is compiled is sometimes not the same as our unit of analysis. Furthermore, some of the indicators that have been used as quality measures in either the education or research domains are actually basket indicators that span both domains. Related is the issue of multiple counting of indicators across the research and education domains. Another key issue that must be noted while interpreting the results is that using rankings emphasises the differences between institutions that are similar in performance and vice versa.

Possibly the most significant weakness of the approach is where we have had to combine sub-indicators for each institution to provide a single institutional indicator for ranking. In these instances, we have had to generate our own rankings by devising a way to combine an institution's scores into one indicator. Because there is no accepted way of combining an institution's scores, this leaves us open to the criticism that we have used an arbitrary or inappropriate method of combination. Furthermore, university ranking lists that are compiled on a rolling basis are subject to temporal fluctuations (in part due to changes in the methodologies that have been applied to arrive at the rankings). We have not carried out any time series analysis of the ranking data and have restricted our analysis to the most recently available data. Finally, we also note that there are a number of well-known limitations to bibliometric analyses and our results need to be considered within that context.

Given the various caveats and the requirements to balance two domains of activity (research and education), the ranking methodology presented in this report can be used in an 'advisory' capacity to provide a general indication of the quality of the candidate AHSC institutions. The analysis is intended to assist potential applicants in deciding whether to submit a pre-qualifying questionnaire as part of the procurement process, and subsequently to inform the deliberations of the selection panel for the AHSCs.

Table ES-1: An indicative alphabetical institutional ranking list for the research and education indicators (rank 1–5: green cell; rank 6–10: yellow cell; rank 11–20: blue cell)

University / Institution (abbreviated)	University / Institution	Medical School	RESEARCH QUALITY INDICATORS									EDUCATION QUALITY INDICATORS						University / Institution (abbreviated)
			Total number of HCPs (2002–11)	RAE 2008 average 4* ratings (UOAs 1–13)	QR mainstream funding 2012–13 (UOAs 1–13)	Income from research grants and contracts (2011–12)	Number of PhDs (2011–12)	Number of patents granted (2011–12)	ARWU in Clinical Medicine and Pharmacy (2012)	Webometrics World University Rankings (2013)	QS World University Rankings for Medicine (2012)	Times Good University Guide – Medicine Rankings (2013)	Guardian University Guide – Medicine Rankings (2013)	Complete University Guide (Daily Mail) – Medicine Rankings (2013)	THE World University Rankings for Clinical, Pre-Clinical and Health (2012–13)	National Student Survey (2012)	National Training Survey (2012)	
Birmingham	University of Birmingham	College of Medical and Dental Sciences	9	14	8	10	8	11	11	13	11	13	22	7	-	6	5	Birmingham
Brighton	University of Brighton	Brighton and Sussex Medical School	28	24	23	26	27	21	-	26	-	21	18	25	-	25	16	Brighton
Bristol	University of Bristol	Faculty of Medicine and Dentistry	7	18	16	12	12	8	7	11	7	20	25	14	-	11	13	Bristol
Cambridge	University of Cambridge	School of Clinical Medicine	4	5	5	4	4	5	1	1	2	2	1	1	2	3	25	Cambridge
East Anglia	University of East Anglia	Norwich Medical School	21	25	20	23	17	21	-	21	-	25	20	22	-	9	14	East Anglia
Exeter	University of Exeter	Exeter Medical School (formerly part of Peninsula College of Medicine and Dentistry)	20	26	25	19	18	15	-	22	19	11	10	11	-	17	1	Exeter
Hull	University of Hull	Hull York Medical School	25	8	22	25	22	8	-	25	-	6	7	8	-	6	3	Hull
Imperial College	Imperial College London	Faculty of Medicine	3	2	2	3	2	2	4	14	3	4	9	4	3	20	18	Imperial College
Keele	Keele University	School of Medicine	26	23	27	24	28	21	-	27	-	26	23	24	-	2	N/A	Keele
King's College	King's College London	School of Medicine	5	6	3	5	5	4	6	10	5	15	15	18	5	23	24	King's College
Lancaster	Lancaster University	Lancaster Medical School	27	15	26	28	24	15	-	16	-	N/A	N/A	N/A	-	21	N/A	Lancaster
Leeds	University of Leeds	School of Medicine	14	16	15	9	10	11	16	7	9	10	13	11	-	17	21	Leeds
Leicester	University of Leicester	Department of Medical and Social Care Education	16	22	17	17	14	15	-	17	20	14	5	14	-	1	12	Leicester
Liverpool	University of Liverpool	School of Medicine	11	13	13	7	13	15	9	18	12	23	24	21	-	22	10	Liverpool
LSHTM	London School of Hygiene and Tropical Medicine	London School of Hygiene and Tropical Medicine (postgraduate medical school)	8	1	7	8	19	21	14	24	18	N/A	N/A	N/A	N/A	N/A	N/A	LSHTM
Manchester	The University of Manchester	Manchester Medical School	6	7	6	6	3	5	8	5	6	18	17	14	6	24	20	Manchester
Newcastle	Newcastle University	Newcastle University Medical School	10	12	9	13	10	15	15	12	15	5	4	5	-	5	9	Newcastle
Nottingham	The University of Nottingham	Faculty of Medicine and Health Sciences	12	17	12	14	6	8	5	8	10	17	14	19	-	6	8	Nottingham
Oxford	The University of Oxford	Medical Sciences Divison	2	4	4	1	7	1	3	2	1	1	2	2	1	11	22	Oxford
Plymouth	Plymouth University	Peninsula Schools of Medicine and Dentistry (formerly part of Peninsula College of Medicine and Dentistry)	23	28	24	27	22	21	-	23	-	11	10	11	-	14	1	Plymouth
Queen Mary	Queen Mary, University of London	Barts and The London School of Medicine and Dentistry	19	11	11	11	16	11	12	19	14	8	5	6	-	16	7	Queen Mary
Sheffield	The University of Sheffield	The Medical School	13	19	10	15	9	21	10	9	8	9	16	10	-	4	6	Sheffield
Southampton	University of Southampton	Faculty of Medicine	15	10	14	16	15	5	13	4	13	15	21	20	-	19	15	Southampton
St George's	St George's, University of London	St George's, University of London	24	27	21	21	24	21	-	28	-	24	26	22	-	27	11	St George's
Sussex	University of Sussex	Brighton and Sussex Medical School	22	21	28	22	24	15	-	20	-	21	18	25	-	13	16	Sussex
UCL	University College London	UCL Medical School	1	3	1	2	1	3	2	3	4	3	3	3	4	15	23	UCL
Warwick	The University of Warwick	Warwick Medical School	18	20	19	18	20	11	-	6	17	19	12	17	-	25	19	Warwick
York	The University of York	Hull York Medical School	17	9	18	20	20	21	-	15	15	6	7	8	-	9	3	York