The UK Medical Education Database – Where from, where going and why?

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Education Data Development Manager  
GMC
UKMED team

- Chair – Prof Steve Thornton
- Chair Research Group – Prof Jon Dowell
- Senior Responsible staff – Katie Petty Saphon (MSC) and Kirsty White (GMC)
- Secretariat (Olga Sierocinska King at MSC)
- Website (Ed Knight MSC)
- GMC Data team (Daniel Smith, Pete McNair and Ganesan Gurusamy)
- GMC IG Team (Andrew Ledgard and Thomas Oppé)

- We are grateful to all members of the Advisory Board, the Research Group and all data contributors.

NOTE: The GMC is Data Controller and responsible for compliance with the Data protection Act.
UKMED – Where from?

- UK Clinical Aptitude test – first testing 2006
- UKCAT Database and Research Group – took a while, learnt a lot
- First UKCAT publications
  - Tiffin et al. Widening access to medical education for under-represented socioeconomic groups: *Brit Med J* 2012;344:e1805
  - McManus et al. The UKCAT-12 study. *BMC Medicine* 2013, 11:244
- UKMED proposed to MSC/GMC in 2011
UKMED – Where going?

- Cumulative linked data from applications to medical school from 2006 through to postgraduate training outcomes.
- A governance framework to support researchers' use of data extracts.
- A method of sharing data with researchers that is fully compliant with the Data Protection Act and free to users as GMC underwriting data costs.
- Limited access to selected data for approved users under contract.
Currently data for students from 2007 to 2014 - N > 63,000

Undergraduate Education (4–6 years)

Foundation Training (2 years)

Specialty/General Practice Training (3–8 years)

Provisional Registration

Application: Provisional Registration

Full Registration

Application: Full Registration

Specialist/GP Registration

Application: Specialist/GP Registers

Fitness to practise?

Annual Review outcomes

Specialty/GP exam results

Selection tests: - BMAT UKCAT GAMSAT and level 3 qualifications

Application for foundation training Inc SJT

Selection test: Specialty/GP training

Selection test: (some) higher specialties

Datasets

Dr journey

Application: Provisional Registration

Application: Full Registration

Application: Specialist/GP Registers

Provisional Registration

Undergraduate Education (4–6 years)

Foundation Training (2 years)

Specialty/General Practice Training (3–8 years)
UKMEDI data linking

UKCAT data

GAMSAT data

BMAT data

HESA data defines population starting medical school

GMC Register

GMC NTS census and survey data

ORIEL recruitment data

ARCP outcomes

Medical Royal College Exam data
Privacy controls are not binary but fall on spectra

K > 1 for all quasi-identifiers

- **Access / Environment**
  - Openly identifiable: Free on the internet (Everyone)
  - Safe Haven: Locked in a steel-lined room (Accredited researcher)
  - Governance, accountability and enforcement: Highly legislated

- **Obfuscation**
  - Anonymised to the point of losing valuable content

Data Sharing Agreement with strict legal controls to prevent any attempt to identify. Signed by senior staff and researchers.
### Online data tool

#### Select year(s) of entry to medical school to display

(All)

### Selection the section to see score statistics

- Quantitative Reasoning

#### First Medical School

<table>
<thead>
<tr>
<th>First Medical School</th>
<th>N in UKCAT</th>
<th>Percent in UKCAT</th>
<th>N in UKMED population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aberdeen</td>
<td>1,380</td>
<td>91%</td>
<td>1,512</td>
</tr>
<tr>
<td>Barts</td>
<td>2,530</td>
<td>97%</td>
<td>2,555</td>
</tr>
<tr>
<td>Birmingham</td>
<td>2,996</td>
<td>93%</td>
<td>3,222</td>
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<tr>
<td>Brighton and Sussex</td>
<td>1,078</td>
<td>96%</td>
<td>1,121</td>
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<tr>
<td>Bristol</td>
<td>1,630</td>
<td>93%</td>
<td>1,674</td>
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<tr>
<td>Cambridge</td>
<td>2,096</td>
<td>90%</td>
<td>2,339</td>
</tr>
<tr>
<td>Cardiff</td>
<td>2,364</td>
<td>98%</td>
<td>2,499</td>
</tr>
<tr>
<td>Dundee</td>
<td>1,199</td>
<td>89%</td>
<td>1,344</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>1,789</td>
<td>94%</td>
<td>1,904</td>
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<tr>
<td>Exeter</td>
<td>234</td>
<td>95%</td>
<td>247</td>
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<tr>
<td>Glasgow</td>
<td>1,071</td>
<td>80%</td>
<td>2,124</td>
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<tr>
<td>Hull York</td>
<td>1,115</td>
<td>98%</td>
<td>1,141</td>
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<tr>
<td>Imperial</td>
<td>2,463</td>
<td>92%</td>
<td>2,653</td>
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<tr>
<td>Keele</td>
<td>1,039</td>
<td>97%</td>
<td>1,073</td>
</tr>
<tr>
<td>King’s</td>
<td>3,071</td>
<td>96%</td>
<td>3,194</td>
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<tr>
<td>Lancaster</td>
<td>367</td>
<td>92%</td>
<td>395</td>
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<tr>
<td>Leeds</td>
<td>1,755</td>
<td>91%</td>
<td>1,939</td>
</tr>
<tr>
<td>Leicester</td>
<td>1,939</td>
<td>99%</td>
<td>2,024</td>
</tr>
<tr>
<td>Liverpool</td>
<td>2,201</td>
<td>90%</td>
<td>2,547</td>
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<tr>
<td>Manchester</td>
<td>2,933</td>
<td>94%</td>
<td>3,132</td>
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<tr>
<td>Newcastle</td>
<td>2,449</td>
<td>97%</td>
<td>2,528</td>
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<tr>
<td>Norwich</td>
<td>1,307</td>
<td>99%</td>
<td>1,334</td>
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<tr>
<td>Nottingham</td>
<td>2,353</td>
<td>85%</td>
<td>2,783</td>
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<tr>
<td>Oxford</td>
<td>1,340</td>
<td>93%</td>
<td>1,441</td>
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<tr>
<td>Peninsula</td>
<td>1,308</td>
<td>94%</td>
<td>1,389</td>
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<tr>
<td>Queen’s</td>
<td>2,003</td>
<td>93%</td>
<td>2,146</td>
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<tr>
<td>Sheffield</td>
<td>1,841</td>
<td>99%</td>
<td>1,918</td>
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<tr>
<td>Southampton</td>
<td>1,886</td>
<td>90%</td>
<td>2,087</td>
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<tr>
<td>St Andrews</td>
<td>1,195</td>
<td>88%</td>
<td>1,339</td>
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<tr>
<td>St George’s</td>
<td>1,846</td>
<td>80%</td>
<td>2,102</td>
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<tr>
<td>Swansea</td>
<td>427</td>
<td>75%</td>
<td>573</td>
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<tr>
<td>The University of Bradford</td>
<td>728</td>
<td>80%</td>
<td>967</td>
</tr>
<tr>
<td>UCL</td>
<td>2,331</td>
<td>91%</td>
<td>2,556</td>
</tr>
<tr>
<td>Warwick</td>
<td>1,237</td>
<td>90%</td>
<td>1,370</td>
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<tr>
<td>Grand Total</td>
<td>58,631</td>
<td>92%</td>
<td>63,642</td>
</tr>
</tbody>
</table>

#### UKCAT Score

- 350: [Bar chart showing number of test attempts across different score intervals]
- 375: [Bar chart showing number of test attempts across different score intervals]
- 400: [Bar chart showing number of test attempts across different score intervals]
- 425: [Bar chart showing number of test attempts across different score intervals]
- 450: [Bar chart showing number of test attempts across different score intervals]
- 475: [Bar chart showing number of test attempts across different score intervals]
- 500: [Bar chart showing number of test attempts across different score intervals]
- 525: [Bar chart showing number of test attempts across different score intervals]
- 550: [Bar chart showing number of test attempts across different score intervals]
- 575: [Bar chart showing number of test attempts across different score intervals]
- 600: [Bar chart showing number of test attempts across different score intervals]
- 625: [Bar chart showing number of test attempts across different score intervals]
- 650: [Bar chart showing number of test attempts across different score intervals]
- 675: [Bar chart showing number of test attempts across different score intervals]
- 700: [Bar chart showing number of test attempts across different score intervals]
- 725: [Bar chart showing number of test attempts across different score intervals]
- 750: [Bar chart showing number of test attempts across different score intervals]
- 775: [Bar chart showing number of test attempts across different score intervals]
- 800: [Bar chart showing number of test attempts across different score intervals]
- 825: [Bar chart showing number of test attempts across different score intervals]
- 850: [Bar chart showing number of test attempts across different score intervals]
- 875: [Bar chart showing number of test attempts across different score intervals]
- 900: [Bar chart showing number of test attempts across different score intervals]
UKMED selection data will then include as standard:

- Data on entrants to any UK medical school from 2007
- Prior attainment – A level etc, degrees (via HESA)
- HESA demographics
- Test data – whichever school attended
  - UKCAT
  - BMAT
  - GAMSAT

BMAT data to be added Summer 2017
New data added twice a year

- New cohorts added each year.
- Working to include additional selection data, such as MMIs.
- Growing Postgrad progress and exam data accumulating.
- Career destination data emerging.
Bringing in your own data

It is now possible to bring your data into UKMED.

This is subject to:

• Review of privacy notices to ensure nothing to prevent sharing.
• Suitable identifiers for linking purposes.
• Data available to others, but only after you have used it.
UKMED – Why?

- Medical Education costs +/- £1.5b
- Little systematic R + D investment
- Single centre studies limited utility
- Rare outcomes can be studied
- Adequate power for subgroup analysis
- Selection through to PG outcome research = Holy Grail
- Potential for new types of studies.....
Examples of approved projects

• Impact of accelerated graduate-entry medicine courses?

• “Getting on” in medicine: a study of careers trajectories and decisions.

• How do graduates from gateway compare to standard entry courses?

A full list is available on the UKMED website: www.ukmed.ac.uk
Test case study

Fitness to Practise Declaration Predictors at Provisional Registration

Students declare significant behavioural or health concerns which may impact on FtP at provisional registration:

- 2014: 744/7,464 (4 refused registration).
- 2015: 884/7,522 (6 refused registration).
Aim - Rare sensitive outcomes

1. To identify the educational and demographic predictors of both health and conduct-related declarations.

2. To identify any associated UKCAT non-academic attributes.

3. To test the concept of FtP related studies.
Conduct Results
Might MEARS Self –esteem be a screening tool?  
N = 666

- 4.4% with above average MEARS ‘self-esteem’ score have a conduct-related declaration.
- 2.8% who ‘screened negative’ (below average) have a conduct-related declaration.
- 1.6% absolute risk reduction from such a hypothetical screening process.

The ‘number needed to reject’ is 22 to exclude one student with concerns.
So, if you want to use UKMED?
UKMED annual cycle

UKMED is integrated into GMC annual processes

• Two data loads a year, including the annual extracts from HESA, ARCP, Royal College Exam data etc.
• Two meeting to discuss submitted proposals.
• Two rounds of extracts produced.
• Two rounds of report reviews.
UKMED research process

• Contact Daniel Smith if wishing to include your own data.
• Apply online spring/autumn (next window closes Aug 17)
• Resolve any outstanding issues (e.g. ethics)
• Approved applications receive access to data:
  ✓ After contract signed
  ✓ No cost (unless to cover matching in bespoke data)
  ✓ De-identified (for example data that links to postcode)
  ✓ Via the safe haven – not possible to get data in/out.
  ✓ All analyses released after vetting (can slow process)

For details see - https://www.ukmed.ac.uk/documents/UKMED_research_process.pdf
UKMED research process

• Applications reviewed against set criteria – see online.
• Next research group meets September 2017.
• The Research Group is an independent expert advisory body.
• Makes a recommendation to the Advisory Board (representative).
• Advisory Board approves GMC to release data.
• If rejected reasons made clear but not a peer review service.
UKMED research process

Reports require review by Research Group and Advisory Board

- To verify study achieved aims and did not extend remit.
- Publication will not be blocked but data providers may be advised of sensitive findings.
- Will be made available via website if not published.

NOTE - UKMED does not fund projects!
Advice for applicants

Not all proposals have been approved – Hints:

• Evidence of funding or adequate institutional support
• Single sites or not requiring UKMED matching
• Must demonstrate an understanding of the data
• Statistical expertise required on the team

Contact Daniel Smith to discuss in advance if in doubt
Standard extracts being planned

• To be made available in de-identified form in the safe haven under a contract **only** to organisations with a remit. E.g HEE, NES (i.e. **all normal protections apply** except review by the Research Subgroup).

• Standard datasets to enable descriptive analysis of students and doctors’ movement through training pathways.

• Two extracts proposed:
  ✓ Student profile to monitor widening participation.
  ✓ Career progression to support workforce planning.
E.g. Workforce planning extract

Possible to show:

- Area people lived in when they applied to medical school.
- Area they trained in.
- Area they work in as a GP or Consultant.
Please join the mailing list to receive information on new data sets, application deadlines and so forth.
Please ask Daniel!
Or come to workshop tomorrow