A REPORT
TO THE
COUNCIL OF HEADS OF MEDICAL SCHOOLS

The selection of medical students at British universities in 1996 and 1997

I C McManus

Professor of Psychology and Medical Education

Centre for Health Informatics and Multiprofessional Education
Royal Free and University College Medical School
University College London

Whittington Hospital Campus
Highgate Hill
London N19 5NF, UK

Summary

In April 1998 the Council of Heads of Medical Schools (CHMS) commissioned from Professor Chris McManus a study of data from the Universities and Colleges Admissions Service (UCAS) on applicants to medical schools. The purpose was to establish if there was any evidence from that data of any particular group of applicants being disadvantaged in the admissions process. The study was necessarily limited because in most cases neither the academic information (GCSE grades and predicted 'A' level grades) nor information about the personal attributes of applicants (from the personal statements, school or college references and interviews), on which offers to candidates are based, is available on the UCAS database for analysis. The study looked at the relationship between a range of some 20 different measures and the likelihood of medical school applicants receiving a conditional or unconditional offer. The UCAS database included information on about 19,000 applicants who made nearly 93,000 applications to 27 medical schools (there are now 24 because of mergers) in the two years 1996 and 1997.

The most important conclusions are:

- High 'A' level grades are strong predictors of success (but this is retrospective; offers are made on predicted 'A' level grades)
- Previous imbalances for women applicants have disappeared
- Male applicants are disadvantaged at nearly half of all medical schools
- Applicants from ethnic minorities are disadvantaged to a variable degree in certain medical schools
- Applicants applying later in the selection season are disadvantaged
- Applicants making non-medical ('insurance') choices in their applications and those making less than 5 medical choices are disadvantaged
- Overall, candidates from Sixth Form Colleges and Colleges of Further Education are disadvantaged
- Applicants applying to their local medical school have an advantage over those who do not
- There is some evidence overall, but this is significant at only two medical schools, that applicants whose parental occupational background is from a lower socio-economic group are disadvantaged.

Warning

Caution should be applied to any interpretation of the data and analyses in this report on the characteristics, including ethnic origin, of applicants and accepted applicants to university medical schools. In particular, decisions by medical schools on individual applicants take account of much important information provided on UCAS forms and via interviews, including GCSE grades, predicted A-level grades and personal attributes, that is not currently available for inclusion in the data provided by UCAS for the study.

Any questions about the data relating to an individual Medical School should be addressed to the Dean/Head of that School. The addresses for Medical Schools may be obtained from the Executive Officer of the Council of Heads of Medical Schools, Woburn House, 20 Tavistock Square, London WC1H 9HD, telephone number +44 (0) 171 419 5494 and are also available on the CHMS web site: http://www.cvcp.ac.uk/chms/chms_mem.html

Introduction{tc "Introduction"}

Controversy about medical student selection, and in particular the question of whether or not there is discrimination against various groups of candidates, has appeared in the popular press and in medical journals for the past decade or so, and it has been fuelled by other, albeit controversial, suggestions of discrimination within the health service in general [1-5]. The central issue has been discrimination against ethnic minorities, but there are also other concerns that applicants from certain backgrounds (school type, social class, sex) or with particular educational qualifications (non-science A-levels), or making particular types of application (e.g. including an insurance choice, or asking for a gap year) are also not doing as well in selection as might be expected.

In February 1998 the Council of Heads of Medical Schools (CHMS) decided that public concern would best be allayed by full publication of data describing how selection was carried out, so that they could be analysed by interested parties. Following a meeting in April 1998 with Medical School Admission Tutors it was realised that there would also be scope for misinterpretation of what is a large and complex data set. I was therefore asked to provide a summary of the data, as well as a full statistical analysis. This would be helpful to those who did not themselves wish to analyse nearly five million raw numbers, and it would also provide some guidance on the technical details and methods for those who did wish to look at the data in detail. Appendix 1 provides a detailed account of the academic background to these questions, and a chronology of the present reports.

The interpretation of the data which are being released is inevitably problematic and therefore Appendix 2 provides a summary of some of the issues related to questions of disadvantage and discrimination. They are of course my own personal interpretation, but may be of use in avoiding the drawing of overly simplistic conclusions of these complex issues.

The report has been produced against some very tight deadlines. Although the decision to make data available publicly on the Web was made in April, with the intention of putting the data on the Web in September, the problems of generating the data in a suitable form, and then having it checked by medical schools, with eventual generation of a revised data set, meant that the finalised data for the present analysis were not available until the end of July. Inevitably therefore certain refinements and subtleties had to be omitted, and the presentation here is of a first pass through a complex data set. No doubt in the future other interested researchers will dig deeper into a rich vein of data and carry out better, more complex, more controlled, analyses. The analysis presented here is not therefore a final analysis but a first analysis of what will probably be many.*

It also spells out clearly some of the important limitations in its interpretation. The report is also supported by a number of other computer readable documents*.

* The author is also uncomfortably aware that the narrow time-window has not allowed all of the detailed checking and particularly double-checking which he would normally regard as desirable. Nevertheless every effort has been taken to ensure that the key results are accurate, and apologies are offered in advance for minor errors of transcription.

* These files are however freely available from the author at i.mcmanus@ucl.ac.uk. It should be noted that the files are very long. The files provided include the SPSS syntax files for converting the EXCEL data into SPSS system files, the SPSS system files themselves, and the SPSS syntax files for carrying out all the analyses reported in this Report. Between them these files should mean that any interested user will be able to repeat the analyses and modify them as they wish, in order to check them for accuracy, and to ask more detailed questions.

This report comes with a number of provisos, which should be read carefully. It is only about selection in 1996 and 1997. Applicants reading the report in 1998 will be applying for admission in 1999, two years after 1997. Medical schools will have changed their admissions policies (and in some cases in London, even their names) during that time, in part in response to the data reported in this analysis. Applicants will also be applying differently, in part in response to the analyses reported here. Selection, like all social systems, is a dynamic process whereby selectors and applicants dance around one another; each is trying to predict what the other will do in the future, and each changes their behaviour in response to beliefs about the other, in order to maximise different outcomes which are optimal from their perspective. Any description is therefore necessarily only a transitory description of a moving target.

Limitations of the present analysis{tc "Limitations of the present analysis"}

Like any statistical analysis of large amounts of raw data, there are inevitably limitations on what the data can and cannot do, and what interpretations can and cannot be drawn from them. In order to avoid possible confusion these are listed here, although they are inevitably incomplete, and all of the usual provisos in the interpretation of any statistical material must be borne in mind.

i. *Disadvantage versus Discrimination{tc "Disadvantage versus Discrimination" \l 2}.* The statistical analyses reported here can show that on average certain types of candidate are advantaged or disadvantaged relative to other applicants so that they are more or less likely to receive an offer. That is not however proof of discrimination, which has a legal definition. Nevertheless, it must be remembered that where systematic disadvantage appears to occur then there is also an onus of proof on organisations to demonstrate that discrimination is *not* the explanation, particularly when other studies provide strong evidence of discrimination.

ii. *Multicollinearity{tc "Multicollinearity" \l 2}.* This technical term from multivariate statistics refers to the fact that background or predictor variables are often themselves correlated, with the effect that each can cancel out the statistical significance of the other. In the present analysis that might, for instance, happen with MATURE and HEFE, since mature applicants are often in Higher or Further Education. In some schools it might appear therefore that neither is a significant predictor of success even though jointly they are. Further detailed exploration can usually uncover such problems, but it is beyond the scope of this report.

iii. *The process of selection{tc "The process of selection" \l 2}.* The present analysis can only consider two points during the selection — the moment an application arrives and the moment an offer is or is not made. Nothing is recorded in the UCAS records of the intervening processes. In particular, applicants are interviewed in about two thirds of UK medical schools. No systematic data has been made available on who has been interviewed, what the outcome of the interview was, etc. Likewise nothing is known about the reasons for making offers, the details of who makes the offers and the delegation of that process.

iv. *The outcome of selection{tc "The outcome of selection" \l 2}.* The present data base contains no information on the final outcome of selection — in other words, which of the individuals made offers eventually take them up and go to medical schools. That information was not made available and is not as yet publicly available. In some cases failure to take up offers is because of eventual examination failure. In other cases, those in which a candidate holds two or more offers, candidates then choose medical schools, rather than vice-versa [6]. Nothing is reported here on that process either, although there is information on whether or not candidates accept offers that they are made. The analysis is not straightforward, and was beyond the limited resources of this analysis.

v. *Other important variables{tc "Other important variables" \l 2}.* In our previous studies we have included a range of other measures in the studies, in particular GCSE grades, predicted A-level grades, non-European surnames, etc. These are all important predictors of success but none are available in the present study, and therefore they could not be included. Inclusion might alter the interpretation of some results at some institutions.

vi. *Unquantified variables{tc "Unquantified variables" \l 2}.* Much of the important information included on the UCAS form, such as the personal statement and the referee's

report, is essentially unquantifiable at present. It may however be of great importance in selection, and may account for many of the apparent effects found.

vii. *Multi-level modelling{tc "Multi-level modelling" \l 2}*. Statistical modelling in recent years has made many advances, of which the most important for present purposes is Multi-level or Hierarchical Modelling [7-9]. These approaches are highly appropriate to the present type of data. However they are not straightforward to apply, and practical time constraints meant they could not be used in the present report. A study using them is however being planned at present.

viii. *Continuous not discrete nature of effects{tc "Continuous not discrete nature of effects" \l 2}*. The description of variables as 'significant' or 'non-significant' can potentially be very misleading. All that 'significant' means is that the effects are unlikely to be due to chance. That does not, however, mean that medical schools can readily be divided into two groups*. Effect sizes show however that schools show a continuous range of disadvantage for various groups. Care should therefore be taken in interpreting the results presented.

ix. *First versus final analysis{tc "First versus final analysis" \l 2}*. The analyses presented here are not the 'final word' on the data made available about selection. The data are now publicly available for any interested persons to study as they wish. This report is therefore the *first analysis* rather than the *final analysis*. It is not expected that everything in it has been done precisely as others would wish to do, or taking into account all the subtleties of the data. It is merely a first pass at it, carried out within some very tight time constraints, in order that applicants and medical schools will have some idea of the pattern of effects shown in the mountain of numbers.

x. *Interpretation in relation to previous studies{tc "Interpretation in relation to previous studies" \l 2}*. The analyses presented here are principally those of data from 1996 and 1997. However scientific analysis necessarily considers the best interpretation of any set of data not only in terms of its own internal patterns and consistency, but also its relation to the wider body of scientific literature and analysis of related phenomena. That has been done here to some extent, in particular concerning the much more detailed but somewhat smaller study carried out of selection in 1991[10]. Such an approach is valid in so far as it can reasonably be expected that the processes and mechanisms of selection have not changed between 1991 and 1996/7. Care should therefore be taken in comparing studies at different times. The mere passage of time is not however adequate demonstration that processes have changed, and the claims should ideally be accompanied by supporting evidence.

* An old psychological joke says that "Psychologists divide people into two types — those that divide people into two types and those that don't". Most psychological descriptions (extroversion, neuroticism, etc) actually show a continuous range of values in the population; nevertheless people find it much easier to describe people as simply 'extravert' or 'introvert'. Likewise is the case with medical schools.

Analysis of the 1996 and 1997 data: Selection overall{tc "Analysis of the 1996 and 1997 data: Selection overall"}

Definition of variables{tc "Definition of variables" \l 2}

All original data were supplied by UCAS and the reader is referred to their Annual Report[11] for a more detailed description. For many variables I have created transformed measures, and these are described further in the report.

Prior to considering selection at the level of individual medical schools it is desirable to look at selection overall. This first of all confirms that the majority of variables which are being considered are indeed predictors* of selection (as would be expected from previous work [10., 12, 13]), and secondly allows a detailed analysis of the best ways in which to divide up continuous variables, such as age, date of application, number of applications, etc, of which there are several.

The analysis as presented here followed a definite evolution, and in a first pass through the data (not reported here) initially sixteen variables were considered in the analysis. In the second stage, a slightly different set of nineteen variables was used, eighteen of which are 'core variables', and the last one, wanting to take a gap year, is included as a separate addition, mainly because it is only available, for technical reasons, for the 1997 data. This basic set of 19+1 variables was used during the majority of the overall analysis reported here. On this basis it was decided to extend the set slightly, and in the version used for the analysis of individual medical schools, a total of 21+1 variables are used. Although slightly confusing to the reader, this does show how the analysis has responded iteratively to what has been found in the data. There are strong statistical reasons for keeping the core analyses identical for the 1996 and 1997 applicants, and therefore gap year was only looked at as an addendum to the main analysis. A final addition to the analysis was Scottish Highers for applicants to Scottish schools; in part due to oversight these had not been handled properly during the first passes through the data, and therefore they are not properly included in the many of the analyses presented below. They are however handled fully and properly in the analyses of individual medical schools described in the second part of the report.

The eighteen+ one variables considered in this stage of the overall analysis have been labelled as Educational, Applicational, and Demographic. In analysing them they should be read in conjunction with UCAS's own definitions of the variables, which are available from UCAS and are on their web-site. The variables are:

* It should be emphasised that 'predict' is used in the statistical sense that a knowledge of one measure allows an inference about the other measure beyond the expectation of chance. Prediction in the statistical sense does not imply any causal ordering, and it should be remembered that achieved A-level grades in particular are actually known about in a majority of applicants *after* offers have been made. However formal causal modelling of the relationship between estimated grades, offers and achieved grades can be carried out, and is described in our 1995 paper looking at selection in 1991.

Description	Definition	Variable
Educational variables		
Mean A-level grade	Average grade obtained for all A-levels taken (excluding General Studies and AS-levels), scored as A=10, B=8, C=6, D=4, E=2, O/F = 0. Mean value substituted for candidates taking one or no A-levels. See appendix 5 for relationship to UCAS A-level point scheme.	AG
Number of A-levels taken	Number of A-levels taken (excluding General Studies and AS-levels). Mean value substituted for candidates taking one or no A-levels.	AN
Non-Science A-levels	One or more A-levels in a non-Science subject (see Appendix 6 for definition of Science subjects).	NONSCIA
Resat A-levels or Highers	Any A-levels or Highers have been resat.	RESITS
General Studies A-level taken	General Studies A-level has been sat on some occasion.	GSTAKEN
General Studies A-level grade	Grade obtained at General Studies (if taken), scored as A=10, B=8, C=6, D=4, E=2, O/F = 0. Mean substituted for candidates not taking General Studies.	GSGRADE1
AS-levels taken	One or more subjects taken at AS-level.	ASN
Applicational variables		
Date of application	Scored as 1=by 15th October, 2=by 15th November, 3=by 15th December, 4=after 15th December. For technical reasons, the first two are strictly defined as "entered onto UCAS computer by 15th October/November", whilst the third means "arrived at UCAS offices by 15th December".	APPDATE1
Previous application	Evidence of an application for medicine in either of the two previous years. Candidates identified as identical if had same date of birth, sex and post-code.	PREVAPP
Insurance choice	Five applications for medicine and one application for a non-medical course.	INSURNCE
Less than five applications	Less than five applications in total for medicine.	LE4MED
Six applications for medicine	All six applications for medicine.	MEDAPP6
Gap year	Only available for 1997 applicants. Scored as requesting a gap year if application form marked for 1998 entry.	GAPYEAR
Demographic variables		
Sex	Male or Female	SEX1
Mature applicant	Aged over 21 on 30th September 1996 or 1997 for 1996/1997 applicants.*	MATURE
Social class	Registrar-General's Social class groupings (I, II, III, IV, V), classified on basis of Parental Occupation on application form. Mean score substituted for missing or other values.	SOCIAL2
Ethnic origin	Self-description of ethnic origin as coded on categories provided on application form.	ETHNIC3
Secondary school type	Scored as whether or not applicant had applied from a school classified by UCAS as 'Independent'.	SCHOOL2
Local applicant	Proportion of medical schools applied to in which applicant's address is in same area as medical school applied to. Definitions of local for each medical school shown in appendix 8. At application level scored as 1 or 0.	PLOCAL/ LOCAL

* Due to a minor programming error this variable was inadvertently coded as being *older* than 21 (i.e. 22 +) rather than 21 or older (i.e. including 21 as mature). This reduces the number of mature applicants by a small amount. The error is regrettable but was noted only very late in the production of the report, when it was too late to redo all of the calculations. It is extremely unlikely that it makes any substantial difference to any of the conclusions, but that is of course a hypothesis which can be tested by any one who is interested.

For completeness I also include at this point the two variables which will be used for analysing candidates taking just Scottish Highers and applying to Scottish schools. As will be explained later, they are not included in the overall analysis, but only in the analyses of the five Scottish schools. Their description is formally identical to that used previously for handling A-levels.

Description	Definition	Variable
Educational variables for candidates taking Scottish Highers		
Mean Scottish Highers grade	Average grade obtained for all Highers taken, scored as A=6, B=4, C=2. mean value substituted for candidates taking no Highers.	SHG
Number of Scottish Highers taken	Number of Highers taken. Mean value substituted for candidates taking no Highers.	SHN

The analyses reported here of selection overall were carried out by means of the SPSS syntax file REPORT.SPS, and can be used to generate all of the output discussed here.

Each of the core variables and then gap year will be considered in turn. Each will be analysed both in an unadjusted analysis (i.e. a simple effect, entered into the analysis as the only predictor[+]), and in an adjusted analysis (i.e. for the core variables, taking all the other seventeen variables into account, so that multicollinearity between variables is taken fully into account).

Missing values{tc "Missing values" \l 3}

In any multivariate analysis, missing values are always a problem. In the present analysis they have mostly been taken into account by means of mean substitution, the population mean for all valid cases being substituted for the missing values. Although not always optimal, this is a simple, effective procedure which is frequently used and rarely results in major problems [14], although it is accepted that it can result in occasional problems when large amounts of data are missing[15]. It has the major advantage over the default of many statistical packages, which is list-wise deletion, that the sample[*] size is kept at its maximal value (and in large complex data sets almost all subjects are found to be missing some measures). The possible effects of this imputation of missing values will be discussed again at the end of the section describing selection overall.

[+] In multivariate analysis the term 'predictor' tends to be preferred to the more conventional 'independent variable', mainly because the so-called 'independent variables' in most multivariate analyses are strictly not independent of one another in a statistical sense, being correlated to a greater or lesser extent. The term 'predictor' will therefore be used here.

[*] Although technically the present data do not form a 'sample', representing the entire population for that year, the conventional statistical terminology will be used in this report.

Dependent (outcome) variable.{tc "Dependent (outcome) variable." \l 3}

For the overall analysis, each candidate had applied to a maximum of six medical schools, and therefore could have received offers from up to six medical schools. The actual number of offers (variable NDECIS) is shown below:

```
NDECIS
                                                        Valid      Cum
Value Label                 Value  Frequency  Percent  Percent  Percent
                              .00       7781     41.1     41.1     41.1
                             1.00       4495     23.7     23.7     64.8
                             2.00       3272     17.3     17.3     82.1
                             3.00       2147     11.3     11.3     93.4
                             4.00        955      5.0      5.0     98.5
                             5.00        291      1.5      1.5    100.0
                             6.00          2       .0       .0    100.0
                                     -------  -------  -------
                            Total      18943    100.0    100.0

Valid cases   18943      Missing cases      0
```

41% of applicants received no offers at all, 24% received just one offer, and the remaining 35% of candidates received two or more offers. Since without an offer a candidate cannot be admitted at all, then the best outcome variable for the present purpose is whether or not a candidate has received one or more offers. The variable OFFER is therefore the outcome variable for the overall analysis.

```
OFFER     At least one offer received
                                                        Valid      Cum
Value Label                 Value  Frequency  Percent  Percent  Percent
No offers                     .00       7781     41.1     41.1     41.1
1+ offer                     1.00      11162     58.9     58.9    100.0
                                     -------  -------  -------
                            Total      18943    100.0    100.0

Valid cases   18943      Missing cases      0
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Statistical analysis{tc "Statistical analysis" \l 3}

The analysis was by means of a logistic regression[+], carried out by the SPSS LOGISTIC REGRESSION procedure. All eighteen core variables were entered simultaneously, and the significance of each assessed after taking the others into account. All predictor variables were either binary, or, if they had more than two values, their linear effects were tested. This report will first describe the overall regression on the core variables, and then each variable will be considered in turn, looking at the adjusted and unadjusted effects. In addition for continuous variables the report will look at the justification for using a simple linear effect, and for variables with more than two categories, the justification for using a simpler, reduced set of binary variables.

[+]Logistic regression is a standard technique in epidemiology, and many other areas of medical and psychological research. The presentation of results is usually in terms of the odds ratio and the log (odds ratio), and these are also used here.

The overall analysis considers the combined 1996 and 1997 data sets. There is therefore a total of 18943 candidates, 9485 in 1996 and 9458 in 1997 (although a small number in 1997 would have previously applied unsuccessfully in 1996). In the first instance the 1996 and 1997 applicants are considered in a single analysis. Later in this report the overall analyses are described separately for the 1996 and 1997 applicants, along with tests of whether are applicants of the core variables show significantly different effects across the two years.

Overall Logistic Regression of 1996 and 1997 data{tc "Overall Logistic Regression of 1996 and 1997 data" \l 3}

The dependent variable, OFFER, indicates whether or not the candidate had received at least one offer from a medical school. Overall 59% of candidates received at least one offer. Below is shown* the significance of each of the variables in predicting whether or not an applicant receives an offer.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4682	.0128	1329.397	1	.0000	.2275	1.5971
AN	.1378	.0374	13.6136	1	.0002	.0213	1.1478
NONSCIA	-.0787	.0471	2.7850	1	.0951	-.0055	.9243
RESITS	-.9392	.0685	188.1605	1	.0000	-.0852	.3909
GSTAKEN	.2054	.0440	21.8045	1	.0000	.0278	1.2280
GSGRADE1	.2071	.0327	40.0669	1	.0000	.0385	1.2301
ASN	.0474	.0420	1.2710	1	.2596	.0000	1.0485
APPDATE1	-.5183	.0269	372.3943	1	.0000	-.1202	.5956
PREVAPP	-.0258	.0642	.1619	1	.6874	.0000	.9745
INSURNCE	-.1857	.0439	17.9057	1	.0000	-.0249	.8305
LE4MED	-.7067	.0574	151.4535	1	.0000	-.0763	.4933
MEDAPP6	-.0952	.0830	1.3145	1	.2516	.0000	.9092
SEX1	.4336	.0361	144.5989	1	.0000	.0746	1.5428
MATURE	-1.1380	.0593	367.8639	1	.0000	-.1194	.3205
SOCIAL2	-.1186	.0201	34.9269	1	.0000	-.0358	.8881
ETHNIC3	-1.0855	.0402	728.9912	1	.0000	-.1683	.3377
SCHOOL2	.1350	.0428	9.9341	1	.0016	.0176	1.1445
PLOCAL	.1394	.0552	6.3731	1	.0116	.0131	1.1496
Constant	-.2450	.2484	.9726	1	.3240		

All but four of the predictors (non-Science A-levels taken, number of AS levels taken, six medical school applications, and previous application to medical school) are significant at the 0.05 level, and the majority are significant at least at the 0.001 level. The best predictor is average A-level grade, followed by ethnic origin, date of application, age, resit examinations, sex, four or less medical school applications, General Studies grade, Social class, General Studies taken, insurance choice, number of A-levels, number of local schools and Independent school. It should however be emphasised that these predictors are not 100% perfect at predicting the success or failure of applicants to obtain an offer. The table below shows the effectiveness of a simple predictor derived from the logistic regression, in relation to the actual outcome of the application, in terms of one or more offers received:

* In this standard SPSS output format, B is the unstandardised logistic regression coefficient (i.e. the multiplier in the regression equation), and is expressed in the units of the predictor variable itself. SE is the standard error of B, and the column marked Wald provides a significance test for each predictor, after taking all other predictors into account. DF is the degrees of freedom for the Wald test, and Sig is the significance level. R is a correlation coefficient, and exp(B) is the exponentiated B coefficient: since B is a log(odds ratio), exp(B) is an odds ratio itself.

Classification Table for OFFER

		Predicted: No offers N	Predicted: 1+ offer 1	Percent Correct
Observed				
No offers	N	4930	2851	63.36%
1+ offer	1	1719	9443	84.60%
			Overall	75.87%

Prediction based on all eighteen core variables has a sensitivity of 63.4%, specificity of 84.6%, and positive and negative predictive values of 74.1% and 76.8%.

Analysis of the individual core variables{tc "Analysis of the individual core variables" \l 3}

Several of the variables included in the previous logistic regression are continuous but were treated as though they were linear (e.g. A-level grades, numbers of A-levels, etc), or have been categorised (e.g. MATURE). These will therefore be included in the following analyses, the basic strategy in each case being to consider each variable in turn, looking at its predictive value on its own and after taking into account all of the other eighteen basic predictors.

A-levels and Scottish Highers{tc "A-levels and Scottish Highers" \l 3}

The table below shows the numbers of candidates taking different combinations of A-levels and Scottish Highers.

AN Number of A-levels (ex GS) by SHN Number of Highers (ex GS)

SHN Page 1 of 1

AN \ SHN Count	.00	4.00	5.00	6.00	7.00	8.00	9.00	Row Total
.00	1362	47	368	591	257	24	3	2652
								14.0
2.00	818		13	48	7	1		887
								4.7
3.00	11846	4	34	12	1	1		11898
								62.8
4.00	3157		1		1			3159
								16.7
5.00	300							300
								1.6
6.00	41							41
								.2
7.00	4							4
								.0
8.00	2							2
								.0
Column Total	17530	51	416	651	266	26	3	18943
	92.5	.3	2.2	3.4	1.4	.1	.0	100.0

It can be seen that although, for various reasons there is a substantial number of candidates for whom neither A-level nor Highers results are available, and few candidates who take both Scottish Highers and A-levels. It is hardly surprising that the majority of candidates who apply from the Scottish region have taken only Highers (82% of 1598), compared with a fraction of a percent from other regions. The number of applicants at individual medical schools taking only Highers is high at medical schools in Scotland (Aberdeen: 58%; Dundee: 45%; Edinburgh: 27%; Glasgow: 52%; St Andrews: 48%), although there is variation between schools. Outside of Scotland, few applicants to medical schools take only Highers, the proportions in schools with more than 2% being Newcastle (8.7%), Manchester (4.4%), Oxford (4.4%), Cambridge (3.6%), Belfast (2.8%), Sheffield (2.8%), and Leeds (2.3%).

The handling of Highers and A-levels is not straightforward, principally because of the problem of equivalence, there being no accepted way of converting A-level results to equivalent Highers results, or vice-versa*. For the overall analyses at the level of the candidate, described in the first part of this report, I have used only A-levels, since only a small proportion of applicants overall take only Highers+. However for the detailed analyses at the level of medical schools, I have included two additional variables, SHN and SHG, the number of Highers and the mean grade at Highers, *for the analyses of the five Scottish schools only*. By including both A-levels and Highers as separate predictors, any problems due to non-equivalence in scales are circumvented, and all Scottish applicants can be included, irrespective of the qualifications taken.

The specific handling of A-levels is also not without its complications, not least because subjects can be taken on several different occasions. The file provided by UCAS presents several different forms of calculation. The analysis has been restricted to what I have called AG and AN, but I am confident given the high correlation between all such measures that equivalent results would be obtained with any other variants upon the technique.

UCAS points have specifically not been used as the single measure of academic achievement. Firstly, they include General Studies, which is controversial in selection, and therefore needs handling separately. Secondly, they include AS-level points in some cases, and again, these need handling separately. Thirdly, UCAS points have a maximum of 30, and for candidates taking four or more A-levels are based on their best grades. Although this is satisfactory for typical applicants to UCAS, medical school applicants are amongst the very highest A-level achievers, and many hit a 'ceiling' of 30 points. Separating out mean grade and number of A-levels allows further room to assess differences in achievement, differences which selectors may well regard as of importance when reading an UCAS form.

* It should be noted that UCAS does (e.g. its Statistical Bulletin Number 3) describe points schemes which appear to be broadly equivalent for Highers and A-levels, so that a candidate may, for instance, score 24 on each scheme. However although in each scheme better, academically more able, candidates do score higher, there is no sense in which the schemes propose that a candidate scoring 24 points at A-levels (BBB) is necessarily equivalent to a candidate scoring 24 points at Highers (BBBBBB); it may be, for instance, that 24 on one scale is equivalent to 26 on the other.

+ In an ideal world the overall analyses would also have been re-calculated with SHN and SHG included at all stages. However this report has been produced under a very tight time-table, and the present route was therefore taken. Researchers concerned that it may have distorted the findings can of course recalculate the results with the inclusion of Highers.

Mean A-level grade{tc "Mean A-level grade" \l 3}

Mean A-level grade overall is calculated as the total A-level grade averaged across all subjects taken divided by the total number of A-levels taken* (AS-levels and General Studies are omitted from this calculation)+. In order to plot the relationship of offers to mean A-level grade, the grades are grouped on the basis that if a candidate had taken three A-levels (the mode) then the grades are equivalent to AAA, AAB, ABB, BBB, etc. The number of candidates in each of the groups are shown in the table in the text below. It should be noted that although a mean grade of 8.03 has been substituted for those with missing A-level grades for the overall analyses, for this section these candidates are in a separate 'missing' group.

Throughout this section A-level grades described are those attained by the candidate. However the majority of applicants apply *before* taking their A-levels, and so medical schools are making offers on the basis of GCSEs and predicted A-level grades (neither of which is available for study here).

AGGRP Mean A-level grade, grouped; equivalent to 10=AAA, 8=BBB, etc.

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Missing	.00	2652	14.0	14.0	14.0
EEE	2.00	112	.6	.6	14.6
DEE	2.67	199	1.1	1.1	15.6
DDE	3.33	144	.8	.8	16.4
DDD	4.00	407	2.1	2.1	18.6
CDD	4.67	568	3.0	3.0	21.5
CCD	5.33	607	3.2	3.2	24.8
CCC	6.00	1008	5.3	5.3	30.1
BCC	6.67	1216	6.4	6.4	36.5
BBC	7.33	1404	7.4	7.4	43.9
BBB	8.00	2312	12.2	12.2	56.1
ABB	8.67	2396	12.6	12.6	68.8
AAB	9.33	2562	13.5	13.5	82.3
AAA	10.00	3356	17.7	17.7	100.0
	Total	18943	100.0	100.0	

* There are some difficulties in how many A-levels can be regarded as taken when resits, etc, are taken into account, and therefore what should be the denominator. As a result the raw data provide several scores, calculated on a slightly different basis, and which present the results slightly differently. In practice none of these methods produce much difference in the final outcome, since all A-level measures correlate extremely highly with one another. As always, any reader concerned to test out these points is fully able to do so using the files provided.

+ This method of presentation is different from that used by UCAS in its calculation of A-level points. Appendix 5 discusses the relationship between the two measures.

The table below shows the proportion of candidates in each group receiving offers, together with approximate standard errors and 95% confidence intervals (calculated using the ONEWAY program in SPSS).

Group	Count	p(offer)	StdError	95 Pct Conf Int for Mean
Missing	2652	.4679	.0097	.4489 TO .4870
EEE	112	.1250	.0314	.0628 TO .1872
DEE	199	.1206	.0231	.0750 TO .1662
DDE	144	.1528	.0301	.0933 TO .2122
DDD	407	.1474	.0176	.1128 TO .1820
CDD	568	.2394	.0179	.2042 TO .2746
CCD	607	.2751	.0181	.2395 TO .3108
CCC	1008	.3492	.0150	.3197 TO .3787
BCC	1216	.4112	.0141	.3835 TO .4389
BBC	1404	.4972	.0133	.4710 TO .5233
BBB	2312	.5852	.0102	.5651 TO .6053
ABB	2396	.6740	.0096	.6553 TO .6928
AAB	2562	.7802	.0082	.7642 TO .7963
AAA	3356	.8883	.0054	.8776 TO .8989
Total	18943	.5892	.0036	.5822 TO .5962

The table below shows the logistic regression for each of the grouped grades*, when it is (a) the only variable in the logistic regression and b) when the other fifteen variables are taken into account; in each case the reference category is AAA. It is clear that in both cases, just as is shown in the figure, that the likelihood of acceptance is effectively a linear function of mean A-level grade.

Simple (unadjusted) effects

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AGGRP			2909.948	13	.0000	.3353	
Miss (1)	-2.2015	.0672	1073.023	1	.0000	-.2043	.1106
EEE (2)	-4.0190	.2909	190.8474	1	.0000	-.0858	.0180
DEE (3)	-4.0598	.2245	327.1361	1	.0000	-.1126	.0173
DDE (4)	-3.7861	.2380	253.0172	1	.0000	-.0989	.0227
DDD (5)	-3.8281	.1502	649.8305	1	.0000	-.1589	.0218
CDD (6)	-3.2289	.1126	822.8583	1	.0000	-.1789	.0396
CCD (7)	-3.0419	.1061	821.5447	1	.0000	-.1787	.0477
CCC (8)	-2.6956	.0858	986.2805	1	.0000	-.1959	.0675
BCC (9)	-2.4322	.0800	924.4579	1	.0000	-.1896	.0878
BBC (10)	-2.0845	.0765	742.5918	1	.0000	-.1699	.1244
BBB (11)	-1.7289	.0692	624.8126	1	.0000	-.1558	.1775
ABB (12)	-1.3466	.0700	369.9213	1	.0000	-.1198	.2601
AAB (13)	-.8060	.0727	123.0591	1	.0000	-.0687	.4467
Constant	-.4454	.0351	161.1879	1	.0000		

* It should be noted that when in logistic regression a variable has several categories, then one must be designated as a reference category, and significance levels are calculated for each of the remaining categories *relative to the reference category*. The standard errors and significance levels must therefore be treated with great care, particularly when making any comparison other than of a category against the reference category. Revised analyses should be carried out to answer such different questions.

Adjusted effects

Variable		B	S.E.	Wald	df	Sig	R	Exp(B)
AGGRP				1425.705	13	.0000	.2336	
Miss	(1)	-1.3509	.0799	286.0240	1	.0000	-.1052	.2590
EEE	(2)	-2.7990	.3064	83.4611	1	.0000	-.0564	.0609
DEE	(3)	-3.1543	.2377	176.0764	1	.0000	-.0824	.0427
DDE	(4)	-2.9699	.2539	136.8059	1	.0000	-.0725	.0513
DDD	(5)	-3.0449	.1597	363.7158	1	.0000	-.1187	.0476
CDD	(6)	-2.5027	.1220	420.9157	1	.0000	-.1278	.0819
CCD	(7)	-2.4242	.1150	444.3918	1	.0000	-.1313	.0885
CCC	(8)	-2.1967	.0935	552.0572	1	.0000	-.1464	.1112
BCC	(9)	-1.9751	.0870	515.2613	1	.0000	-.1414	.1388
BBC	(10)	-1.7549	.0828	448.8433	1	.0000	-.1320	.1729
BBB	(11)	-1.4330	.0748	366.7467	1	.0000	-.1192	.2386
ABB	(12)	-1.0857	.0750	209.6415	1	.0000	-.0900	.3377
AAB	(13)	-.6500	.0773	70.6766	1	.0000	-.0517	.5221

It is clear, both from the tables above, and from the figure that except at the very low end of the scale where there are relatively few candidates, the likelihood of receiving an offer is linearly proportional to the mean A-level grade (and would be more so if 'floor' effects were removed by plotting on a logistic ordinate), so that it is reasonable to use the linear component of the variable AG in the overall model.

[Figure: offers received v mean A level grade]

Number of A-levels taken{tc "Number of A-levels taken" \l 3}

The total number of A-levels taken is shown in the table below.

AN Number of A-levels (ex GS)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2.00	890	4.7	4.7	4.7
	3.00	11920	62.8	62.8	67.5
Missing values (mean sub)	3.19	2654	14.0	14.0	81.5
	4.00	3164	16.7	16.7	98.2
	5.00	300	1.6	1.6	99.8
	6.00	41	.2	.2	100.0
	7.00	4	.0	.0	100.0
	8.00	2	.0	.0	100.0
	Total	18975	100.0	100.0	

Note: the value of 3.19 is the population mean and has been used to substitute for missing values.

The vast majority of applicants have 3 or 4 A-levels (or are missing). Table 4 shows the logistic regression of OFFER on the number of A-levels taken. There is some evidence overall of a linear trend on the simple effect of the number of A-levels taken, although the adjusted table 4 suggests that the effect is mainly restricted to the most frequent values of 2, 3 and 4 A-levels.

Simple (unadjusted) effects of number of A-levels (relative to 3 A-levels)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AN			591.0254	7	.0000	.1500	
2	-1.2650	.0752	282.9573	1	.0000	-.1047	.2822
Missing	-.5779	.0432	178.7768	1	.0000	-.0830	.5611
4	.3745	.0430	75.9225	1	.0000	.0537	1.4542
5	-.2219	.1177	3.5513	1	.0595	-.0078	.8010
6	-.5961	.3138	3.6098	1	.0574	-.0079	.5510
7	-1.5458	1.1542	1.7938	1	.1805	.0000	.2131
8	2.6858	3.5384	.5762	1	.4478	.0000	14.6704
Constant	.3062	.4672	.4295	1	.5122		

Adjusted effects

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AN			29.6216	7	.0001	.0247	
2	.0759	.0962	.6219	1	.4303	.0000	1.0788
Missing	-.0177	.0576	.0950	1	.7579	.0000	.9824
4	.2709	.0532	25.9256	1	.0000	.0305	1.3111
5	.2052	.1419	2.0917	1	.1481	.0019	1.2278
6	.0823	.3786	.0473	1	.8279	.0000	1.0858
7	-1.3664	1.2188	1.2568	1	.2623	.0000	.2550
8	4.4296	9.4163	.2213	1	.6381	.0000	83.9010

Non-Science A-levels{tc "Non-Science A-levels" \l 3}

The tables below show the frequency distributions of the numbers of non-science A-levels. The simple variable AXN has a large number of missing variables and there are very few candidates with 2 or more science A-levels. The derived variable NONSCI (see below) has therefore been calculated on the basis of *any* evidence of at least one non-science A-level, with missing values being set at the modal value of 0.

AXN Number of non-Science A-levels (ex GS)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	12503	66.0	76.7	76.7
	1.00	3253	17.2	20.0	96.7
	2.00	375	2.0	2.3	99.0
	3.00	144	.8	.9	99.9
	4.00	15	.1	.1	100.0
	5.00	1	.0	.0	100.0
	.	2652	14.0	Missing	
	Total	18943	100.0	100.0	

NONSCIA 1+ Non-Science A-levels taken

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No non-sci A-level	.00	15155	80.0	80.0	80.0
Non-sci A-level	1.00	3788	20.0	20.0	100.0
	Total	18943	100.0	100.0	

Unadjusted effects of non-science A-levels are complex, as is shown in the table below, candidates with 1 non-science A-level apparently doing better, but those with 2 or more doing less well. Adjustment for other factors shows a clearer situation, in which all candidates with one or more non-science A-levels do less well overall during selection. The use of the NONSCIA variable is therefore justified.

Simple (unadjusted) effects (relative to no non-science A-levels)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AXN			32.7095	5	.0000	.0323	
1	.1392	.0408	11.6303	1	.0006	.0210	1.1494
2	-.3375	.1050	10.3339	1	.0013	-.0196	.7135
3	-.4282	.1677	6.5234	1	.0106	-.0144	.6517
4	-.5618	.5179	1.1767	1	.2780	.0000	.5702
5	-3.5636	5.0040	.5071	1	.4764	.0000	.0283

Adjusted effects

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AXN			8.3957	5	.1357	.0000	
1	-.0529	.0505	1.1003	1	.2942	.0000	.9484
2	-.3018	.1310	5.3118	1	.0212	-.0123	.7395
3	-.3495	.2005	3.0379	1	.0813	-.0069	.7051
4	-.2493	.6224	.1605	1	.6887	.0000	.7793
5	-2.6475	13.4994	.0385	1	.8445	.0000	.0708

Resits at A-levels or Scottish Highers{tc "Resits at A-levels or Scottish Highers" \l 3}

An indicator was calculated which showed whether there was any evidence that a candidate had retaken either A-levels or Scottish Highers, in which case they were given a score of 2, and otherwise given a score of 1. The distributions of the variables are:

ARES Resits in A-levels (ex GS)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	14339	75.7	88.0	88.0
	1.00	720	3.8	4.4	92.4
	2.00	771	4.1	4.7	97.2
	3.00	398	2.1	2.4	99.6
	4.00	40	.2	.2	99.9
	5.00	17	.1	.1	100.0
	6.00	4	.0	.0	100.0
	8.00	1	.0	.0	100.0
	9.00	1	.0	.0	100.0
	.	2652	14.0	Missing	
	Total	18943	100.0	100.0	

SHRES Resits in Highers (ex GS)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	1354	7.1	95.8	95.8
	1.00	32	.2	2.3	98.1
	2.00	14	.1	1.0	99.1
	3.00	6	.0	.4	99.5
	4.00	5	.0	.4	99.9
	5.00	2	.0	.1	100.0
	.	17530	92.5	Missing	
	Total	18943	100.0	100.0	

RESITS Resits taken in A, AS or Highers

				Valid	Cum
No resists	1.00	16892	89.2	89.2	89.2
Resits taken	2.00	2051	10.8	10.8	100.0
	Total	18943	100.0	100.0	

No detailed analysis was carried out to assess non-linearity on numbers of resits. The unadjusted and adjusted effects are however shown below. Adjustment has little effect on the effect, and candidates taking resits do less overall.

Simple (unadjusted) effect

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
RESITS	-.9134	.0480	362.6081	1	.0000	-.1186	.4012

Adjusted effect

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
RESITS	-.9392	.0685	188.1605	1	.0000	-.0852	.3909

General Studies A-level{tc "General Studies A-level" \l 3}

Two variables were calculated, GSTAKEN indicating that general studies A-level had been taken, and GSGRADE1 indicating the grade obtained. The distributions are shown below.

```
GSTAKEN   General studies taken
                                                    Valid     Cum
GS not taken                  .00     14214     75.0     75.0     75.0
GS taken                     1.00      4729     25.0     25.0    100.0
                                      -------  -------  -------
                            Total     18943    100.0    100.0

GSGRADE1  General Studies grade
                                                    Valid     Cum
Value Label                Value  Frequency  Percent  Percent  Percent
E                           1.00        219      1.2      1.2      1.2
D                           2.00        482      2.5      2.5      3.7
C                           3.00        893      4.7      4.7      8.4
Missing                     3.84      14214     75.0     75.0     83.5
B                           4.00       1373      7.2      7.2     90.7
A                           5.00       1762      9.3      9.3    100.0
                                      -------  -------  -------
                            Total     18943    100.0    100.0
```

Note: The value of 3.84 is the mean substituted for those not taking General Studies A-level.

Below are shown the unadjusted and effects effect of taking a General Studies A-level. The effect is much diminished in the adjusted analysis, suggesting that overall better qualified candidates tend to take General Studies A-level.

```
Unadjusted (simple) effect
Variable           B      S.E.     Wald    df      Sig       R   Exp(B)
GSTAKEN        .6143     .0358 293.7607     1    .0000   .1066   1.8484

Adjusted effect
Variable           B      S.E.     Wald    df      Sig       R   Exp(B)
GSTAKEN        .2054     .0440  21.8045     1    .0000   .0278   1.2280
```

The effects of the grade gained in General Studies A-level are shown below in the unadjusted and adjusted analyses. In both analyses students gaining A grades do better than those gaining E grades, the effect is approximately linear, although somewhat reduced in size in the adjusted analysis, presumably because candidates getting higher grades also have gained higher grades in their other A-levels.

```
Simple (unadjusted) effect of GSGRADE1 relative to Missing group
Variable              B      S.E.     Wald    df      Sig       R   Exp(B)
GSGRADE1                          621.4983     5    .0000   .1544
 E               -.7875     .1417  30.8721     1    .0000  -.0335    .4550
 D               -.2734     .0927   8.6994     1    .0032  -.0162    .7608
 C                .1078     .0699   2.3798     1    .1229   .0038   1.1138
 B                .6985     .0620 126.7326     1    .0000   .0697   2.0107
 A               1.4509     .0673 464.6562     1    .0000   .1343   4.2668

Adjusted effect of GSGRADE1
Variable              B      S.E.     Wald    df      Sig       R   Exp(B)
GSGRADE1                           57.6061     5    .0000   .0431
 E               -.2817     .1680   2.8100     1    .0937  -.0056    .7545
 D               -.0751     .1084    .4795     1    .4886   .0000    .9277
 C               -.0643     .0811    .6281     1    .4280   .0000    .9378
 B                .1903     .0714   7.1015     1    .0077   .0141   1.2096
 A                .5121     .0749  46.6942     1    .0000   .0417   1.6687
```

Number of AS-levels{tc "Number of AS-levels" \l 3}

The table below shows the number of AS-levels recorded as having been taken.

ASN Number of AS-levels (ex GS)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	13255	70.0	70.0	70.0
	.21	2652	14.0	14.0	84.0
	1.00	2658	14.0	14.0	98.0
	2.00	329	1.7	1.7	99.7
	3.00	42	.2	.2	100.0
	4.00	6	.0	.0	100.0
	5.00	1	.0	.0	100.0
	Total	18943	100.0	100.0	

Note: The value of 0.21 is the mean substituted for those for whom no information is available.

There are relatively few applicants with more than one AS-level, so that non-linearity is little of a problem, particularly since, as shown below, the main effect of ASN is much reduced when the other background variables are taken into account.

Simple effect of number of AS-levels (relative to missing)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
ASN			273.0608	6	.0000	.1009	
0	.5019	.0427	137.8724	1	.0000	.0728	1.6518
1	.9299	.0572	264.1021	1	.0000	.1011	2.5343
2	.6832	.1210	31.8990	1	.0000	.0341	1.9802
3	.2237	.3114	.5160	1	.4725	.0000	1.2507
4	.8214	.8669	.8979	1	.3434	.0000	2.2737
5	-3.0070	5.0041	.3611	1	.5479	.0000	.0494

Adjusted effect of number of AS-levels

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
ASN			7.4017	6	.2853	.0000	
0	.0586	.0574	1.0429	1	.3072	.0000	1.0604
1	.1730	.0737	5.5085	1	.0189	.0117	1.1889
2	.0743	.1494	.2475	1	.6189	.0000	1.0772
3	-.3260	.3861	.7127	1	.3985	.0000	.7218
4	-.3301	.9787	.1137	1	.7359	.0000	.7189
5	-4.0707	13.4994	.0909	1	.7630	.0000	.0171

Date of Application{tc "Date of Application" \l 3}

The table below shows the proportion of applicants who apply by 15th October, 15th November, and 15th December.

APPDATE1 Date app-n put on UCAS computer (4 group

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
By 15 Oct	1.00	4329	22.9	22.9	22.9
By 15 Nov	2.00	8880	46.9	46.9	69.7
By 15 Dec	3.00	5374	28.4	28.4	98.1
Late	4.00	360	1.9	1.9	100.0
	Total	18943	100.0	100.0	

The unadjusted and adjusted effects of date of application (below) show that there is a monotonic trend across date of application, which is to a first approximation linear across the four groups.

```
____th Oct'
Variable              B      S.E.     Wald    df      Sig       R   Exp(B)
APPDATE1                          1856.648     3    .0000   .2686
 By 15 Nov         -.8137    .0437 347.2691     1    .0000  -.1160    .4432
 By 15 Dec         -1.8301   .0470 1517.184     1    .0000  -.2430    .1604
 Late              -3.8945   .2055 359.2559     1    .0000  -.1180    .0204

Adjusted effects
Variable              B      S.E.     Wald    df      Sig       R   Exp(B)
APPDATE1                           375.9285     3    .0000   .1201
 By 15 Nov         -.4969     .0497  99.8705     1    .0000  -.0618    .6084
 By 15 Dec         -.9218     .0568 263.6785     1    .0000  -.1010    .3978
 Late             -2.8879     .2190 173.9356     1    .0000  -.0819    .0557
```

Previous application{tc "Previous application" \l 3}

A simple binary variable was calculated to record whether a candidate has made any application in the two previous years (based on UCAS identifying them as having the same sex, date of birth and postcode). There was no need to assess the linearity of this binary measure. The frequency distribution was as follows:

```
PREVAPP   Application in previous two years
                                                    Valid     Cum
Value Label                Value  Frequency  Percent  Percent  Percent
No previous app-n            .00      16648     87.9     87.9     87.9
Previous app-n              1.00       2295     12.1     12.1    100.0
                                      -------  -------  -------
                           Total      18943    100.0    100.0
```

The tables below show the unadjusted and adjusted effects of a previous application to study medicine. Although the effect is highly significant on its own, adjustment for other background measures makes it non-significant overall, presumably because applicants applying previously tend to be less well qualified than other applicants.

```
Simple (unadjusted) effect of previous application.
Variable           B      S.E.     Wald    df      Sig       R   Exp(B)
PREVAPP       -.4787     .0447 114.8407     1    .0000  -.0663    .6196

Adjusted effect
Variable           B      S.E.     Wald    df      Sig       R   Exp(B)
PREVAPP       -.0258     .0642    .1619     1    .6874   .0000    .9745
```

Number of medical and non-medical applications{tc "Number of medical and non-medical applications" \l 3}

The handling of the number of medical (MEDAPP) and non-medical (NMEDAPP) applications on the UCAS form is complicated, and has evolved during the course of this analysis (and in previous studies [10, 12, 13] it has been looked at simply as the number of medical and non-medical applications which have both been entered as covariates into the analysis). However the table below shows the number of applicants making various numbers of medical and non-medical applications. Note that it is possible to have six non-medical applications, and no medical applications since the data set includes applicants who applied originally for medicine, or who changed an application to medicine. The present analyses are all restricted to original applications only.

		Medical applications (MEDAPP)						
		0	1	2	3	4	5	6
Non-med. Applic'ns (NMEDAPP)	0			60	112	301	10723	1000
	1			7	12	103	*4910*	
	2			11	30	1047		
	3			17	359			
	4		1	247				
	5							
	6	3						

UCAS allows applicants to make six university choices and it might therefore be thought that MEDAPP and NMEDAPP would be linearly related, always summing to six; and likewise the collinearity would mean that when both are entered into an analysis then *neither* would be significant after taking the effect of the other into account. In fact that does not occur; the reason is seen in the complex distribution shown in the table above, where the modal combination is 5+0 (i.e. 5 medical choices and 0 non-medical; light shading in the table). The reason for this apparently non-rational combination is the statement in the UCAS handbook which says that the Council of Deans of Medical Schools recommends that no more than five applications should be for medicine, and that the remaining choice can be used for a non-medical ('insurance'*) choice without prejudice to an applicant's apparent commitment to medicine. Clearly a majority of applicants do not believe that statement or they presumably would include a non-medical ('insurance') choice, but only 26% use the recommended 5+1 combination (italics in table), 57% preferring the 5+0 combination which apparently reduces their likelihood of an eventual university place.

For purposes of this analysis the combinations shown in the table above are divided into three, resulting in three binary variables, called INSURNCE (Insurance choice), LE4MED (Four or less choices for medicine) and MEDAPP6 (Six medical school applications); together these partition the important variance found in the combinations of medical and non-medical applications. Numbers of each of the variables are as follows:

* Note that the term 'Insurance choice' has another specific meaning within the UCAS scheme, and refers to the second offer that a candidate may hold in addition to a firm offer. However many applicants and selectors refer to a single non-medical application as an 'insurance' choice, and the term is used here also, albeit in quotes after non-medical choice.

INSURNCE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	14033	74.1	74.1	74.1
	1.00	4910	25.9	25.9	100.0
	Total	18943	100.0	100.0	

LE4MED

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	16633	87.8	87.8	87.8
	1.00	2310	12.2	12.2	100.0
	Total	18943	100.0	100.0	

MEDAPP6

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	17943	94.7	94.7	94.7
	1.00	1000	5.3	5.3	100.0
	Total	18943	100.0	100.0	

The tables below show the unadjusted and adjusted effects of each of the measures. For an insurance choice, adjustment reverses the direct effect, making it much more significant, presumably because less good candidates tend to make an insurance choice.

Simple (unadjusted) effect of making an insurance choice

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
INSURNCE	.0659	.0338	3.7972	1	.0513	.0084	1.0681

Adjusted effect of making an insurance choice

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
INSURNCE	-.1857	.0439	17.9057	1	.0000	-.0249	.8305

Applicants making four or less choices tend to do less well, but the effect is little affected by adjustment for other background variables, suggesting that candidates making less than five medical applications are not less well qualified, and presumably do so for their own reasons.

Simple (unadjusted) effect of making four or less applications for medicine

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
LE4MED	-.8617	.0453	361.6035	1	.0000	-.1184	.4225

Adjusted effect of making four or less applications for medicine

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
LE4MED	-.7067	.0574	151.4535	1	.0000	-.0763	.4933

The effect of making all six choices for medicine is very negative in the unadjusted analysis, but is reduced to non-significance by adjustment for the core background variables.

Simple (unadjusted) effect of making all six choices for medicine

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
MEDAPP6	-.5382	.0652	68.1100	1	.0000	-.0508	.5838

Adjusted effect of making all six choices for medicine

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
MEDAPP6	-.0952	.0830	1.3145	1	.2516	.0000	.9092

Sex of applicant{tc "Sex of applicant" \l 3}

A small majority of applicants was female, as shown in the table below:.

SEX1

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Male	1.00	9218	48.7	48.7	48.7
Female	2.00	9725	51.3	51.3	100.0
	Total	18943	100.0	100.0	

The table below shows the unadjusted and adjusted effects of sex. Overall, female applicants are significantly more likely to receive offers, and the effect is not removed by adjustment for all other background variables.

Simple (unadjusted) effect of sex

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX1	.4041	.0297	185.3326	1	.0000	.0845	1.4980

Adjusted effect of sex.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX1	.4336	.0361	144.5989	1	.0000	.0746	1.5428

Age of applicant{tc "Age of applicant" \l 3}

Analyses usually consider primarily whether applicants are ‘mature’ or not, with mature being defined as aged 21 or over at the time of entry to medical school (i.e. in comparison with typical applicant who enters medical school at the age of 18). Here we look firstly at the overall distribution of ages of applicants, and then consider the proportions of them who receive offers. For convenience the ages are grouped as follows:

AGEGP

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	16.00	35	.2	.2	.2
	17.00	768	4.1	4.1	4.2
	18.00	10805	57.0	57.0	61.3
	19.00	3609	19.1	19.1	80.3
	20.00	775	4.1	4.1	84.4
	21.00	487	2.6	2.6	87.0
	22.00	532	2.8	2.8	89.8
	23.00	391	2.1	2.1	91.9
	24.00	270	1.4	1.4	93.3
	25.00	313	1.7	1.7	94.9
26-29	26.00	668	3.5	3.5	98.5
30-39	30.00	260	1.4	1.4	99.8
40-98	40.00	30	.2	.2	100.0
	Total	18943	100.0	100.0	

The proportion of candidates in each age group who are made offers is shown below. The oldest candidate to receive an offer was aged 39. (NB: Standard errors and confidence intervals only approximate as calculated by ONEWAY program in SPSS).

Group	Count	p(offer)	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
16	35	.2286	.4260	.0720	.0822 TO .3749
17	768	.8047	.3967	.0143	.7766 TO .8328
18	10805	.6929	.4613	.0044	.6842 TO .7016
19	3609	.5569	.4968	.0083	.5407 TO .5732
20	775	.3587	.4799	.0172	.3249 TO .3926
21	487	.3018	.4595	.0208	.2609 TO .3428
22	532	.2650	.4418	.0192	.2274 TO .3027
23	391	.2941	.4562	.0231	.2488 TO .3395
24	270	.2889	.4541	.0276	.2345 TO .3433
25	313	.2492	.4332	.0245	.2010 TO .2974
26-29	668	.2425	.4289	.0166	.2099 TO .2751
30-39	260	.1538	.3615	.0224	.1097 TO .1980
40-98	30	.0000	.0000	.0000	.0000 TO .0000

Regression analysis suggested it was not entirely clear, even in the adjusted analysis, that there was a clear break at age of 21, 20 year olds showing some disadvantage. Nevertheless, there are strong practical reasons for using the standard criterion for mature applicants. It can also been seen that over the age of 21 all candidates are clearly disadvantaged equally relative to 18 year olds, at least until one gets into the thirties.

Simple effect (unadjusted) of age, relative to 18 year olds.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AGEGP			1905.491	12	.0000	.2708	
<=16	-2.0302	.4031	25.3687	1	.0000	-.0302	.1313
17	.6020	.0934	41.5640	1	.0000	.0393	1.8258
19	-.5850	.0395	219.7144	1	.0000	-.0921	.5571
20	-1.3948	.0777	321.8647	1	.0000	-.1117	.2479
21	-1.6523	.1009	268.2187	1	.0000	-.1019	.1916
22	-1.8338	.1004	333.4411	1	.0000	-.1137	.1598
23	-1.6893	.1129	223.7491	1	.0000	-.0930	.1847
24	-1.7146	.1359	159.2212	1	.0000	-.0783	.1800
25	-1.9167	.1323	209.7947	1	.0000	-.0900	.1471
26-29	-1.9527	.0927	444.2195	1	.0000	-.1313	.1419
30-39	-2.5182	.1731	211.5679	1	.0000	-.0904	.0806
40+	-4.9926	1.4980	11.1085	1	.0009	-.0188	.0068

Adjusted effect of age

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AGEGP			660.7479	12	.0000	.1575	
<=16	-1.3960	.4236	10.8601	1	.0010	-.0186	.2476
17	.9122	.1035	77.6116	1	.0000	.0543	2.4899
19	-.3784	.0529	51.2312	1	.0000	-.0438	.6849
20	-.9823	.0977	101.0573	1	.0000	-.0621	.3745
21	-1.0483	.1146	83.6248	1	.0000	-.0564	.3505
22	-1.1545	.1150	100.8452	1	.0000	-.0621	.3152
23	-.9726	.1296	56.3612	1	.0000	-.0460	.3781
24	-1.1015	.1542	51.0278	1	.0000	-.0437	.3324
25	-1.3678	.1477	85.7776	1	.0000	-.0571	.2547
26-29	-1.4436	.1050	188.8480	1	.0000	-.0853	.2361
30-39	-2.0425	.1882	117.7666	1	.0000	-.0672	.1297
40+	-5.2672	2.3116	5.1918	1	.0227	-.0112	.0052

Social Class{tc "Social Class" \l 3}

The UCAS data base records social class on a six point scale, I, II, III IV and V, with III divided into IIIM and IIIN (skilled manual and skilled non-manual). Most sociological analysis tends to use the five-point scale. Here unadjusted and adjusted effects of each are given, and it will be seen that they are almost identical. The five-point scale does however look closer to linear and hence will be used. The frequency counts of the two scales are as follows:

SOCIAL1 Social class (6 point scale)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
I	1.00	6607	34.9	34.9	34.9
II	2.00	7010	37.0	37.0	71.9
Missing (mean sub)	2.09	1079	5.7	5.7	77.6
IIIN	3.00	1601	8.5	8.5	86.0
IIIM	4.00	1545	8.2	8.2	94.2
IV	5.00	902	4.8	4.8	98.9
V	6.00	199	1.1	1.1	100.0
	Total	18943	100.0	100.0	

SOCIAL2 Social class (5 point scale)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
I	1.00	6607	34.9	34.9	34.9
Missing (mean sub)	1.94	1079	5.7	5.7	40.6
II	2.00	7010	37.0	37.0	77.6
III	3.00	3146	16.6	16.6	94.2
IV	4.00	902	4.8	4.8	98.9
V	5.00	199	1.1	1.1	100.0
	Total	18943	100.0	100.0	

Regression analyses are presented below for each scale. Although there is little in it, the five point scale is marginally more linear (and in analyses not reported here, its linear component accounts for slightly more variance than the six point scale, albeit not significantly). The five point scale is therefore used in the analyses.

Six point social class scale (unadjusted), relative to missing group.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SOCIAL1			400.4364	6	.0000	.1231	
I	1.0798	.0678	253.8163	1	.0000	.0991	2.9440
II	.9513	.0673	199.5273	1	.0000	.0877	2.5890
IIIN	.7243	.0804	81.1220	1	.0000	.0555	2.0633
IIIM	.5583	.0808	47.7556	1	.0000	.0422	1.7476
IV	.4231	.0915	21.3764	1	.0000	.0275	1.5266
V	-.0779	.1603	.2360	1	.6271	.0000	.9251

Five point social class scale (unadjusted), relative to missing group.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SOCIAL2			395.0305	5	.0000	.1225	
I	1.0798	.0678	253.8163	1	.0000	.0991	2.9440
II	.9513	.0673	199.5273	1	.0000	.0877	2.5890
III	.6425	.0722	79.1897	1	.0000	.0549	1.9012
IV	.4231	.0915	21.3764	1	.0000	.0275	1.5266
V	-.0779	.1603	.2360	1	.6271	.0000	.9251

Six point social class scale (adjusted)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SOCIAL1			43.6222	6	.0000	.0351	
I	.3247	.0824	15.5337	1	.0001	.0230	1.3836
II	.1641	.0818	4.0215	1	.0449	.0089	1.1784
IIIN	.1375	.0968	2.0180	1	.1554	.0008	1.1474
IIIM	.0571	.0975	.3425	1	.5584	.0000	1.0587
IV	-.0391	.1099	.1266	1	.7219	.0000	.9616
V	-.1902	.1866	1.0390	1	.3080	.0000	.8268

Five point social class scale (adjusted)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SOCIAL2			42.7221	5	.0000	.0357	
I	.3246	.0824	15.5213	1	.0001	.0230	1.3835
II	.1642	.0819	4.0258	1	.0448	.0089	1.1785
III	.0981	.0873	1.2627	1	.2611	.0000	1.1031
IV	-.0389	.1099	.1250	1	.7237	.0000	.9619
V	-.1899	.1866	1.0356	1	.3088	.0000	.8270

Ethnic origin{tc "Ethnic origin" \l 3}

One of the major interests of this study is in ethnic origin. The UCAS main classification provides ten main categories (plus ‘unknown’ which is equivalent to not answered). Appendix 7 provides a comparison of the proportion of applicants in each of the ethnic groups with data for UCAS as a whole and for the population as a whole derived from the 1991 Census. From the ten main categories can be derived four major groups (White, Black, Asian, Other, plus Unknown), and these can be reduced to two major groups (White and non-White, plus Unknown, scored as the mean). Although the latter is the most convenient from the point of view of statistical analysis, it is necessary to demonstrate that no important variance has been lost by reducing 10 categories to two.

ETHNIC1 Ethnic group (10 categories + unknown)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
White	1.00	11905	62.8	62.8	62.8
Black Caribbean	2.00	90	.5	.5	63.3
Black African	3.00	523	2.8	2.8	66.1
Black Other	4.00	83	.4	.4	66.5
Indian	5.00	2195	11.6	11.6	78.1
Pakistani	6.00	1240	6.5	6.5	84.7
Bangladeshi	7.00	343	1.8	1.8	86.5
Chinese	8.00	392	2.1	2.1	88.5
Other Asian	9.00	975	5.1	5.1	93.7
Other	10.00	608	3.2	3.2	96.9
Unknown	11.00	589	3.1	3.1	100.0
	Total	18943	100.0	100.0	

ETHNIC2 Ethnic group White/Black/Asian/Other/Unk

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
White	1.00	11905	62.8	62.8	62.8
Black	2.00	696	3.7	3.7	66.5
Asian	3.00	5145	27.2	27.2	93.7
Other	4.00	608	3.2	3.2	96.9
Unknown	5.00	589	3.1	3.1	100.0
	Total	18943	100.0	100.0	

ETHNIC3 Ethnic group White/non-White (Unknown m

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
White	1.00	11905	62.8	62.8	62.8
Missing (scored as mean)	1.35	589	3.1	3.1	66.0
Non-white	2.00	6449	34.0	34.0	100.0
	Total	18943	100.0	100.0	

Regression analyses are presented below for the unadjusted and adjusted effects of the 10 point scale (relative to White). It can be seen that although there are large differences between ethnic groups in the unadjusted analysis, these are much reduced in the adjusted analysis, reflecting the fact that ethnic groups differ in the other background variables. The similarity of the various groups, relative to White, from which they are all very different, justifies the use in the first instance of a straightforward comparison of white applicants with non-white applicants.

Ethnic origin (unadjusted) relative to White

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
ETHNIC1			1207.032	10	.0000	.2151	
Black Carib	-1.5998	.2309	48.0192	1	.0000	-.0424	.2019
Black African	-1.8082	.1018	315.2721	1	.0000	-.1105	.1640
Black Other	-1.5374	.2375	41.9151	1	.0000	-.0394	.2149
Indian	-.6695	.0470	202.6976	1	.0000	-.0884	.5120
Pakistani	-1.3644	.0626	474.5191	1	.0000	-.1357	.2555
Bangladeshi	-1.1725	.1121	109.3751	1	.0000	-.0647	.3096
Chinese	-.7321	.1029	50.5995	1	.0000	-.0435	.4809
Other Asian	-.8736	.0671	169.4767	1	.0000	-.0808	.4174
Other	-.9173	.0837	120.0427	1	.0000	-.0678	.3996
Unknown	-1.1835	.0866	186.8102	1	.0000	-.0849	.3062

Ethnic origin adjusted, relative to White

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
ETHNIC1			791.4004	10	.0000	.1734	
Black Carib	-.8854	.2726	10.5499	1	.0012	-.0183	.4125
Black African	-1.3352	.1186	126.6671	1	.0000	-.0697	.2631
Black Other	-1.3821	.2717	25.8738	1	.0000	-.0305	.2510
Indian	-.9819	.0576	290.8053	1	.0000	-.1061	.3746
Pakistani	-1.1882	.0742	256.5153	1	.0000	-.0996	.3048
Bangladeshi	-1.2229	.1326	85.0776	1	.0000	-.0569	.2944
Chinese	-1.1771	.1216	93.6665	1	.0000	-.0598	.3082
Other Asian	-1.0920	.0802	185.3603	1	.0000	-.0845	.3355
Other	-.9086	.0991	84.0521	1	.0000	-.0566	.4031
Unknown	-1.0913	.1010	116.8329	1	.0000	-.0669	.3358

School type{tc "School type" \l 3}

UCAS classifies schools into seven categories (shown below)*. For many applicants, particularly those over the age of 18, no indication of type of schooling is available in the current data. A matter of public concern has been whether applicants from Independent schools are especially advantaged relative to other applicants. A second variable was therefore calculated which differentiated applicants known to have applied from an Independent School from all others.

* These data are classified on the basis of a questionnaire distributed by UCAS to schools, in which schools provide a classification of themselves on a multiple-choice question. The questionnaire presently contains 11 categories (A=Sixth Form Centre; B=Sixth Form College; C=Comprehensive School; D=Tertiary College; F=Further Education College; G=Grammar School; H=Higher Education Institute; I=Independent School/College; S=Other Secondary School; T=Technical College; O=Other (please specify)). However the data provided by UCAS specify only eight categories (Comprehensive, FE/HE, Grammar, Independent, Other, Unknown, VIth Form Centre, VIth Form College). These categories have been used as given by UCAS except that VIth Form Centre and VIth Form College have been merged. No further information is available from UCAS on which schools put themselves in the 'Other' category.

SCHOOL1 School type (7 categories)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Comprehensive	1.00	4312	22.8	22.8	22.8
FE/HE	2.00	1974	10.4	10.4	33.2
Grammar	3.00	2163	11.4	11.4	44.6
Independent	4.00	5708	30.1	30.1	74.7
Other	5.00	649	3.4	3.4	78.2
Unknown	6.00	2241	11.8	11.8	90.0
Sixth Form College	7.00	1896	10.0	10.0	100.0
	Total	18943	100.0	100.0	

SCHOOL2 School type (Independent vs Others)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Non-independent	1.00	13235	69.9	69.9	69.9
Independent	2.00	5708	30.1	30.1	100.0
	Total	18943	100.0	100.0	

The regression analyses in the tables below suggest that although applicants from Independent schools do better in the unadjusted analyses, this effect is actually reversed (and non-significant) in the adjusted analysis. The apparent advantage of applicants from Independent Schools is therefore secondary to higher grades and other background characteristics. Groups that *do* seem to be disadvantaged are those in FE/HE and Sixth Form colleges. Those at Grammar Schools appear to have a clear advantage.

School type (unadjusted), relative to Comprehensive

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SCHOOL1			1820.757	6	.0000	.2655	
FE/HE	-1.3974	.0580	580.1081	1	.0000	-.1501	.2472
Grammar	.4796	.0591	65.8761	1	.0000	.0499	1.6154
Independent	.2369	.0431	30.1729	1	.0000	.0331	1.2673
Other	-.8931	.0854	109.2999	1	.0000	-.0647	.4094
Unknown	-1.3938	.0555	629.9431	1	.0000	-.1565	.2481
Sixth form Col	-.2847	.0565	25.3936	1	.0000	-.0302	.7523

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)

School type (adjusted), relative to Comprehensive

SCHOOL1			199.7973	6	.0000	.0856	
FE/HE	-.7672	.0705	118.5136	1	.0000	-.0674	.4643
Grammar	.2027	.0678	8.9433	1	.0028	.0165	1.2247
Independent	-.0567	.0527	1.1553	1	.2825	.0000	.9449
Other	-.5100	.1009	25.5611	1	.0000	-.0303	.6005
Unknown	-.6098	.0810	56.6364	1	.0000	-.0461	.5435
Sixth Form Col	-.3003	.0673	19.9142	1	.0000	-.0264	.7406

The analysis above suggests the first modification thus far in the coding scheme set out at the beginning of this section, with the addition of three measures assessing additional types of school. The four variables coding school are therefore now: INDEPEND, FEHE, GRAMMAR, OTHSCHL.

INDEPEND

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Ind School	.00	13235	69.9	69.9	69.9
Ind School	1.00	5708	30.1	30.1	100.0
	Total	18943	100.0	100.0	

FEHE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not FE/HE	.00	16969	89.6	89.6	89.6
FE/HE	1.00	1974	10.4	10.4	100.0
	Total	18943	100.0	100.0	

GRAMMAR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Grammar	.00	16780	88.6	88.6	88.6
Grammar	1.00	2163	11.4	11.4	100.0
	Total	18943	100.0	100.0	

OTHSCHL

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not other schl	.00	14157	74.7	74.7	74.7
Other/Unkn/6th Form	1.00	4786	25.3	25.3	100.0
	Total	18943	100.0	100.0	

Local applicants{tc "Local applicants" \l 3}

Medical schools are not distributed equally over the whole of the UK. Many applicants prefer to apply to schools which are geographically closer to them. Medical schools may also prefer to select candidates who are closer to them. In an overall analysis the best way of assessing this is to see the extent to which candidates who have put a higher proportion of ‘local’ schools on their application have a greater likelihood of being selected. The variable PLOCAL is the proportion (between 0 and 1) of the medical schools applied to which are defined as ‘local’ (see Appendix 8 for definitions). For a more detailed analysis of linearity, a variable PLOCAL2 is calculated which clusters PLOCAL on the typical basis that there are five medical school applications.

PLOCAL2

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
0 (0 - .1)	.00	2192	11.6	11.6	11.6
.2 (.1 - .3)	2.00	3829	20.2	20.2	31.8
.4 (.3 - .5)	4.00	3847	20.3	20.3	52.1
.6 (.5 - .7)	6.00	3014	15.9	15.9	68.0
.8 (.7 - .9)	8.00	2583	13.6	13.6	81.6
1 (.9 - 1)	10.00	3478	18.4	18.4	100.0
	Total	18943	100.0	100.0	

The regression analyses below suggest that there is no doubt that applicants with no local medical schools are less likely to receive an offer. However the adjusted effect is not linear. It should be remembered that in the analysis of individual medical schools the variable LOCAL simply asks if the applicant is local to *that* medical school, and therefore it is likely to be much better behaved and easier to interpret.

```
Effect of number of local medical schools (unadjusted), rel to 0.
Variable             B      S.E.     Wald    df      Sig       R   Exp(B)
PLOCAL2                           334.0812     5    .0000   .1124
 PLOCAL2(1)      .6180     .0550 126.3981     1    .0000   .0696   1.8552
 PLOCAL2(2)      .3279     .0541  36.7882     1    .0000   .0368   1.3880
 PLOCAL2(3)      .3459     .0568  37.0453     1    .0000   .0370   1.4132
 PLOCAL2(4)      .3135     .0587  28.4879     1    .0000   .0321   1.3683
 PLOCAL2(5)     -.1950     .0546  12.7435     1    .0004  -.0205    .8229
Effect of number of local schools (adjusted)
Variable             B      S.E.     Wald    df      Sig       R   Exp(B)
PLOCAL2                            46.7960     5    .0000   .0379
 PLOCAL2(1)      .4123     .0661  38.8691     1    .0000   .0379   1.5103
 PLOCAL2(2)      .2057     .0659   9.7547     1    .0018   .0174   1.2284
 PLOCAL2(3)      .2618     .0693  14.2666     1    .0002   .0219   1.2992
 PLOCAL2(4)      .3791     .0709  28.5826     1    .0000   .0322   1.4610
 PLOCAL2(5)      .2834     .0666  18.0907     1    .0000   .0250   1.3277
```

Gap year (Deferred entry){tc "Gap year (Deferred entry)" \l 3}

Information was only available for the 1997 applicants on the intention to take a gap year*. The following analyses are therefore restricted to that year. In the unadjusted analysis, applicants intending to take a gap year are more likely to be accepted. However that does not take into account the fact that such applicants tend to be better qualified than other applicants, and in the adjusted analysis they are significantly *less* likely to be made an offer.

```
GAPYEAR
                                                      Valid      Cum
Value Label                 Value  Frequency  Percent  Percent  Percent
                              .00       8946     94.6     94.6     94.6
                             1.00        512      5.4      5.4    100.0
                                    -------  -------  -------
                            Total       9458    100.0    100.0

Gap year (unadjusted).
Variable             B      S.E.     Wald    df      Sig       R   Exp(B)
GAPYEAR         .1948     .0943   4.2702     1    .0388   .0133   1.2151

Gap year (adjusted).
Variable             B      S.E.     Wald    df      Sig       R   Exp(B)
GAPYEAR        -.3281     .1115   8.6539     1    .0033  -.0228    .7203
```

* The term ‘gap year’ is slightly ambiguous. CVCP interprets it as a candidate taking a year out between taking A-levels and entering university. This can however occur in two ways, either by applying pre-A-level in cycle N for entry in year N+2, which UCAS refers to as ‘deferred entry’, or by taking A-levels, and applying post-A-level in year N+1 for entry in year N+2. UCAS only has informaiton on the former, and that is what is referred to here by the variable ‘Deffered enty (gap year)’.

The final overall analysis{tc "The final overall analysis" \l 2}

The first of the two tables below shows the effects of the final set of twenty-one variables used to predict receiving one or more offers at a medical school. The second shows the identical analysis for 1997 only with gap year added in as a variable. The majority of effects are highly significant. Amongst the non-significant variables, attending an Independent School does not predict receipt of an offer, and candidates making previous applications are not disadvantaged. Candidates taking AS-levels are not given any additional benefit for their extra qualifications, and candidates making six applications to medical schools are not disadvantaged, even though they are breaking the explicit recommendations of medical school Deans (and gaining thereby an unfair advantage over candidates choosing to make only the recommended five applications)[16]. Amongst the significant effects, female white applicants from higher social classes are significantly advantaged, whereas applicants attending Further or Higher Education, or Sixth Form Colleges seem to be disadvantaged, as do candidates who do not apply to local medical schools, who apply late, make insurance applications, apply to less than five medical schools or applying for a gap year.

All 21 variables, 1996 and 1997.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4602	.0129	1265.907	1	.0000	.2220	1.5845
AN	.1461	.0376	15.1424	1	.0001	.0226	1.1574
NONSCIA	-.0782	.0474	2.7220	1	.0990	-.0053	.9248
RESITS	-.8871	.0688	166.0856	1	.0000	-.0800	.4118
GSTAKEN	.1686	.0442	14.5444	1	.0001	.0221	1.1837
GSGRADE1	.2050	.0328	39.0902	1	.0000	.0380	1.2275
ASN	.0629	.0423	2.2170	1	.1365	.0029	1.0650
APPDATE1	-.4971	.0270	338.0432	1	.0000	-.1145	.6083
PREVAPP	.0529	.0646	.6712	1	.4126	.0000	1.0544
INSURNCE	-.2162	.0444	23.7065	1	.0000	-.0291	.8055
LE4MED	-.7529	.0582	167.3687	1	.0000	-.0803	.4710
MEDAPP6	-.0801	.0833	.9242	1	.3364	.0000	.9230
SEX1	.4445	.0363	149.9777	1	.0000	.0759	1.5598
MATURE	-.8701	.0647	181.0094	1	.0000	-.0835	.4189
SOCIAL2	-.1038	.0203	26.1975	1	.0000	-.0307	.9014
ETHNIC3	-1.0472	.0406	665.7899	1	.0000	-.1609	.3509
INDEPEND	-.0573	.0527	1.1808	1	.2772	.0000	.9443
FEHE	-.7351	.0700	110.3934	1	.0000	-.0650	.4795
GRAMMAR	.2015	.0678	8.8321	1	.0030	.0163	1.2233
OTHSCHL	-.4245	.0558	57.7845	1	.0000	-.0466	.6541
PLOCAL	.1414	.0558	6.4290	1	.0112	.0131	1.1519
Constant	-.3400	.2415	1.9822	1	.1592		

All 21 variables, plus Gap Year, 1997 applicants only.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4424	.0186	565.8968	1	.0000	.2099	1.5564
AN	.1882	.0547	11.8389	1	.0006	.0277	1.2071
NONSCIA	-.0753	.0651	1.3380	1	.2474	.0000	.9274
RESITS	-.9117	.0968	88.7779	1	.0000	-.0823	.4018
GSTAKEN	.1010	.0610	2.7406	1	.0978	.0076	1.1063
GSGRADE1	.2206	.0459	23.0938	1	.0000	.0406	1.2468
ASN	.1828	.0627	8.4963	1	.0036	.0225	1.2005
APPDATE1	-.5115	.0370	190.8288	1	.0000	-.1215	.5996
PREVAPP	.0342	.0922	.1378	1	.7104	.0000	1.0348
INSURNCE	-.2644	.0618	18.3320	1	.0000	-.0357	.7677
LE4MED	-.6564	.0849	59.8222	1	.0000	-.0672	.5187
MEDAPP6	-.1199	.1194	1.0075	1	.3155	.0000	.8870
SEX1	.4043	.0511	62.6383	1	.0000	.0688	1.4982
MATURE	-.7087	.0923	58.9649	1	.0000	-.0667	.4923
SOCIAL2	-.0849	.0285	8.8486	1	.0029	-.0231	.9186
ETHNIC3	-.9992	.0580	296.9104	1	.0000	-.1518	.3682
INDEPEND	.0488	.0737	.4383	1	.5080	.0000	1.0500
FEHE	-.7449	.0994	56.1339	1	.0000	-.0650	.4748
GRAMMAR	.1691	.0918	3.3881	1	.0657	.0104	1.1842
OTHSCHL	-.4903	.0788	38.7437	1	.0000	-.0536	.6125
PLOCAL	.1669	.0799	4.3677	1	.0366	.0136	1.1817
GAPYEAR	-.3298	.1119	8.6818	1	.0032	-.0229	.7191
Constant	-.6672	.3423	3.7991	1	.0513		

Differences between 1996 and 1997 applicants{tc "Differences between 1996 and 1997 applicants" \l 3}

The table below compares means (or proportions) of the various background measures for the years 1996 and 1997. Applicants in 1997 have somewhat higher A-level grades and are more likely to have taken a non-science A-level. There is also a higher proportion taking General Studies, more making an Insurance Choice, fewer making less than five applications for medicine, fewer coming from ethnic minorities, and somewhat fewer making applications to local schools. There is a large difference in date of application: in the 1996 applicants; 17.9% had applied by Oct 15th, compared with 27.8% in the 1997 applicants. The explanation for this is not entirely clear, although it would seem to be a general phenomenon across UCAS that year that applicants applied earlier (see p.35 of the UCAS Annual Report[11]), without there being a large shift in the total number of applicants (as is also the case for medicine, where the total number of applicants is nearly identical in the two years). It may be related to an anticipated introduction of tuition fees, but that is not entirely clear at present.

	1996 (N=9485)	1997 (N=9458)	Sig
Offer received	58.7%	59.1%	NS
Number of offers received	1.22 (1.32)	1.19 (1.29)	NS
Mean A-level grade	7.94 (1.72)	8.11 (1.68)	p<.0001
Number of A-levels	3.19 (.54)	3.18 (.51)	NS
Non-science A-levels	18.8%	21.2%	p<.0001
Resits	10.9%	10.8%	NS
General Studies taken	24.1%	25.8%	p=.0054
General Studies grade	3.84 (.58)	3.84 (.59)	NS
Number of AS-levels	.22 (.46)	.21 (.43)	p=.040
Application date	2.17 (.73)	2.02 (.78)	p<.0001
Previous application	12.6%	11.6%	p=.033
Insurance choice	24.8%	27.0%	p=.0007
Less than 5 medicine applications	13.3%	11.1%	p<.0001
Six medicine applications	5.5%	5.0%	NS
Female	50.9%	51.8%	NS
Mature	13.2%	12.8%	NS
Social class	1.94 (.90)	1.94 (.89)	NS
Ethnic minority	36.0%	34.3%	p<.0001
Independent school	30.4%	30.2%	NS
FE or HE	11.0%	9.9%	p=.012
Grammar school	10.9%	12.0%	p=.022
Other school	26.0%	24.5%	p=.017
Proportion of local applications	.522 (.323)	.503 (.325)	p<.0001

Comparison of 1996 and 1997 selection processes{tc "Comparison of 1996 and 1997 selection processes" \l 3}

The two tables below show the basic analyses of the twenty-one variables separately for 1996 and 1997 applicants. There is some suggestion that some of the variables show differences in their effects in the two years. A formal comparison is therefore necessary to look at interactions between year and effect.

Interaction terms for *year x effect* were assessed using the SPSS logistic regression program. Firstly a main effects model was fitted with all effects, plus year of application. The effect of year of application was highly significant, not due to there being a difference in the rate of offers between the years, but because applicants in 1997 had somewhat higher A-level grades and therefore might, in a non-competitive system, have been expected to receive somewhat more offers, whereas they in fact received exactly the same proportion, making it look as if application was more difficult in 1997 than 1996*.

After the main effects model was fitted, all possible interaction terms were tested using a forward stepwise entry. Although in general somewhat overly liberal, this was computationally a more robust procedure. Since 21 interaction terms were being fitted, a Bonferroni adjusted significance level was required in the forward entry analysis, with a critical nominal P value of 0.00238 (i.e. 0.05/21). Using this procedure the most significant interaction term was the *Year x Independent school* interaction, which had a nominal significance level of .0037, which does not reach the

* It should be remembered that medical student selection is a good example of what is necessarily a 'norm-referenced' process. The number of entrants is fixed each year because of intake targets fixed by the Government and the intention is to fill each school. The fact that in a later year there may be an excess of candidates who are better qualified than in an earlier year can have no impact on that earlier year.

critical Bonferroni adjusted level, and hence it can be concluded that overall there are no significant differences in the process of selection between the two years.

1996 applicants only.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4916	.0183	720.9885	1	.0000	.2365	1.6349
AN	.0925	.0521	3.1506	1	.0759	.0095	1.0969
NONSCIA	-.0564	.0695	.6587	1	.4170	.0000	.9452
RESITS	-.8611	.0986	76.2421	1	.0000	-.0760	.4227
GSTAKEN	.2417	.0647	13.9742	1	.0002	.0305	1.2735
GSGRADE1	.1840	.0471	15.2380	1	.0001	.0321	1.2020
ASN	-.0521	.0580	.8076	1	.3688	.0000	.9492
APPDATE1	-.5119	.0402	162.5016	1	.0000	-.1117	.5994
PREVAPP	.0440	.0916	.2303	1	.6313	.0000	1.0449
INSURNCE	-.1539	.0645	5.6910	1	.0171	-.0169	.8573
LE4MED	-.8711	.0809	115.7987	1	.0000	-.0941	.4185
MEDAPP6	-.0495	.1173	.1782	1	.6729	.0000	.9517
SEX1	.4955	.0520	90.8911	1	.0000	.0831	1.6414
MATURE	-1.0267	.0915	125.9793	1	.0000	-.0982	.3582
SOCIAL2	-.1214	.0290	17.5654	1	.0000	-.0348	.8857
ETHNIC3	-1.1302	.0577	384.1919	1	.0000	-.1724	.3230
INDEPEND	-.1899	.0763	6.1943	1	.0128	-.0181	.8270
FEHE	-.7490	.0992	57.0377	1	.0000	-.0654	.4728
GRAMMAR	.2399	.1012	5.6130	1	.0178	.0168	1.2711
OTHSCHL	-.3898	.0800	23.7656	1	.0000	-.0411	.6772
PLOCAL	.1016	.0786	1.6702	1	.1962	.0000	1.1070
Constant	.0758	.3446	.0484	1	.8258		

1997 applicants only

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4417	.0186	564.6638	1	.0000	.2097	1.5554
AN	.1906	.0547	12.1533	1	.0005	.0282	1.2100
NONSCIA	-.0838	.0651	1.6566	1	.1981	.0000	.9197
RESITS	-.9018	.0966	87.1293	1	.0000	-.0816	.4058
GSTAKEN	.1058	.0610	3.0074	1	.0829	.0089	1.1116
GSGRADE1	.2203	.0459	23.0537	1	.0000	.0406	1.2464
ASN	.1783	.0626	8.1123	1	.0044	.0219	1.1952
APPDATE1	-.5140	.0370	193.0571	1	.0000	-.1222	.5981
PREVAPP	.0451	.0920	.2405	1	.6238	.0000	1.0461
INSURNCE	-.2566	.0616	17.3298	1	.0000	-.0346	.7737
LE4MED	-.6461	.0847	58.1320	1	.0000	-.0662	.5241
MEDAPP6	-.1160	.1193	.9462	1	.3307	.0000	.8904
SEX1	.4034	.0510	62.4500	1	.0000	.0687	1.4969
MATURE	-.6964	.0921	57.1567	1	.0000	-.0657	.4984
SOCIAL2	-.0833	.0285	8.5256	1	.0035	-.0226	.9201
ETHNIC3	-.9841	.0577	291.1638	1	.0000	-.1503	.3738
INDEPEND	.0453	.0736	.3789	1	.5382	.0000	1.0464
FEHE	-.7444	.0994	56.1169	1	.0000	-.0650	.4750
GRAMMAR	.1704	.0918	3.4448	1	.0634	.0106	1.1858
OTHSCHL	-.4885	.0787	38.5311	1	.0000	-.0534	.6136
PLOCAL	.1710	.0798	4.5901	1	.0322	.0142	1.1865
Constant	-.7329	.3414	4.6079	1	.0318		

Applicants taking Scottish Highers{tc "Applicants taking just Scottish Highers" \l 3} alone

In the case of A-level applicants, the majority were applying pre-A-level, and therefore selection was inevitably based more on estimated A-level grades (and GCSE grades) than on achieved A-level performance which was only known after offers had been made. However, candidates presenting with Scottish Highers have already obtained their results (and it is for that reason that the regression slopes on mean grade at Scottish Highers at individual medical schools, to be presented below, are so steep in comparison with the effects of as yet unknown A-level grades). A crucial problem in the interpretation of these complex data is to understand the extent to which the absence of precise knowledge of achieved A-levels at the time of selection itself is the basis for the difference between white and non-white applicants. That problem can in part be resolved by considering those candidates presenting to Scottish schools with just Highers. If white and non-White groups are equivalent in that subset of applicants, then the necessity to use A-level estimates in the A-level applicants could be the reason for non-White applicants apparently being disadvantaged. If on the other hand ethnic minority applicants applying with Highers alone are less likely to made offers, then the role of estimated A-levels in other applicants is less likely to explain the differences found.

An analysis was therefore carried out of all candidates presenting *only* with Scottish Highers qualifications to Scottish medical schools. Of these 1260 applicants, ethnic origin was unknown in 35 cases, and analysis was restricted to the remaining 1225, 156 (12.7%) of whom were from ethnic minorities. A new variable, OFFERSC, was used as the dependent variable, and it indicated whether or not the applicant received any offers from the Scottish medical schools to which they had applied. These candidates differed in the number of Scottish medical schools to which they had applied (48 applying to 1, 171 to 2, 270 to 3, 474 to 4, 261 to 5, and 1 to 6 Scottish schools). Since a candidate is obviously more likely to receive an offer if they apply to more schools, a variable NSCOT was also entered into the regression to take this factor into account. Ethnic minority applicants applied to a mean of 3.48 Scottish schools (SD 1.25, N=156), compared to a mean of 3.61 Scottish schools (SD 1.06, N=1069) in White applicants, a non-significant difference. Other variables in the analysis were similar to those used elsewhere in this report, with the exception that variables related entirely to A-levels or to non-Scottish education (Grammar schools) were omitted. The logistic regression analysis below shows the results:

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
NSCOT	.6954	.0971	51.2469	1	.0000	.2040	2.0045
SHG	1.2233	.1307	87.5811	1	.0000	.2689	3.3984
SHN	.5018	.1210	17.2096	1	.0000	.1134	1.6517
RESITS	.2030	.4169	.2370	1	.6264	.0000	1.2250
APPDATE1	-.7331	.2272	10.4096	1	.0013	-.0843	.4804
PREVAPP	.4367	.4194	1.0845	1	.2977	.0000	1.5477
INSURNCE	.1080	.3466	.0971	1	.7553	.0000	1.1141
LE4MED	-.7930	.3200	6.1391	1	.0132	-.0591	.4525
MEDAPP6	-.4325	.4570	.8956	1	.3440	.0000	.6489
SEX1	.2725	.1969	1.9151	1	.1664	.0000	1.3133
MATURE	.1730	.4218	.1682	1	.6817	.0000	1.1889
SOCIAL2	-.0594	.1095	.2941	1	.5876	.0000	.9424
ETHNIC3	-.6629	.2921	5.1519	1	.0232	-.0516	.5154
INDEPEND	.2059	.2807	.5383	1	.4631	.0000	1.2287
FEHE	-1.1122	.6312	3.1045	1	.0781	-.0306	.3288
OTHSCHL	-1.3252	.3719	12.6985	1	.0004	-.0951	.2657
Constant	-7.2025	1.5622	21.2581	1	.0000		

The effect of ethnic origin remains statistically significant (p=.0232), albeit at a much lower significance level than in the main analysis since the sample size is very much smaller, and hence

the power is lower. The effect size (-.6629), with its 95% confidence interval of -.292 to -1.235 suggests it is compatible with the figure of -1.0472 reported earlier on the overall analysis.

The table below shows the proportions of applicants receiving offers in relation to the mean grade attained at Scottish Highers:

	% of candidates receiving an offer (N)	
Mean grade at Highers (A=6, B=4, C=2)	White	Non-White
<4	24.6% (69)	21.7% (23)
4 - 4.49	53.1% (64)	33.3% (15)
4.5 - 4.99	64.9% (111)	50.0% (16)
5 - 5.49	85.5% (248)	80.0% (25)
5.5 - 5.99	92.5% (228)	91.7% (36)
6	97.4% (349)	92.7% (41)

Although the numbers of ethnic minority applicants are relatively small, the pattern (confirmed by the logistic regression) is clear: at all level of achievement at Highers, ethnic minority applicants are less likely to receive an offer than White applicants, and the overall effect is statistically significant and compatible with that reported for applicants as a whole. The same data are shown in the graph.

The conclusion seems to be clear that ethnic minority applicants to Scottish schools presenting with Scottish Highers are disadvantaged relative to White applicants, and this cannot be explained due to sixth form examination results not being known, since in Scotland they are available to selectors. The probability therefore has to be also that a similar effect applies outside Scotland to applicants applying pre-A-level. However, GCSE results have not been taken into account (and cannot be taken into account in this data set), and although they may provide some additional explanation, it is not clear whether even if they were to provide an explanation they would provide a justification for their use in selection.

[Figure:
Applicants receiving an offer
v Mean Scottish Highers Grade]

Mature applicants and applicants resitting examinations.{tc "Mature applicants and applicants resitting examinations." \l 3}

In the case of mature applicants, offers are often made on the basis of degree class, rather than A-levels taken perhaps three or more years previous. In the case of resit applicants, the offer made is often higher than it would be for a candidate taking A-levels for the first time, and the final grade achieved is not therefore as good an indicator of the likelihood of an offer. For these reasons it was decided to carry out an overall analysis of applicants who are not taking resits, and who are not mature (<21).

A total of 14773 applicants are included in the analysis, and the overall logistic regression is shown below:

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4910	.0148	1100.609	1	.0000	.2415	1.6339
AN	.2132	.0474	20.2258	1	.0000	.0311	1.2377
NONSCIA	-.1128	.0549	4.2213	1	.0399	-.0109	.8933
GSTAKEN	.1258	.0492	6.5256	1	.0106	.0155	1.1340
GSGRADE1	.1772	.0364	23.6671	1	.0000	.0339	1.1939
ASN	.0465	.0476	.9542	1	.3287	.0000	1.0476
APPDATE1	-.4417	.0324	185.4713	1	.0000	-.0987	.6429
PREVAPP	-.0258	.0909	.0803	1	.7769	.0000	.9746
INSURNCE	-.2530	.0493	26.2770	1	.0000	-.0359	.7765
LE4MED	-.7632	.0675	127.8914	1	.0000	-.0818	.4662
MEDAPP6	-.1088	.1086	1.0042	1	.3163	.0000	.8969
SEX1	.4872	.0423	132.6205	1	.0000	.0833	1.6277
SOCIAL2	-.0997	.0232	18.4923	1	.0000	-.0296	.9051
ETHNIC3	-.9969	.0470	449.7607	1	.0000	-.1542	.3690
INDEPEND	.0474	.0574	.6817	1	.4090	.0000	1.0485
FEHE	-.8159	.0836	95.1457	1	.0000	-.0703	.4422
GRAMMAR	.2178	.0704	9.5588	1	.0020	.0200	1.2433
OTHSCHL	-.4309	.0614	49.1913	1	.0000	-.0501	.6499
PLOCAL	.0865	.0656	1.7382	1	.1874	.0000	1.0903
SHG	1.4426	.1102	171.4626	1	.0000	.0949	4.2317
SHN	.4378	.0979	20.0180	1	.0000	.0309	1.5494
Constant	-12.6799	.8871	204.3270	1	.0000		

The outcome of the analysis is very similar to the overall analysis reported earlier, without any major changes in the conclusions to be reached. In particular the effect size for ethnic origin (-.997, 95% CI -1.089 to -.904) is effectively unchanged from its value in the overall analysis (-1.047). The inclusion of resit applicants and mature applicants cannot therefore explain the effects in the overall analysis, and it is highly unlikely that it explains the effect in individual schools either. The data are fully available for further checking of that conclusion.

The statistical interaction of sex and ethnic origin.{tc "The statistical interaction of sex and ethnic origin." \l 3}

The overall analysis has suggested that applicants from ethnic minorities and male applicants are disadvantaged in selection. In view of the inevitable interest in these two conclusions it is interesting to look at the question of whether there is a statistical interaction between them (i.e. is the degree of disadvantage of non-White males the same as the degree of disadvantage of non-White females). The overall analysis was therefore repeated with the inclusion of an interaction term (ETHXSEX).

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4705	.0130	1304.065	1	.0000	.2293	1.6007
AN	.1126	.0374	9.0651	1	.0026	.0169	1.1192
NONSCIA	-.0978	.0475	4.2364	1	.0396	-.0095	.9068
GSTAKEN	.1900	.0443	18.4117	1	.0000	.0257	1.2092
GSGRADE1	.2143	.0327	42.8397	1	.0000	.0406	1.2390
ASN	.0790	.0425	3.4587	1	.0629	.0077	1.0822
APPDATE1	-.5735	.0271	447.7856	1	.0000	-.1342	.5635
PREVAPP	-.3898	.0542	51.6978	1	.0000	-.0448	.6772
INSURNCE	-.1248	.0446	7.8418	1	.0051	-.0154	.8826
LE4MED	-.6449	.0594	117.8710	1	.0000	-.0684	.5247
MEDAPP6	-.1091	.0837	1.6992	1	.1924	.0000	.8966
SEX1	.4978	.0462	116.0169	1	.0000	.0678	1.6452
SOCIAL2	-.1059	.0204	26.8749	1	.0000	-.0317	.8995
ETHNIC3	-.9190	.0540	289.6252	1	.0000	-.1078	.3989
INDEPEND	-.0992	.0537	3.4054	1	.0650	-.0075	.9056
FEHE	-.8939	.0693	166.5922	1	.0000	-.0815	.4091
GRAMMAR	.2271	.0689	10.8644	1	.0010	.0189	1.2550
OTHSCHL	-.6312	.0528	142.7445	1	.0000	-.0754	.5319
PLOCAL	.0990	.0567	3.0463	1	.0809	.0065	1.1040
SHG	.9880	.0835	140.0218	1	.0000	.0746	2.6857
SHN	.3280	.0828	15.7027	1	.0001	.0235	1.3881
ETHXSEX	-.1479	.0751	3.8728	1	.0491	-.0087	.8625
Constant	-9.2640	.6942	178.0809	1	.0000		

For simplicity the analysis has also been restricted to the 18354 applicants for whom ethnic origin is known (and this also provides a clear demonstration that none of the major conclusions would be altered if this group were completely excluded from the analysis, rather than being replaced by a mean value in the statistical analysis).

The interaction of ethnic origin x sex just achieves a conventional significance level of p=.0491, which suggests a relatively small effect size given the large sample size. The analysis was repeated using dummy variable coding of the four ethnic x sex groups to locate the interaction, the reference group being White Males.

	b coefficient (SE)	Odds ratio (95% CI)
White male	0 (reference group)	1 (-)
White female	.498 (.046)	1.645 (1.503 - 1.801)
Non-White male	-.919 (.054)	.399 (.359 - .444)
Non-White female	-.569 (.0559)	.566 (.507 - .632)

Since the b coefficient is .498 in white females, and -.919 in non-white males, the absence of an interaction would imply an effect of +.498 - .919 = -.421 in non-white females. The actual effect is -.569, suggesting that non-white females are somewhat more disadvantaged than expected. The effect is however barely significant, and there would seem therefore to be little point in trying to isolate it in individual medical schools.

The effects of imputation of missing values using mean substitution.{tc "The effects of imputation of missing values using mean substitution." \l 3}

As described earlier in the report, there are inevitably missing values in a data set such as this, and these have been handled by imputation of population means. The question remains whether this might have biassed the analysis in some way. This section considers that question in a little more depth. The table below shows the extent of imputation for the individual variables.

Description	Variable	Percentage of candidates with missing data
Educational variables		
Mean A-level grade	AG	14%
Number of A-levels taken	AN	14%
Non-Science A-levels	NONSCIA	14%
Resat A-levels or Highers	RESITS	0%
General Studies A-level taken	GSTAKEN	0%
General Studies A-level grade	GSGRADE1	75%
AS-levels taken	ASN	14%
Applicational variables		
Date of application	APPDATE1	0%
Previous application	PREVAPP	0%
Insurance choice	INSURNCE	0%
Less than five applications	LE4MED	0%
Six applications for medicine	MEDAPP6	0%
Gap year	GAPYEAR	0%
Demographic variables		
Sex	SEX1	0%
Mature applicant	MATURE	0%
Social class	SOCIAL2	6%
Ethnic origin	ETHNIC3	3%
Secondary school type	SCHOOL2	12%
Local applicant	PLOCAL/LOCAL	0%
Mean Scottish Highers grade	SHG	93%
Number of Scottish Highers taken	SHN	93%

Individual dummy variables (indicated by an M prefix) were calculated for each variable, with a value of 0 if the data were proper data and 1 if the data were an imputed mean. In addition a variable PMISSING was also calculated which described the percentage of missing data for each individual candidate. This had a mean of 13.45% (SD 5.88; range 0 - 40%). To assess whether imputation may have altered the results, the overall analysis was re-run, firstly including PMISSING, and then including individual missing value indicators. The analysis with PMISSING, shown below, indicates that PMISSING is indeed highly significant, with applicants having more missing data being less likely to be accepted.

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4783	.0130	1354.750	1	.0000	.2296	1.6133
AN	.1775	.0377	22.1735	1	.0000	.0280	1.1942
NONSCIA	-.1988	.0481	17.0712	1	.0000	-.0242	.8197
RESITS	-.9924	.0692	205.7965	1	.0000	-.0891	.3707
GSTAKEN	-.1358	.0501	7.3616	1	.0067	-.0145	.8730
GSGRADE1	.2020	.0327	38.1026	1	.0000	.0375	1.2238
ASN	.0684	.0425	2.5896	1	.1076	.0048	1.0708
APPDATE1	-.4137	.0279	220.4626	1	.0000	-.0923	.6612
PREVAPP	.0495	.0648	.5836	1	.4449	.0000	1.0508
INSURNCE	-.1805	.0448	16.2668	1	.0001	-.0236	.8348
LE4MED	-.6545	.0592	122.3207	1	.0000	-.0685	.5197
MEDAPP6	-.0291	.0840	.1202	1	.7289	.0000	.9713
SEX1	.4827	.0367	173.2144	1	.0000	.0817	1.6205
MATURE	-.6216	.0679	83.8297	1	.0000	-.0565	.5371
SOCIAL2	-.1108	.0204	29.5552	1	.0000	-.0328	.8951
ETHNIC3	-1.0491	.0409	658.6289	1	.0000	-.1600	.3503
INDEPEND	-.0781	.0529	2.1771	1	.1401	-.0026	.9249
FEHE	-.7170	.0707	102.9197	1	.0000	-.0627	.4882
GRAMMAR	.1221	.0683	3.1918	1	.0740	.0068	1.1298
OTHSCHL	-.3645	.0565	41.6657	1	.0000	-.0393	.6946
PLOCAL	.2003	.0564	12.6239	1	.0004	.0204	1.2218
PMISSING	-.0533	.0041	169.0899	1	.0000	-.0807	.9481
Constant	-.1836	.2428	.5717	1	.4496		

The more detailed analysis includes all of the missing value indicators (although note that many are zero, or are confounded with other variables). The result is shown below:

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4676	.0131	1277.105	1	.0000	.2229	1.5962
AN	.1760	.0379	21.5264	1	.0000	.0276	1.1924
NONSCIA	-.0691	.0486	2.0160	1	.1556	-.0008	.9333
RESITS	-.9989	.0693	207.8353	1	.0000	-.0896	.3683
GSTAKEN	.2184	.0451	23.4069	1	.0000	.0289	1.2441
GSGRADE1	.2115	.0328	41.5517	1	.0000	.0393	1.2356
ASN	.0812	.0424	3.6641	1	.0556	.0081	1.0846
APPDATE1	-.5503	.0291	356.4357	1	.0000	-.1175	.5768
PREVAPP	.0386	.0660	.3423	1	.5585	.0000	1.0394
INSURNCE	-.3182	.0463	47.2730	1	.0000	-.0420	.7275
LE4MED	-.9047	.0629	206.9331	1	.0000	-.0894	.4046
MEDAPP6	-.0840	.0865	.9422	1	.3317	.0000	.9195
SEX1	.4741	.0377	158.2677	1	.0000	.0780	1.6066
MATURE	-.5930	.0792	56.0222	1	.0000	-.0459	.5527
SOCIAL2	-.0816	.0209	15.2023	1	.0001	-.0227	.9216
ETHNIC3	-.8828	.0423	436.1834	1	.0000	-.1301	.4136
INDEPEND	.0259	.0543	.2281	1	.6330	.0000	1.0263
FEHE	-.3796	.0744	26.0298	1	.0000	-.0306	.6841
GRAMMAR	.4067	.0697	34.0414	1	.0000	.0353	1.5018
OTHSCHL	-.0732	.0636	1.3248	1	.2497	.0000	.9294
PLOCAL	-.1908	.0596	10.2635	1	.0014	-.0179	.8263
MAG	-1.3975	.0855	267.3277	1	.0000	-.1017	.2472
MSOCIAL2	-.0975	.0835	1.3630	1	.2430	.0000	.9071
METHNIC3	-.4683	.1099	18.1555	1	.0000	-.0251	.6261
MSCHOOL2	-.2349	.0866	7.3576	1	.0067	-.0145	.7906
MSHN	-2.1523	.2922	54.2468	1	.0000	-.0451	.1162
MSHG	-.7466	.2824	6.9901	1	.0082	-.0139	.4740
Constant	2.0366	.2702	56.8027	1	.0000		

Again, there is an indication that some candidates with missing values, particularly for A-levels, ethnic origin, school type, and Scottish Highers, are less likely to receive offers. However the important point about this analysis is that the main effects described earlier are all effectively

unchanged by taking missing value imputation fully into account. In particular the effect of ethnic origin has an effect size which is similar to that reported earlier. It can therefore be concluded that mean substitution is not substantially distorting the results of the analysis.

Information on the percentage of imputed values at each individual medical school is given in the table in Appendix 9.

UK and non-UK Home applicants: a note of caution.{tc "UK and non-UK Home applicants: a note of caution." \l 3}

All of my previous published studies of medical student selection have restricted the analysis to individuals holding UK nationality. UCAS was therefore asked to provide data for this study only on UK nationals, and it was presumed throughout most of the process of analysis described elsewhere in the report that that was what had been provided. It eventually transpired however that UCAS had provided what they call 'Home' applicants, defined as individuals whose self-described permanent residence is in the UK (excluding the Channel Islands and Isle of Man). All of UCAS's published statistics use this definition of 'Home'*, and for most practical purposes it provides a good basis for assessing the likely fee status of applicants+. However in the case of medicine there is an important difference from all other university subjects. For medicine, Government imposes strict quotas on the number of Overseas students (defined as non-EU nationals). There is therefore a potentially important discrepancy between UCAS's definition of Home, and Government's definition of Overseas as defined in relation to quotas. All non-EU nationals who declare their permanent residence as being in the UK will be included in the present data set as Home in UCAS's terms, but will also be subject to the governmental quota on number of overseas students. It should be noted that this problem of interpretation applies to all previous statistics published by UCAS and UCCA on patterns of university application and selection.

The discrepancy between the data requested and the data provided only became apparent to me in the middle of September, in part due to Admissions Tutors asking precisely what was the nature of the data set analysed. However no medical school specifically notified me of the inclusion in the data set of non-UK nationals on the basis of their checking of the data provided by UCAS. As soon as I realised the possible problem I asked UCAS for further information; however for technical reasons UCAS have informed me that it is not possible to provide it before this report is released.

The discrepancy between Home and EU provides a very specific problem for this report, since ethnic origin almost certainly correlates with nationality and place of permanent residence. It seems probable that the majority of non-EU national Home residents are non-white. It could therefore be argued that in the present data set non-EU nationals may seem as though they were being considered in competition with other applicants (particularly, White, Home, EU nationals), whereas in practice they would be compared with the very different and probably relatively larger pool of non-EU nationals. There is a very limited number of places available for that group, and hence a lower likelihood of receiving an offer. Such an effect might distort the apparent disadvantage of non-white applicants, and give impression that non-white candidates were disadvantaged, whereas they were actually taking part in an entirely separate competition. The question is whether that is a feasible scenario.

* In recent years UCAS has distinguished Home, EU and Overseas.

+ Although strictly that remains the responsibility of higher education institutions.

Nothing can be said on the basis of the 1996/97 data directly. However, the 1991 data set[10] which I collected has far more detailed information, and since it seems reasonable, at least until there is substantive evidence to the contrary, to assume that the nature of selection broadly comparable in 1991 and 1996/97, to use those earlier data to provide an assessment of the likely effects of this omission. The details of that analysis are provided in the footnote below*. In their original published form the analysis specifically referred only to UK nationals[10]. To summarise the contents of the footnote, non-UK national ethnic minority home applicants are significantly *less* disadvantaged than UK national ethnic minority home applicants.

The importance of that analysis is several fold. Firstly, assuming that a similar pattern is found in the 1996/97 data, and there is no evidence that it will not be, then the inadvertent inclusion of non-UK Home applicants is extremely unlikely to have over-emphasised the disadvantage of UK Home non-white applicants, and if anything may have underestimated it. Although that result will probably apply in aggregate, it is possible that special cases may apply at individual medical schools, but that seems unlikely in the absence of further evidence. Nevertheless caution must be used in interpreting the results. Secondly, it is interesting to ask the mechanism of this significant difference. If, as is often argued, differences between white and non-white applicants reflect personal attributes which are systematically different, it seems unlikely that those differences should depend upon the nationality of the individual, rather than upon their ethnic group *per se* (an argument similar to that invoked earlier to do with surnames). It might seem tempting to argue that this difference is more compatible with a hypothesis of some form of discrimination, but such a conclusion should be adopted with great care, not least because the performance of ethnic minority candidates at final examinations has also been found to depend on nationality, and yet the weight of evidence suggests that the results are not compatible with a hypothesis of discrimination[17].

To summarise this complex and technical argument, there is little doubt that it is regrettable that information was not available solely on UK nationals, and I must take responsibility for failing to notice the problem earlier (and it must be said that UCAS made a clear statement on some of the paperwork supplied with the data). The question of whether the discrepancy is likely to invalidate some or all of the conclusions, has though to be answered in the negative. Indeed if previous data are to be relied upon, and there is no reason to believe they should not be, then the inclusion of the non-UK Home applicants might to some extent have reduced the size of the disadvantage of ethnic minorities reported elsewhere in this report. The results reported here are therefore probably safe.

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* Of a total of 6901 applicants in the 1991 survey, 6279 were classified as Home on the basis of UCCA's Residential Category (UCCA variable HORC). Of these 6279 Home applicants, 774 (12.3%) were non-UK nationals. Many more of the non-UK nationals did not provide information on ethnic origin (414/774 (53.4%), compared with UK nationals (151/5505 (2.8%). Nevertheless of those who did give their ethnic origin, 271/360 (75.3%) were non-white, compared with 1547/5354 (28.9%) of UK nationals who were non-white. Since other evidence (self-stated ethnic origin in our questionnaire rather than the UCCA form) suggests that about three-quarters of those not giving their ethnic origin to UCCA are non-white, we can be confident that a majority of non-UK Home applicants are likely to be non-white. The question then arises whether this is likely to explain the effects found. In order to do so, non-white non-UK Home applicants have to be particularly likely *not* to receive an offer.

A logistic regression was therefore carried out with the dependent variable being the receipt of one or more offers, and the predictor variables being mean A-level grade, number of A-levels, and ethnic origin. Analysis was restricted to those applicants with complete information on the measures. For all Home applicants (UK and non-UK) the disadvantage (log odds ratio) for non-white applicants was .7575 (SE .0778, odds ratio = 2.13x, N=5444). For UK Home applicants the disadvantage was .7122 (SE .0820, N=5146), and for non-UK Home applicants the disadvantage was .4207 (SE .3713, N=298). A formal check on the UK x white/non-white interaction found it was statistically significant (p=.0201). It is therefore clear that when included in the analysis non-UK Home applicants are *less* disadvantaged than are UK Home applicants.

Analysis of selection at individual medical schools{tc "Analysis of selection at individual medical schools"}

At this stage of the report, twenty one core background variables (plus gap year)* have been identified and characterised and shown to be well behaved in an overall analysis of selection in the combined 1996 and 1997 data, and it has been shown that there are no substantial differences in the process of selection in 1996 and 1997 (although there are some minor changes in the distribution of background variables across the two years). It is now possible to proceed with the main part of the present analysis — comparison of selection at individual medical schools. This process is relatively straightforward to describe. The 'final model' with its 21 variables (or 23 variables at Scottish schools, where number and grade at Highers are also included) is fitted individually to the applicants at each of the (then) twenty-seven UK medical schools+, separately for the 1996 and 1997 applicants, with the outcome in each case being whether or not applicants received an offer *at that particular medical school*. As in the overall analysis, logistic regression was used with simultaneous entry of all 21 (or 23) variables, so that significance levels for each effect were assessed after taking all other background variables into account. This is relatively conservative but is unlikely to be seriously misleading in producing type I errors (i.e. suggesting that a background factor is a significant predictor of selection at a school when in fact it is not). There is inevitably a concomitant increase in the risk of type II errors, but that is probably a fairer way of handling complex social data upon which important decisions may be made, possibly about discrimination or the unfair advantaging of certain groups of applicants. The question of assessing statistical significance is subtle and complex and will be addressed in the next section. The handling of gap year was slightly different since information was only available on it for the 1997 applicants. It was therefore omitted from the main analyses and instead an additional analysis carried out for the 1997 data only, adding in gap year after the other 21 background variables.

Significance testing
{tc "Significance testing" \l 2}

Assessing statistical significance presents a number of problems when 21 factors are each being tested in 27 schools in two separate years, making a total of 1134 tests. The major problem is to avoid inflation of the alpha level (type I errors) due to repeated testing. Fortunately a straightforward solution is available because of the fact that identical analyses have been carried out in two successive and independent years (and a preliminary analysis of the overall data, described in this report has shown that selection is equivalent in the two years, with no interactions terms between effects and year). The essence of the present method is that a result is

* At Scottish schools, the number of Highers and mean grade at Highers are also used in the analysis.

+ Medical education in London is currently in a state of flux, which can be confusing to those not familial with the details. In 1996 and 1997 Imperial College School of Medicine was, in practice, the old St. Mary's Hospital Medical School, which had been independent in 1991; however applicants in 1998 applied to an Imperial College School of Medicine which had by then incorporated Charing Cross and Westminster Medical School. In 1996 and 1997, University College School of Medicine had previously in 1991 been University College and Middlesex School of Medicine, and in August 1998 became Royal Free and University College School of Medicine, although for the immediate future the selection systems of University College and the Royal Free are remaining separate. The medical school at Queen Mary and Westfield College in 1996 and 1997 was formed from the basic medical science departments of QMW, along with St. Bartholomew's Hospital Medical School and the Royal London Hospital School of Medicine which were independent in 1991. The United Medical and Dental Schools in 1996 and 1997 had in 1991 been Guy's Hospital Medical School and St. Thomas's Hospital Medical School which subsequently merged as UMDS; in 1998 UMDS merged with King's College Hospital School of Medicine and Dentistry as The Guy's, King's College and St Thomas' Hospitals' Medical and Dental School (GKT). Outside London all medical schools had remained unchanged in name, location or basic structure across the time scale of these studies.

considered as significant if it is not only significant in one year *but is also significant in the other year as well*. A nominal alpha level of 0.01 has been chosen. In one of the years it would therefore be expected that by chance alone 5.67 of the 567 tests would be significant on such a criterion. Of those 5.67 chance results however only 0.0567 would also be significant when tested on the independent data from the second year. Adequate control of alpha inflation has therefore been produced. In practice a minor modification was introduced so that the criterion for significance was either that a nominal level of 0.01 was attained on each occasion, or a level of 0.05 was attained on each occasion and the geometric mean of the two nominal levels was less than 0.01 (e.g. a combination of p=.05 and p=.002 is acceptable). The satisfactory nature of the control of alpha inflation is shown by the fact that if results are indeed due to chance alone, then on 50% of occasions they will be of opposite sign in the two years. In the present analysis, of 150 effects deemed significant, in only two cases (1.3%) was the direction of the effect different in the two years (and these effects were omitted from the results)*. The significance testing for the effect of a gap year could not be carried out using the above procedure as information was only available for one year. A nominal alpha level was therefore set at 0.01; the actual levels achieved in the five significant reported results are .0060, .0063, .0083, .0002 and <.0001.

In relation to the process of selection at an individual medical school, the significance levels described above are conservative. For a single school, only 21 tests are being carried out each year. Even if a conventional alpha level of 0.05 is used in that situation then only about 1 of the 21 tests will be significant in a single year. The likelihood of that same test being significant in a second year, by chance alone, is about 0.05, resulting in adequate control of the alpha level for that one school alone. If only one school is being looked at then probably the best criterion of significance for any single variable is that the effect reaches 0.05 in both years and that the effect is in the same direction in both cases.

Effect sizes{tc "Effect sizes" \l 2}

In medical statistics it is generally felt to be desirable to present effect sizes and confidence intervals, in addition to or instead of significance levels. In the present study the sheer quantity of parameters being estimated precludes any straightforward presentation of effect sizes and confidence intervals. However appendix 10 presents the important parts of the SPSS output which allows effect sizes and confidence intervals to be examined.

The differences between medical schools{tc "The differences between medical schools" \l 2}

Applicants to different medical schools differ in many ways, and in part it is these differences which confound any simple study of entrants (as in some previous studies[18,19]) and the presumption that such differences must reflect differences in selection processes. Appendix 9 provides summary statistics (mean or percent) for each of the twenty-two variables being used in the comparison of individual schools. Neither standard errors nor formal comparisons are provided — they are readily calculated in SPSS. They are also of little major relevance to the present study, where the emphasis is upon the process of selection, and a comparison of candidates to whom offers are made with those to whom offers are not made.

Predictors of the making of offers, and hence of the process of selection, can be seen in Appendix 10, which provides an abbreviated version of the SPSS output, providing just the variables in the equations, separately for the 1996 and 1997 applicants, with one medical school to a page for ease of reading.

* For the record, these were MATURE at Bristol and AN at Edinburgh.

Appendix 11 summarises the size of the effects on variables which are significant at the individual medical schools. To ensure readability, standard errors and confidence intervals have not been included, but all are available in appendix 10.

The significance of differences between medical schools{tc "The significance of differences between medical schools" \l 2}

Although the analyses described above provide suggestive evidence that there are differences between medical schools in the disadvantage of various groups of applicants, it could be argued that there will inevitably be differences between schools (it is after all highly unlikely that all will have precisely identical effects on all measures). The question arises therefore of whether the differences are statistically significant. Perhaps the most contentious result in the present data will concern differences between schools in the relative disadvantage of ethnic minority applicants, and the remainder of this section is restricted to an analysis of that issue. In statistical terms the question is equivalent to asking whether there is a medical school x ethnic origin interaction. If so, then schools differ in the extent of the disadvantage. There are certain problems in assessing this, of which the most important is that if one looks for an interaction at the application level (i.e. the 90,000 applications), then the 90,000 applications are not statistically independent, coming from only 19,000 candidates. This has been handled here by analysing the 90,000 applications but weighting each by a factor of 0.2 (i.e. equivalent to a conservative estimate of only 18000 candidates). The analysis below shows that result. The ethnic origin x medical school interaction is highly significant (chi-square = 1322.51, 26 df, p<<.0001). It can therefore be safely concluded that schools do indeed differ in the extent to which ethnic minority applicants are disadvantaged.

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3973	.0164	586.7531	1	.0000	.1679	1.4878
AN	.1450	.0403	12.9469	1	.0003	.0230	1.1561
NONSCIA	.0515	.0495	1.0827	1	.2981	.0000	1.0528
GSTAKEN	.0728	.0457	2.5351	1	.1113	.0051	1.0755
GSGRADE1	.1893	.0355	28.4138	1	.0000	.0357	1.2084
ASN	.0951	.0422	5.0889	1	.0241	.0122	1.0998
APPDATE1	-.4673	.0305	235.1714	1	.0000	-.1060	.6267
PREVAPP	-.5444	.0684	63.3253	1	.0000	-.0544	.5802
INSURNCE	-.2447	.0484	25.5586	1	.0000	-.0337	.7829
LE4MED	-.3711	.0789	22.1469	1	.0000	-.0312	.6900
MEDAPP6	-.3534	.0961	13.5226	1	.0002	-.0236	.7023
SEX1	.3023	.0395	58.6579	1	.0000	.0523	1.3530
SOCIAL2	-.0855	.0232	13.5534	1	.0002	-.0236	.9181
ETHNIC3	-.5267	.0508	107.5867	1	.0000	-.0714	.5906
INDEPEND	-.0488	.0537	.8238	1	.3641	.0000	.9524
FEHE	-.6592	.0903	53.2736	1	.0000	-.0497	.5173
GRAMMAR	-.1458	.0673	4.6932	1	.0303	-.0114	.8643
OTHSCHL	-.4975	.0603	68.1526	1	.0000	-.0565	.6080
LOCAL	.3938	.0409	92.5194	1	.0000	.0661	1.4826
SHG	1.5012	.1110	183.0618	1	.0000	.0934	4.4871
SHN	.4104	.0884	21.5711	1	.0000	.0307	1.5075
ETHNIC3 * MEDSCHL			1322.509	26	.0000	.2475	

Acknowledgments{tc "Acknowledgments."}

I am very grateful to the Council of Heads of Medical Schools, to their Chairman and Executive Secretary, and the Deans of individual medical schools for allowing me access to these data prior to full publication. I also thank Mr Richard Coleman and Ms Liz Viggars of UCAS and Mr Michael Powell of CHMS for their assistance in the analysis of the data and the preparation of the results. Dr Sheila Gore provided a critical overview of the statistical analysis, and contributed a number of extremely helpful suggestions. Deans and Admissions Tutors at several medical schools also provided very useful comments on an earlier draft of this report, and their care and attention to detail is much appreciated, and has undoubtedly clarified several aspects of this report.

Appendices
{tc "Appendices"}

Appendix 1: Background to this report.{tc "Appendix 1: Background to this report." \l 2}

Previous studies{tc "Previous studies" \l 3}

The selection of medical students has long been controversial[20-32], with disagreement over the criteria employed by medical schools. Schools have also differed in the methods of selection that they have used, in particular about two thirds of them choosing to interview, and the remaining schools not interviewing the majority of their entrants.

Controversy began again in the mid-1980s with explicit claims that medical schools were discriminating against women applicants and against ethnic minorities[18]. Such claims were methodologically flawed, not least because they did not compare applicants with entrants; instead they suggested that because the proportion of female or minority *entrants* to schools showed significant differences, then that must reflect discrimination (the implicit, untested, and erroneous inference being that female and minority applicants applied in similar proportions to all medical schools).

In 1984 Professor Peter Richards and I published our first cohort study of medical student selection, looking at a large cohort of applicants for entry in 1981[12,33,34]. After the publication of other data on the ethnic origin of students[35] assessed using surnames, and in response to a published request[36], we re-analysed our data and found that applicants with non-European surnames did indeed seem to be disadvantaged.

Further controversy appeared with reports of explicit discrimination against ethnic minority and female medical school applicants at St George's Hospital Medical School. In this unusual case the accusation of discrimination was readily proven by the fact that the selection process was instantiated within the code of a computer program. The outcome was a formal investigation and report by the Commission for Racial Equality[37].

In 1989 we published the results of a second cohort study of medical student selection, this time looking at applicants for entry in 1986[10]. Better measures of ethnic origin, which was now self-classified, rather than inferred from surnames, coupled with a larger sample size, and better control of background variables allowed for a more robust study. In particular in our previous study we had realised that ethnic minority candidates differed systematically from White applicants on a number of measures, and in particular they tended to have lower O-level and A-level results, to apply later, and to have applied previously, all of which were independent correlates of a lower likelihood of selection. Nevertheless despite taking these other measures into account, it was clear that at all levels of A-level achievement, non-White applicants were significantly less likely to be accepted than White applicants.

Although our study of the 1986 cohort left little doubt that non-White applicants were significantly less likely to be selected than equivalently qualified White applicants, that itself was not proof of discrimination in a technical sense, and was perhaps best described as 'disadvantage'. The problem was that non-White applicants might also have differed systematically from White applicants in some other relevant factors which had not been systematically assessed (perhaps, attitudes, motivation, or whatever).

Our survey of the 1991 entry cohort, which was substantially larger than the 1981 and 1986 cohorts had several design features which allowed a much more detailed analysis of the issues, and in particular provided data which gave better leverage on the problem of whether the lower rate of selection of non-White applicants was disadvantage or was better described as discrimination in the sense used legally. The 1991 cohort was carried out with the co-operation of five medical schools*, and, because applicants could apply to five medical schools, included 70% of all UK medical school applicants and entrants. In addition we used as our outcome measure not entry to medical school, but offers made by each individual medical school to which an applicant had applied. This gives more statistical power, and also allows the study of selection at each individual medical school. Additionally, and crucially, it also circumvents the known problem that when applicants hold two or more offers then instead of medical schools selecting applicants, it is applicants who are selecting medical schools [6], and any tendency for non-White applicants preferentially to prefer some schools to others could be confounded with selection by schools and manifest as apparent discrimination by schools. The conclusions of the 1991 study were as follows:

i. Non-white applicants, as in previous studies, were significantly less likely to receive offers than white applicants, after taking demographic and educational background variables into account.

ii. There were no differences between different ethnic minority groups, but all were significantly less likely to receive offers than White applicants.

iii. The detailed questionnaires we had given to applicants allowed us to ask whether ethnic origin, *per se*, was the primary predictor of selection, or whether other highly correlated variables were better predictors. In particular we assessed whether applicants had a non-European surname, whether they had been born in the UK, whether their parents had been born in the UK, whether their grandparents had been born in the UK, and whether English was their first language. The results were clear: the best predictor was actually having a non-European surname, and none of the other factors were significant after it was taken into account. In contrast, non-European surname provided additional predictive power after ethnic group had been taken into account.

iv. The effect of having a non-European surname upon receiving an offer was studied separately at all UK medical schools, and there were found to be statistically significant differences between the schools, about half showing no significant evidence of discrimination, whereas in the other half applicants with non-European surnames were significantly less likely to receive an offer.

* Our 1981 and 1986 cohorts consisted of applicants applying for admission to St. Mary's Hospital Medical School (now part of Imperial College School of Medicine). However applicants applied (then) to six medical schools in total, and our studies looked at the outcome of their application to *all* schools, and therefore studied selection nationally.

Together these results provide a compelling case that the reduced likelihood of non-White applicants receiving an offer is, at least in part, the result of actual discrimination. If the disadvantage instead reflected real differences in unmeasured background variables between ethnic groups (which may also exist as well), then one would expect *a)* differences in the rate of selection of different ethnic groups, and *b)* selection to be predicted better by ethnic group than by surname, rather than the converse. Finally, if the poorer performance by non-White applicants reflected genuine differences in attitude, motivation, or whatever, then their likelihood of selection should be reduced at *all* schools to which they had applied. That it was only some medical schools where there were differences makes discrimination the most reasonable explanation of the results.

The 1991 cohort study also provided a detailed analysis of the locus of discrimination, using the powerful statistical technique of path analysis. It studied those applicants who apply before taking their A-levels (who are the majority). Non-white applicants were principally suffering because teachers' predictions (estimates) of high A-level grades were being discounted relative to the same predictions in White applicants. On that basis we suggested that it might be better either if A-level grade estimates (predictions) were removed from application forms, or, instead, selection were a post-A-level process.

At the same time that our 1991 cohort study was published, the same issue of the *British Medical Journal* contained another article which also claimed that there was discrimination against ethnic minorities in the process of selection of medical students[19]. That study used data obtained from UCCA, but suffered a number of serious methodological problems. In particular the outcome measure was *entry* to a school, and not receipt of an offer, which means that selection of students by schools and selection of schools by students are confounded. Additionally there was inadequate control of the important confounding variable of A-level grade, and no attempt at all to control for other confounding variables, such as date of application. In a re-analysis we concluded that the data did not show convincing evidence of disadvantage, in so far as it was possible to tell [38]. The primary reason for carrying out that re-analysis on our part was the fact that the Esmail *et al* study had published the names of medical schools which it had identified as discriminating against minorities, and, disturbingly, there was little correlation between their list and ours (we had published effect sizes but had not explicitly named schools). Clearly if discrimination *is* occurring then it ought to be found reliably and consistently in different studies using similar data. The lack of cross-validation made it difficult to know precisely what was going on, and a further study to be imperative.

In appendix 3 to this report I compare our 1991 cohort, Esmail's 1992 cohort, and the present 1996 and 1997 cohorts in the effects they find at each medical school. To summarise the appendix, our 1991 effects correlate well with the 1996 and 1997 effects, and to the same extent that the 1996 and 1997 effects correlate with each other. In contrast Esmail's 1992 effects show a minimal correlation either with our 1991 data and inconsistent correlations with the present 1996 data, although there is some correlation with the 1997 data. It is probably premature erroneous to make a final judgement on Esmail et al's analysis of the 1992 data, but there are grounds to believe that they may be erroneous in their conclusions, as previously suggested [38]. Certainly they disagree with the conclusions of our analysis of the 1991 data, and that discrepancy requires explanation.

Chronology of the present report{tc "Chronology of the present report" \l 3***}***

On February 22nd 1998 a meeting of the Council of Heads of Medical Schools discussed the question of press reports concerning possible discrimination at some medical schools against applicants from ethnic minorities. That afternoon I was contacted by Professor Robert Souhami of UCL, on behalf of the CHMS, who discussed the possibilities of carrying out a survey using data provided by UCAS. I prepared a document which was submitted to the CHMS a few days later, and which noted amongst other things a briefing document originally prepared in confidence by CHMS for Ministers, which stated:

> "that there should not be any impression that medical schools are not prepared to be open about their admissions policies and practices and to place all relevant, accurate and up to date statistical data in the public domain". *Jan 1998.*

My document made it clear that it was not easy to carry out an analysis using just UCAS data, in particular because not all relevant variables were available in the UCAS data, especially GCSE grades (and, implicitly, estimated A-level grades).

CHMS convened a meeting of Admissions Tutors and Deans on 1st April at which I made a presentation on the question and emphasised that an ideal study would have much information that was not presently available in the UCAS data, in particular GCSE grades, etc, plus information on the process of selection, including interviews and the judgements of shortlisters, etc. (including, implicitly, judgements of non-academic characteristics). The meeting agreed that it was necessary to go ahead with an analysis of those data which were available, however imperfect they might be. In particular it was emphasised that there was a commitment already in place within CHMS to put the full, relevant data on the UCAS web-site, and that it was desirable if possible to have an analysis of the data and a formal report of the main findings before the data were published, to make public interpretation easier. It was hoped at that time to have completed the analysis and to be able to put the information on the web by June/July, which set a very tight time-table indeed.

Data were provided by UCAS at the end of May, and by mid-June I had carried out a first analysis of the data. However at this time medical schools were providing a number of comments on the data they had also been sent about their individual selection processes, and it became clear that a number of problems had been found in the data sets. The decision was taken by CHMS that publication of the data would need to be delayed until September/October, and my analysis was then put on hold until a definite set of the data could be generated, which I received on July 24th. Some additional problems were then found with the new data set, but these were resolved during August, and I wrote a first draft of this report before going on leave. The draft report was circulated to medical schools during my absence. I returned in early September and received a number of useful comments and criticisms. Most important was that it became obvious that I had not carried out an optimal analysis for those applicants with Scottish Highers, and these data were therefore re-analysed. It had also been decided by this time that publication of the report was scheduled late October, with subsequent release of the data in the days following.

The draft report was discussed at a meeting with Admissions Tutors on September 15th, and at a meeting of the full Council of CHMS on 18th September. These meetings resulted in a number of important points being raised, and I agreed to incorporate some additional analyses into my report, in particular repeating the main analyses to exclude mature and resit candidates (for whom conditions are often different), and to look at the interaction between sex and ethnic origin, plus a host of other minor changes. It was also confirmed that as an independent academic researcher I would be free to submit a paper on the data to a scientific journal.

Much criticism was expressed at both meetings that the analyses were potentially flawed because of the failure to include GCSE grades, estimated (predicted) A-level grades, information on interviews, and on non-academic characteristics. Although undoubtedly the inclusion of those measures, would have improved the analysis (and in particular would have allowed the locus of disadvantage to be more clearly identified), I expressed the view that they were unlikely substantially to modify the conclusions. It is also apparent from this chronology that the nature of the problem has always been present since the original decision was made to publish the raw data, and to carry out the analysis, as was made clear in my initial report, and my presentation on the 1st of April. In so far as the analysis of the 1991 cohort had measured some of those additional variables, and in particular for GCSE grades and estimated grades, they had made no substantive difference to the conclusions, and since it seemed unlikely that the process of selection had changed dramatically since 1991 (and the analyses suggest that the indices of disadvantage show a similar pattern across schools in 1991 and 1996/7) then the conclusions of the present report, including amongst others that applicants from ethnic minorities are probably disadvantaged when they apply to some medical schools, is justified.

Appendix 2: Fairness and equality in selection in relation to disadvantage and discrimination.{tc "Appendix 2: Fairness and equality in selection in relation to disadvantage and discrimination." \l 2}

In discussing medical student selection there are a number of issues which frequently cause confusion and which it is important to clarify. Some of these issues are particularly acute in relation to the issue of possible disadvantage and/or discrimination against ethnic minorities or against male or female applicants. They are gathered together here to make the issues clearer.

Disadvantage, Discrimination, and Racism.{tc "Disadvantage, Discrimination, and Racism." \l 3} These terms are used with some care in this report. *Racism* is a set of attitudes* or ideologies[39], and as attitudes, beliefs and ideologies have not been measured or assessed, the term is not used elsewhere in the report, and no further comment can be made, except to stress that logically it is possible to have racism in the absence of discrimination, and discrimination in the absence of racism. *Disadvantage* refers to the situation in which an identified group of applicants performs less well relative to another group of applicants, *all other things being equal*; it is assessed entirely in terms of a behavioural outcome. Applicants are not disadvantaged if they are less well qualified. *Discrimination*+ can be used in two related senses. In a legal sense, in the UK, discrimination applies when a court has declared that it has occurred, as the result of a formal investigation of the Commission for Racial Equality (CRE) or the Equal Opportunity Commission (EOC). The CRE makes clear that discrimination occurs when a decision is made on the basis of a candidate's skin colour or ethnic origin, rather than their aptitude, and makes clear that it relates to "what someone does, not what they think". To a social scientist, discrimination is related to this definition, but is an inference about a social process, based on evidence (and for instance the inference of discrimination is strengthened when, as in a previous study, we found that it was surname rather than ethnic origin *per se* which predicted medical school entry). Disadvantage is an emotionally neutral term, whereas discrimination is much more emotionally laden, not least because of its legal implications. It must be emphasised that the present study on its own cannot in any way establish the presence of discrimination (although it might provide what the CRE calls '*prima facie* evidence of racial discrimination); it does however document the extent of disadvantage after taking into account a number of important background variables. The existence of discrimination might however be inferred as in all scientific research by combining the present data with other studies of related areas, just as inferences in medicine and science are rarely based on a single definitive study but from the overall pattern of evidence accumulating from different sources. Use of the term disadvantage as description does not imply that no further analysis is necessary, since an explanation of the mechanism of the disadvantage is necessary, and discrimination must be one hypothesis which must be included in the analysis.

* The web-site of the Commission for Racial Equality says that "Racism is the belief that people from some races are innately superior to others, because of things like the colour of their skin, their ethnic origin, or the country that they come from". (http://www.open.gov.uk/cre/law.htm)

+ The web-site of the Commission for Racial Equality (see previous footnote) states that "Racial discrimination occurs when someone is treated less favourably because of their skin colour, or their racial, national or ethnic origin. Discrimination occurs because of what someone does, not what they think".

Description, explanation and justification.{tc "Description, explanation and justification." \l 3} The description of disadvantage is neutral. The explanation involves finding an adequate account of the mechanisms underlying it. The justification of the mechanisms is a moral process which requires an assessment of legal issues concerning justice and fairness. Disadvantage may be adequately explained by analysing underlying mechanisms and still be unjustifiable, either in law or morally. The absence of an explanation cannot justify the continued presence of disadvantage. The existence of disadvantage is necessarily a temporary state; it might result eventually in the measurement of additional valid predictors and co-variates of outcome which mean that statistical analysis then reveals that candidates in a particular group are no longer disadvantaged; or alternatively additional evidence might be provided that discrimination is indeed the underlying mechanism, and the mechanism of the discrimination then needs to be removed.

The validity of selection criteria.{tc "The validity of selection criteria." \l 3} The phrase "all other things being equal" implies that the 'other things' are known to be valid selection criteria. A criterion is valid for selection if it can be shown to be assessed reliably and is a predictor of eventual performance in the field which is being selected. American courts have recently become much stricter on this issue, and it is not sufficient to argue merely that a characteristic *might* seem to be sensible or reasonable, but it must instead be shown to related to eventual job performance. The question of other criteria is particularly relevant in the UK to the problematic area of indirect discrimination.

Direct and indirect discrimination.{tc "Direct and indirect discrimination." \l 3} Direct discrimination is relatively straightforward, a decision being made explicitly on the basis of ethnic origin, and in medical education it was described by the CRE in its investigation into St George's in the 1980s[40]. Indirect discrimination is more subtle, and occurs when a selection criterion is used which affects candidates from one group more than another and the criterion cannot be justified. Applicants from ethnic minorities do have lower A-level grades on average than White applicants, but that is not indirect discrimination as long as it can be demonstrated that A-levels are a valid outcome predictor (and they do indeed predict performance in basic medical science and clinical examinations in medical school[41]). GCSE grades are more problematic. Applicants from ethnic minorities do seem to have lower GCSE grades relative to the A-level grades they will eventually attain than do white applicants[10]. Any selection process which emphasises GCSE grades over attained A-level grades will therefore tend to disadvantage non-white applicants. As long as GCSE grades are a valid predictor of eventual outcome, that is justifiable. However if data on basic medical science and clinical examination performance suggest that GCSE grades do not provide any additional prediction of exam performance over and above that provided by A-level grades it might be argued that use of GCSE grades in selection could be indirectly discriminating against non-white applicants.

Non-academic criteria, and other unmeasured factors.{tc "Non-academic criteria, and other unmeasured factors." \l 3} No study can measure everything that might possibly be relevant to a process, there being an infinity of measures which might be important in explanation. The explanation of disadvantage might invoke the assessment of motivation, interest, commitment or many other non-academic factors, which may well differ between white and non-white applicants. However if they are not measured systematically or they are not shown to be valid predictors of professional performance, then invoking them as a justification of disadvantage is likely to be a difficult process. In the words of Hughlings Jackson, "absence of evidence is not evidence of absence".

Stated selection policies.{tc "Stated selection policies." \l 3} It is sometimes argued that as long as an institution states clearly to applicants that its selection policy requires candidates to have a particular qualification (say, GCSE grade A in Maths) that it is then justifiable to reject candidates without that qualification. It is not entirely clear that that is so. Once again, the problem arises a), in general, whether the criterion is valid as a predictor, and if it is not then it could be vulnerable to challenge; and b), specifically in relation to indirect discrimination, whether a particular ethnic group might find it difficult to achieve the criterion. It could also be argued that many stated policies on selection do not provide all of the information that an applicant might require[23].

Population proportions.{tc "Population proportions." \l 3} Comparison of the proportions of ethnic groups in medical school applicants, university applicants in general, and the age-related population shows clearly that applicants from ethnic minorities are over-represented relative to population proportions. That however can be of no relevance to the presence of disadvantage. UK law does not allow 'social engineering', or 'positive discrimination' to try and make groups of entrants equivalent in proportions to any reference group. Instead the law requires that *individuals* are treated equivalently. The fact that many members of one sub-group choose to apply for a particular career whereas members of another subgroup choose not to apply for that career is a reflection of their freedom to apply as they wish and is irrelevant to the explanation of disadvantage. The law in the UK is substantially different from that of the United States in this respect.

Individual versus group characteristics. It is sometimes claimed that as a group certain types of individuals do less well or better on some outcome measure. That may well be true and is of some interest sociologically. It does not however provide a justification for disadvantage. To take a pertinent example, it is a commonplace in the literature on doctor-patient communication to find that females tend to have better communication skills than males. That alone however cannot provide a justification for females being more likely to be made offers. It may however be justifiable if communicative ability were assessed individually in applicants, using a test that is reliable and valid, and high scorers of either sex were then selected. Selection is then occurring based on the individual's attributes not the group's attributes. It should also be noted that such selection would act in the long run to reduce differences in communicative ability between male and female doctors, whereas the mere admission of fewer men would increase the aggregate communicative ability of the profession but would not alter the difference between males and females in the profession.

Over-emphasis upon A-levels.{tc "Over-emphasis upon A-levels." \l 3} The argument has been made that there is a strong case for reducing the emphasis placed upon A-levels in medical school selection, and that therefore any statistical analysis which equates "well-qualified" with "high A-level grades" is inevitably flawed. That does indeed seem to be the case[42], and as long as other measures are available of "well-qualified" then the argument is valid. However it should be remembered that since the non-White applicants in this study have overall lower A-level grades than White applicants, that any system which makes less emphasis on A-level grades would tend to expect even higher proportions of non-White applicants to receive offers, and hence the extent of disadvantage would be greater than that reported here.

Estimated (predicted) A-level grades.{tc "Estimated (predicted) A-level grades." \l 3} The first stage of selection in many medical schools relies on teachers' estimates of the A-level grades an applicant will achieve. This is a difficult process to justify, given that such estimates are known to be biassed (teachers consistently over-estimate in all studies reported), and are not particularly reliable (the correlation with eventual grade is relatively poor)[43]. More problematic is that estimated grades appear to provide no useful information over and above actual achieved A-level grades in predicting medical school performance, and there is the real possibility that in rejecting an applicant because of poor estimated grades, the prophecy becomes self-fulfilling, in what educational psychologists call the Pygmalion effect (if you tell someone they are a failure then that is demotivating and subsequently they are likely actually to fail). Even if disadvantage can be *explained* in terms of differences between ethnic groups in estimated grades*, it is still difficult to *justify* such a criterion, since in effect it is to substitute the gold standard of A-level grades underwritten by the careful, reliable processes of the A-level examination boards, with the base metal of an unreliable, potentially biassed guess made by a single person a year or so before examinations are actually taken. If disadvantage is indeed occurring because of the need to use estimated grades rather than achieved grades then the desirable course of action would seem to be to move to a system of post-A-level application, rather than to argue for the primacy of estimated grades.

The imperative to reduce the number of applications.{tc "The imperative to reduce the number of applications." \l 3} Admissions tutors have pointed out that they are under extreme pressure to reduce the number of applications they receive to manageable proportions, as it is not possible, for instance, to interview any but a fraction of the total number of applicants. That argument is well accepted, and there is indeed a problem to be solved. However it cannot be a justification for putting undue emphasis upon GCSE grades, estimated A-level grades, or whatever if they are possibly resulting in indirect discrimination. Several solutions are possible, one of which is to adopt some variant of the Dutch model of a lottery; although it is clearly better to use validated selection, a lottery at the least has the advantage of being fair, and has reasonable precedents (including the selection of conscripts in the US in the Vietnam War). Better perhaps would be to reduce the sheer mass of applications to which schools are subject (particularly since although each school receives masses of applications, about 40% of applicants will eventually enter medical school, and these are probably about 70% of all of the qualified pool). The selection ratio is therefore high at the level of the school but low at the level of the individual applicant. If applicants could make fewer applications (say, to three schools), and applicants were qualified (i.e. the system was post-A-level) then institutions could afford to interview the majority of their candidates, as schools, candidates and public would probably find desirable.

* The argument has been made to me that the estimated grades provided by schools are themselves biassed in the case of applicants from ethnic minorities, and that the locus of any problem is at the level of the schools, not the medical schools. I do not find this explanation convincing, and it is inconsistent with data from the 1991 selection cohort which found that estimates of A-level grades were equally accurate in white and non-white applicants, but that the difference arose because medical schools discounted high estimated grades in non-white applicants, relative to the same estimated grades in a white applicant.

Appendix 3: Comparison of disadvantage of ethnic minorities at individual medical schools in 1991, 1992, 1996 and 1997.{tc "Appendix 3: Comparison of disadvantage of ethnic minorities at individual medical schools in 1991, 1992, 1996 and 1997." \l 2}

In 1995 two papers were published in the *British Medical Journal* [13,19], each purporting to show disadvantage in ethnic minority applicants applying to medical schools, and estimating the extent of the disadvantage in each UK school. Unfortunately there was little agreement between the pattern of disadvantage claimed in the two studies (although that was not obvious to others since in our own paper[13] we left medical schools anonymised). In the introduction to this report I have summarised the methodological problems with the Esmail paper[19], as we did at the time in the *BMJ*[38]. Here I look at the findings of the two studies in detail, and compare them with the 1996 and 1997 data.

The table below summarises the effect sizes for the disadvantage of ethnic minorities in the four separate sets of data (see note at end of appendix on medical school identities). Note that the 1991 study used non-European surname whereas the others used the UCAS ethnic origin, and that the 1991 study took slightly different background variables into account from the 1996 and 1997 studies (the 1992 study took only A-levels into account, and that only on the basis of stratification into two groups).

SCHOOL	1991 Study (McManus et al) (NES91)			1992 study (Esmail et al) (ESM92)			1996 cohort (this study) (ETH96)			1997 cohort (this study) (ETH97)		
	Odds ratio	Lower 95% CI	Upper 95% CI	Odds ratio	Lower 95% CI	Upper 95% CI	Odds ratio	Lower 95% CI	Upper 95% CI	Odds ratio	Lower 95% CI	Upper 95% CI
A20: Aberdeen	7.54	2.37	23.96	0.72	0.18	4.17	1.73	1.07	2.80	1.95	1.14	3.33
B32: Birmingham	1.42	0.90	2.23	1.88	1.12	3.26	1.90	1.42	2.53	1.23	0.87	1.73
B78: Bristol	1.07	0.63	1.82	1.22	0.66	2.45	1.15	0.82	1.61	1.23	0.87	1.73
C05: Cambridge	1.70	0.94	3.06	1.88	1.21	2.97	1.41	1.00	1.99	1.86	1.32	2.63
C40: CXWMS	1.90	1.33	2.70	1.93	1.30	2.95	2.31	1.75	3.05	2.16	1.61	2.89
D65: Dundee	3.90	1.81	8.37	1.76	0.80	4.47	1.94	1.23	3.06	1.69	1.09	2.62
E56: Edinburgh	1.45	0.85	2.46	0.64	0.37	1.09	1.47	1.02	2.11	1.40	1.00	1.95
G28: Glasgow	2.29	1.15	4.55	1.81	0.51	7.72	2.47	1.49	4.08	1.61	0.99	2.62
I50: Imperial College	1.34	0.92	1.94	2.03	1.20	3.56	2.31	1.72	3.09	2.80	2.02	3.88
K72: King's College	1.90	1.26	2.86	0.99	0.61	1.62	1.81	1.31	2.50	2.13	1.54	2.94
L23: Leeds	1.70	1.19	2.42	1.61	1.01	2.60	1.85	1.45	2.35	2.45	1.91	3.15
L34: Leicester	2.10	1.23	3.56	1.06	0.64	1.79	1.70	1.31	2.21	1.49	1.17	1.91
L41: Liverpool	1.39	0.87	2.23	0.84	0.52	1.39	3.62	2.26	5.78	1.70	1.26	2.29
M20: Manchester	1.99	1.35	2.95	0.83	0.59	1.18	1.61	1.29	2.03	1.49	1.19	1.87
N21: Newcastle	0.76	0.46	1.27	1.46	0.73	2.99	1.29	0.86	1.95	0.97	0.69	1.37
N84: Nottingham	1.15	0.72	1.84	1.98	1.04	4.14	1.66	1.14	2.41	2.46	1.67	3.62
O33: Oxford	1.23	0.54	2.81	1.63	0.86	3.26	1.44	0.82	2.54	2.84	1.51	5.34
Q50: QMW	1.75	1.09	2.80	1.72	1.09	2.82	1.98	1.50	2.61	2.42	1.87	3.12
Q75: Queen's, Belfast	7.69	0.75	79.23	2.71	0.15	159.00	4.22	1.22	14.57	3.85	1.04	14.26
R60: Royal Free	1.38	0.91	2.08	1.63	0.86	3.26	1.96	1.39	2.76	1.28	0.93	1.76
S18: Sheffield	1.82	1.23	2.70	1.55	0.92	2.69	1.80	1.32	2.45	1.97	1.49	2.60
S27: Southampton	1.14	0.66	1.97	1.19	0.63	2.41	2.23	1.52	3.27	1.45	1.00	2.11
S36: St. Andrews	1.72	0.38	7.76	3.83	1.12	20.53	2.32	1.35	3.95	3.01	1.76	5.15
S49: St. George's	1.17	0.78	1.77	1.85	1.23	2.83	1.47	1.07	2.04	1.91	1.29	2.81
U60: UMDS	1.86	1.31	2.65	0.96	0.65	1.40	2.06	1.61	2.65	2.46	1.90	3.19
U80: UCL	2.03	1.52	2.73	1.50	0.98	2.35	2.63	2.04	3.40	2.26	1.77	2.88
W10: Wales	1.03	0.61	1.75	1.79	1.00	3.38	1.72	1.22	2.44	1.74	1.09	2.76

The similarity of the estimates at different schools in the four studies can be calculated from their correlation coefficients. These are carried out on the log(odds ratio), and, since the standard errors of estimates vary between schools, are presented both in an unweighted form and a weighted form, the weighting in the latter case being by 1/sqrt(se) of the 1997 data.

```
Correlation coefficients (unweighted):
             NES91      ESM92      ETH96      ETH97
NES91       1.0000     -.0317      .4572      .4026
ESM92       -.0317     1.0000      .2424      .4417
ETH96        .4572      .2424     1.0000      .4752
ETH97        .4026      .4417      .4752     1.0000

Correlation coefficients (weighted by 1997 SE).
             NES91      ESM92      ETH96      ETH97
NES91       1.0000     -.0944      .3710      .3517
ESM92       -.0944     1.0000      .1713      .4008
ETH96        .3710      .1713     1.0000      .4320
ETH97        .3517      .4008      .4320     1.0000
```

Analysis will be restricted to the more appropriate weighted correlations. As noted before, the correlation between the 1991 (McManus) and 1992 (Esmail) cohorts is effectively zero, as was apparent from scrutiny of the estimates. The 1996 and 1997 estimates show a reasonable correlation* of .4320, and the 1991 estimates correlate to a similar extent with the 1996 and 1997 estimates (.3710. and .3517). In contrast the Esmail estimates based on the 1992 data correlate only .1713 and .4320 with the 1996 and 1997 estimates. The discrepancy between the latter two values is itself mysterious and it is not clear which of the two is the better estimate.

The Esmail estimates overall correlate relatively poorly with the later data (at least for 1996), whereas the 1991 McManus estimates correlate nearly as much with the 1996 and 1997 estimates as the 1996 and 1997 estimates agree with each other. It is clear that the 1992 and 1991 estimates are inconsistent and hence must be doing something different; what is not clear, in part because of the discrepancy between the correlation of the 1992 data with 1996/7 data, is the extent to which the conclusions of Esmail[19] are statistically reliable. Final judgement is perhaps best reserved until more robust estimates of between year correlations can be obtained from multilevel modelling.

Note: In 1991 and 1992 The Royal London and St. Bartholomew's Hospital Schools of Medicine were independent but in 1997/8 were merged as QMW. Likewise in 1991 and 1992 St. Thomas's and Guy's Hospital Medical Schools were independent, but merged in 1996/7 as UMDS. For the purposes of this appendix, 1996/7 names have been used, and odds ratios for 1991/2 calculated as the geometric mean of odds ratios of the constituent schools.

* It should be noted that this method of calculating the correlations is far from optimal. Better would be to use multi-level modelling, which uses all the data in a more efficient manner. That however would have been too time-consuming for the present study, but plans are in hand to carry it out in the future.

Appendix 4: List of computer readable files available from the author{tc "Appendix 4: List of computer readable files available from the author" \l 2}

The following files are available from the author at i.mcmanus@ucl.ac.uk or i.mcmanus@chime.ucl.ac.uk. They provide the statistical and computational underpinning of this report on these data.

i. The main SPSS syntax file, CHMS9697.SPS for analysing the EXCEL work sheets and deriving all the basic variables used in the analysis, and for creating two SPSS system files, CAND9697.SAV and APPN9697.SAV. 31kB unzipped (9KB zipped).

ii. APPN9697.SAV The main SPSS system file organised at the level of the *application*. Each record consists of one application by a candidate, with each candidate being allocated multiple records, one for each application. 20MB unzipped (2.3M zipped).

iii. CAND9697.SAV The main SPSS system file organised at the level of the *candidate*. Each record consists of information relating to a single candidate, with some variables aggregated across that candidate's multiple applications (in particular OFFER, which indicates whether the candidate any offers from any of their applications). 3MB unzipped (416KB zipped).

iv. REPORT.SPS An SPSS syntax file which can be used to run all the logistic regressions described in the present report. Code for running descriptive statistics has mostly been omitted since it is very straightforward and not usually ambiguous. 22KB unzipped (4K zipped).

Appendix 5: Mean A-level grade and UCAS A-level points.{tc "Appendix 5: Mean A-level grade and UCAS A-level points." \l 2}

UCAS conventionally presents its results in terms of A-level points, a score calculated on the basis of a grade A=10, B=8, C=6, D=4, E=2 and O/F=0, with AS levels scoring 5,4,3,2, and 1 respectively. For candidates who take more than 4 A- or AS-levels or who have taken resits, the grade is calculated on the basis of the best grades attained up to a maximum of three. The score therefore has a maximum of 30, and candidates who take 3 A-levels will have even valued scores. In addition the score is calculated including *all* A-levels, in particular including General Studies. The latter makes the score not particularly useful for present purposes. It also has the problem with a very highly qualified group of applicants such as those applying for medicine, many of whom have four or more A-levels, that there is a strong ceiling effect which makes it difficult to differentiate well qualified applicants. In previous studies we have found that it is better to calculate two separate scores, one the number of A-levels taken (excluding General Studies and AS-levels), and the other the mean grade attained in all subjects taken. In addition separate scores are calculated here for General Studies and AS-levels since they seem to behave differently in medical student selection.

The relationship between UCAS grade points, mean A-level grade and number of A-levels is shown in the figure below (lines represent Lowess regressions).

Figure:

NB This figure is in colour in the original — it will not reproduce well in photocopies.

Overall UCAS A-level points and mean A-level grade correlate .9498,indicating that for most purposes they behave in the same way, and therefore little in the analyses will be affected by substituting one for the other. However the figure does show that mean A-level grade gives more credit to the applicant who has gained AA on the basis of just two A-levels than does the UCAS system. That said, such candidates in general do *not* tend to get AA, whereas many more candidates with 3 or more A-levels do. Ultimately it makes little difference which method is used

— my own preference is to use a method which I have also used in the 1981, 1986 and 1991 cohorts, to provide some sort of comparability.

Appendix 6: List of non-Science subjects{tc "Appendix 6: List of non-Science subjects" \l 2} (Provided by UCAS).

Science subjects.

The following is a list of science subjects excluded in some of the calculations for number and points scores (e.g. Axn, Asxn, DASxn)

A51	Anatomy Physiology And Health	B1
N21	Nutrition. Sc.	B4
H51	Health	B9
B11	Biology	C1
B12	Nuffield Biology	C1
B13	Human Biology	C1
B14	Social Biology	C1
B15	Human/Social Biology	C1
B21	Botany	C2
B22	Project Botany	C2
Z11	Zoology	C3
A31	Agricultural Science	D2
H41	Horticultural Science	D9
L51	Land-Based Occupations (Arig/E	D9
C11	Chemistry	F1
C12	Nuffield Chemistry	F1
P11	Physics	F3
P12	Nuffield Physics	F3
P13	Physics And Mathematics	F3
P14	Physics and Chemistry	F3
P21	Physical Science	F3
P22	Nuffield Physical Science	F3
G21	Geology	F6
S15	Marine Sci.	F7
G14	Physical Geography	F8
E51	Environmental Science	F9
E52	Environmental Studies	F9
C61	Computations Endorsement	G1
L31	Pure Mathematics 1	G1
L32	Pure Mathematics 2	G1
L33	Pure Mathematics 3	G1
L34	Pure Mathematics 4	G1
L35	Mechanics 1	G1
L36	Mechanics 2	G1
L37	Mechanics 3	G1
L38	Mechanics 4	G1
M11	Mathematics	G1
M12	Mei Mathematics	G1
M13	Smp Mathematics	G1
M21	Pure Mathematics	G1
M22	Pure & Applied Mathematics	G1
M23	Pure Maths. & Statistics	G1
M24	Pure Maths. With Computations	G1
M25	Mei Pure Mathematics	G1
M26	Pure Maths With Mechanics	G1
M27	Further Pure Maths & Mechanics	G1
M31	Additional Mathematics	G1
M32	Smp Additional Mathematics	G1
M33	Applied Mathematics	G1
M34	Mei Applied Mathematics	G1
M35	Further Mathematics	G1
M36	Smp Further Mathematics	G1
M37	Mei Further Mathematics	G1
M38	Applied Maths. & Statistics	G1
M39	Maths With Applications	G1
M41	Mathematics (i)	G1
M42	Mathematics (ii)	G1
M43	Mathematics (iii)	G1
M44	Mathematics (iv)	G1
M45	Mathematics (v)	G1
M46	Maths. (Mechanics With Stats)	G1
M47	Mathematics (Statistics)	G1
M65	Applied Mechanics	G1
M66	Mechanics	G1
N11	Navigation	G1
N31	Nuffield Mathematics	G1
N32	Nuffield Further Mathematics	G1
L39	Statistics 1	G4
L40	Statistics 2	G4
L41	Statistics 10	G4
L42	Statistics 20	G4
L43	Statistics 3	G4
L44	Statistics 4	G4
S21	Statistics	G4
S22	Statistics Endorsement	G4
C21	Computer Science	G5
C22	Computer Studies	G5
C23	Computer Science Endorsement	G5
C24	Computing	G5
C25	Computer Awareness	G5
I21	Information Technology	G5
I22	Information Tech & Business	G5
D11	Technical Drawing	H1
D12	Geometric/Mechanical Drawing	H1
D13	Geometric/Engineering Drawing	H1
D14	Geometric/Building Drawing	H1
D15	Technical/Engineering Drawing	H1
D16	Engineering Drawing	H1
E31	Engineering	H1
E32	Engineering Science	H1
E33	Engineering Drawing And Design	H1
E34	Elements Of Engineering Design	H1
E35	Engineering / Technology	H1
G42	Technical Graphics	H1
G43	Applied Engineering Graphics	H1
B51	Building Construction	H2
M60	Motor Vehicle Maintenance	H3
E41	Electronic Systems	H6
E42	Electronics Endorsement	H6
E43	Electronics	H6
P41	Psychology	L7

The code for General studies is:

G51	General Studies	V9

Appendix 7: Comparison of proportions of ethnic minorities in Census data, UCAS applicants, and medical school applicants.{tc "*Appendix 7: Comparison of proportions of ethnic minorities in Census data, UCAS applicants, and medical school applicants.*" \l 2}

Comparison of proportions of ethnic groups in population (calculated from 1991 census for group then aged 10-14[44]), UCAS home applicants and home entrants (1996+1997), applicants to medical school (1996+1997) and applicants receiving one or more offers.

	Population	UCAS overall		Medicine only	
Percentages	(10-14, 1991)	Applicants	Entrants	%Applicants	%Offers
White	**91.32**	**84.98**	**86.07**	**64.86**	**74.03**
Bangladeshi	0.70	0.66	0.61	1.87	1.24
Chinese	0.35	0.92	0.96	2.14	1.81
Indian	2.37	4.10	4.08	11.96	10.46
Pakistani	1.92	2.46	2.24	6.76	3.99
Other Asian	0.42	1.23	1.16	5.31	4.19
All Asian	**5.75**	**9.38**	**9.05**	**28.03**	**21.69**
Black African	0.46	2.07	1.69	2.85	1.24
Black Caribbean	0.91	1.31	1.10	0.49	0.25
Black Other	0.66	0.59	0.50	0.45	0.24
All Black	**2.03**	**3.97**	**3.30**	**3.79**	**1.72**
Other	**0.90**	**1.54**	**1.58**	**3.31**	**2.55**
N	3311711	763212	571607	18943	11162

Note: Census data provides no information on the proportions of individuals not answering the ethnic question. For UCAS data overall about 6.5% of applicants do not describe their ethnic origin, and for medical applicants about 3.2% of applicants do not describe their ethnic origin. These ‘Not known’ individuals are omitted from the above table so that all percentages sum to 100%, and comparison between the data sets is facilitated.

Appendix 8: Classification of medical schools as 'local'{tc "Appendix 8: Classification of medical schools as 'local'" \l 2}

The definition used for the present analyses of a 'local' applicant to each medical school. It is accepted that to some extent these definitions are arbitrary, and further exploration of this questions is desirable, ideally using post-code information.

	A: North	B: Yorkshire/Humberside	C:North West	D: East Midlands	E: West Midlands	F: East Anglia	G: Greater London	H: South East	I: South West	J: Wales	K: Northern Ireland	L: Scotland
A20: Aberdeen												/
B32: Birmingham			/	/	/							
B78: Bristol					/				/	/		
C05: Cambridge						/	/	/				
C40: CXWMS							/	/				
D65: Dundee												/
E56: Edinburgh	/											/
G28: Glasgow			/									/
I50: Imperial							/	/				
K72: King's College							/	/				
L23: Leeds		/	/									
L34: Leicester		/		/	/							
L41: Liverpool		/	/		/							
M20: Manchester		/	/		/							
N21: Newcastle	/	/	/									
N84: Nottingham		/	/	/	/							
O33: Oxford							/	/	/			
Q50: QMW							/	/				
Q75: Queen's, Belfast											/	
R60: Royal Free HMS							/	/				
S18: Sheffield		/	/	/	/							
S27: Southampton							/	/	/			
S36: St. Andrews												/
S49: St. George's							/	/				
U60: UMDS							/	/				
U80: UCL							/	/				
W10: Wales									/	/		

Appendix 9: Description of applicants to each medical school{tc "Appendix 9: Description of applicants to each medical school" \l 2}.

Mean (or percent) of applicants at each medical school.

	Number of applicants 1996+1997	Mean A-level grade	Number of A-levels	% Non-science A-levels	% Resits	%General Studies taken	General Studies Grade	AS-levels	App'n date	% Previous app'n	% Insurn'ce choice	% < 5 med'ne app'ns	% Six med'ne app'ns	% Gap year
A20: Aberdeen	1959	7.95	3.14	6	5	7	3.84	0.17	2.53	8	42	24	6	5
B32: Birmingham	3780	8.29	3.17	21	4	35	3.87	0.23	1.93	6	26	6	6	6
B78: Bristol	3817	8.46	3.23	27	4	27	3.91	0.25	1.94	6	23	9	6	7
C05: Cambridge	1927	9.26	3.47	18	2	29	4.03	0.31	1.52	4	21	6	3	8
C40: CXWMS	4413	7.52	3.17	20	24	18	3.76	0.19	2.12	24	21	7	6	4
D65: Dundee	2437	7.86	3.14	11	7	11	3.81	0.17	2.49	10	39	24	7	4
E56: Edinburgh	3816	8.54	3.25	17	3	23	3.94	0.23	2.16	4	33	13	6	5
G28: Glasgow	2072	8.07	3.16	9	4	10	3.85	0.18	2.48	6	43	20	6	5
I50: Imperial	4110	7.79	3.18	20	10	17	3.83	0.22	2.06	11	26	7	5	6
K72: King's College	3947	7.71	3.16	21	6	17	3.82	0.2	2.18	8	26	10	7	5
L23: Leeds	4969	8.17	3.18	20	11	39	3.84	0.21	2	11	26	7	7	5
L34: Leicester	3582	7.87	3.14	20	11	33	3.77	0.2	2.03	13	25	8	8	6
L41: Liverpool	3256	8.06	3.17	21	16	39	3.81	0.2	2.11	15	29	8	8	5
M20: Manchester	4684	8.11	3.16	23	6	34	3.83	0.21	2.1	7	29	10	7	6
N21: Newcastle	3814	8.29	3.19	24	12	39	3.89	0.22	2.05	14	29	8	7	6
N84: Nottingham	5148	8.58	3.24	22	6	34	3.94	0.25	1.9	7	25	7	6	6
O33: Oxford	1049	8.95	3.38	23	3	30	4.01	0.31	1.56	4	23	6	6	4
Q50: QMW	3782	7.48	3.11	21	10	20	3.78	0.18	2.11	13	26	9	6	6
Q75: Queen's, Belfast	906	8.53	3.2	19	10	2	3.84	0.09	2.41	11	47	27	5	4
R60: Royal Free HMS	2950	7.66	3.2	20	30	16	3.78	0.2	2.17	28	20	6	7	5
S18: Sheffield	5367	8.1	3.19	23	18	37	3.82	0.21	2.08	17	25	9	7	5
S27: Southampton	3488	7.97	3.18	23	7	20	3.84	0.23	2.01	11	23	7	7	6
S36: St. Andrews	1364	8.06	3.17	7	17	19	3.84	0.22	2.37	20	36	20	5	3
S49: St. George's	2854	7.45	3.17	20	19	16	3.8	0.2	2.19	18	20	8	8	6
U60: UMDS	4540	7.74	3.15	20	8	18	3.8	0.21	2.05	11	23	7	5	5
U80: UCL	6002	7.87	3.19	20	18	19	3.81	0.22	2.07	17	21	7	5	5
W10: Wales	2643	8.03	3.17	25	10	25	3.84	0.2	2.06	11	24	11	7	6

Descriptive statistics (continued): Demographic variables.

	Number of applicants 1996+1997	% Female	% Mature	Social class	% Ethnic minority	% Indep't school	% FE/HE	% Grammar schoo	% Sixth Form Coll/ Other	%Local	Mean number of Scottish Highers	Mean grade at Scottish Highers	Per cent missing values
A20: Aberdeen	1959	53	13	1.92	16	24	5	14	19	62	5.93	5.29	17.3
B32: Birmingham	3780	55	9	1.93	31	31	9	12	25	38	na	na	12.2
B78: Bristol	3817	55	13	1.84	22	36	9	12	23	30	na	na	12.9
C05: Cambridge	1927	46	2	1.77	37	46	4	15	12	48	na	na	11.7
C40: CXWMS	4413	48	16	1.95	55	35	14	8	28	65	na	na	13.4
D65: Dundee	2437	52	15	1.97	19	19	7	17	23	48	5.91	5.16	16.6
E56: Edinburgh	3816	51	11	1.86	19	33	6	13	19	35	5.88	5.39	14.6
G28: Glasgow	2072	54	14	1.91	14	22	5	16	21	61	5.89	5.34	16.8
I50: Imperial	4110	47	14	1.97	48	33	12	10	25	62	na	na	13.5
K72: King's College	3947	47	17	2.01	55	28	13	11	29	65	na	na	14.4
L23: Leeds	4969	51	10	1.94	30	30	9	10	26	32	na	na	12
L34: Leicester	3582	51	16	2	36	23	11	10	32	36	na	na	12.8
L41: Liverpool	3256	52	12	1.99	27	24	11	11	31	46	na	na	12.2
M20: Manchester	4684	51	12	1.98	33	27	10	12	27	41	na	na	12.7
N21: Newcastle	3814	58	11	1.89	20	32	10	9	24	41	na	na	12.6
N84: Nottingham	5148	52	8	1.89	25	33	7	12	22	38	na	na	12.1
O33: Oxford	1049	45	4	1.86	33	43	6	12	16	53	na	na	12.3
Q50: QMW	3782	50	14	2.01	50	27	14	13	27	61	na	na	13.5
Q75: Queen's, Belfast	906	54	10	2.09	7	2	5	66	21	86	na	na	13.8
R60: Royal Free HMS	2950	51	20	1.89	50	35	12	7	32	68	na	na	13.7
S18: Sheffield	5367	54	14	1.98	30	29	12	8	29	49	na	na	12.7
S27: Southampton	3488	51	20	1.91	27	28	11	10	29	66	na	na	13.5
S36: St. Andrews	1364	51	6	1.89	25	41	6	7	14	51	5.91	5.15	15.3
S49: St. George's	2854	48	23	1.94	50	30	15	8	32	67	na	na	14.3
U60: UMDS	4540	50	14	1.95	52	34	12	11	26	66	na	na	13.5
U80: UCL	6002	50	13	1.92	52	37	12	10	25	64	na	na	13.4
W10: Wales	2643	56	16	1.95	26	23	14	9	26	40	na	na	13.4

Appendix 10: Summary of selection at individual medical schools{tc "Appendix 10: Summary of selection at individual medical schools" \l 2}

Logistic regression of likelihood of receiving an offer at each individual medical school in 1996 and 1997. Readers are directed to the section on statistical significance for the need for applying different criteria for studying only a *single* institution, as opposed to looking at *all* institutions simultaneously. Significance levels in the column marked 'Sig' are *nominal* significance levels.

A20: The University of Aberdeen{tc "A20: The University of Aberdeen" \l 3}

MEDSCHL: A20 YEARAPP: 96.00

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3386	.0704	23.1610	1	.0000	.1219	1.4030
AN	-.2034	.2375	.7333	1	.3918	.0000	.8159
NONSCIA	.0835	.3602	.0537	1	.8168	.0000	1.0870
RESITS	-.7155	.4086	3.0667	1	.0799	-.0274	.4889
GSTAKEN	1.1182	.3617	9.5588	1	.0020	.0729	3.0594
GSGRADE1	.5892	.3086	3.6457	1	.0562	.0340	1.8026
ASN	.1263	.3356	.1417	1	.7066	.0000	1.1347
APPDATE1	-.5520	.1590	12.0538	1	.0005	-.0840	.5758
PREVAPP	-.3194	.3357	.9050	1	.3415	.0000	.7266
INSURNCE	.1092	.2283	.2288	1	.6324	.0000	1.1154
LE4MED	-1.1572	.2504	21.3485	1	.0000	-.1166	.3144
MEDAPP6	.2269	.4022	.3184	1	.5726	.0000	1.2548
SEX1	.3520	.1652	4.5415	1	.0331	.0423	1.4220
MATURE	-.3964	.3424	1.3400	1	.2470	.0000	.6728
SOCIAL2	.0445	.0975	.2089	1	.6476	.0000	1.0456
ETHNIC3	-.5493	.2455	5.0079	1	.0252	-.0460	.5774
INDEPEND	-.1551	.2383	.4237	1	.5151	.0000	.8563
FEHE	.2091	.4237	.2435	1	.6217	.0000	1.2326
GRAMMAR	.8927	.3449	6.7009	1	.0096	.0575	2.4418
OTHSCHL	-.3213	.3031	1.1236	1	.2891	.0000	.7252
LOCAL	1.6704	.2851	34.3323	1	.0000	.1507	5.3141
SHN	.3712	.1477	6.3163	1	.0120	.0551	1.4495
SHG	1.8914	.1972	91.9527	1	.0000	.2514	6.6285
Constant	-14.3568	2.1898	42.9845	1	.0000		

MEDSCHL: A20 YEARAPP: 97.00

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3932	.0853	21.2314	1	.0000	.1279	1.4817
AN	-.3011	.2756	1.1940	1	.2745	.0000	.7400
NONSCIA	-.1519	.3892	.1523	1	.6963	.0000	.8591
RESITS	-.6906	.4900	1.9869	1	.1587	.0000	.5013
GSTAKEN	.9435	.3936	5.7456	1	.0165	.0565	2.5689
GSGRADE1	.1809	.2822	.4110	1	.5215	.0000	1.1983
ASN	.1906	.4090	.2171	1	.6412	.0000	1.2099
APPDATE1	-.2882	.1599	3.2491	1	.0715	-.0326	.7496
PREVAPP	-.0642	.3811	.0284	1	.8663	.0000	.9378
INSURNCE	.3023	.2474	1.4933	1	.2217	.0000	1.3529
LE4MED	-.6751	.2819	5.7340	1	.0166	-.0564	.5091
MEDAPP6	.5649	.4124	1.8759	1	.1708	.0000	1.7592
SEX1	.2430	.1904	1.6286	1	.2019	.0000	1.2750
MATURE	-.7583	.3904	3.7720	1	.0521	-.0388	.4685
SOCIAL2	.0187	.1147	.0267	1	.8702	.0000	1.0189
ETHNIC3	-.6695	.2720	6.0567	1	.0139	-.0588	.5120
INDEPEND	-.1406	.2647	.2821	1	.5953	.0000	.8688
FEHE	-.2110	.4609	.2096	1	.6471	.0000	.8097
GRAMMAR	.7811	.3639	4.6063	1	.0319	.0471	2.1839
OTHSCHL	-1.1213	.3416	10.7776	1	.0010	-.0864	.3259
LOCAL	.8134	.2749	8.7584	1	.0031	.0758	2.2556
SHN	.6249	.1812	11.8948	1	.0006	.0918	1.8681

SHG	1.9531	.2491	61.4731	1	.0000	.2250	7.0504
Constant	-13.8445	2.6070	28.2005	1	.0000		

B32: The University of Birmingham{tc "B32: The University of Birmingham" \l 3}

MEDSCHL: B32 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3775	.0499	57.2602	1	.0000	.1620	1.4586
AN	.1307	.1245	1.1016	1	.2939	.0000	1.1396
NONSCIA	.1450	.1487	.9508	1	.3295	.0000	1.1560
RESITS	-.5550	.4098	1.8337	1	.1757	.0000	.5741
GSTAKEN	-.0036	.1369	.0007	1	.9792	.0000	.9964
GSGRADE1	.1069	.0960	1.2402	1	.2654	.0000	1.1128
ASN	.0208	.1129	.0339	1	.8540	.0000	1.0210
APPDATE1	-.7670	.1014	57.2486	1	.0000	-.1620	.4644
PREVAPP	.1351	.2720	.2466	1	.6195	.0000	1.1446
INSURNCE	-.4174	.1478	7.9701	1	.0048	-.0533	.6588
LE4MED	-.3638	.2894	1.5801	1	.2087	.0000	.6950
MEDAPP6	-.5534	.2838	3.8030	1	.0512	-.0293	.5750
SEX1	-.3217	.1221	6.9413	1	.0084	-.0484	.7250
MATURE	-.5511	.3405	2.6195	1	.1056	-.0172	.5763
SOCIAL2	-.0449	.0686	.4283	1	.5128	.0000	.9561
ETHNIC3	-.6409	.1468	19.0514	1	.0000	-.0900	.5268
INDEPEND	-.0538	.1600	.1132	1	.7365	.0000	.9476
FEHE	.1606	.2644	.3686	1	.5437	.0000	1.1742
GRAMMAR	.1074	.2038	.2777	1	.5982	.0000	1.1134
OTHSCHL	-.2039	.1880	1.1767	1	.2780	.0000	.8155
LOCAL	.3361	.1329	6.3932	1	.0115	.0457	1.3995
Constant	-1.1155	.9063	1.5150	1	.2184		

MEDSCHL: B32 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.6851	.0805	72.5033	1	.0000	.1947	1.9839
AN	.2158	.1267	2.9013	1	.0885	.0220	1.2409
NONSCIA	.2888	.1470	3.8581	1	.0495	.0316	1.3348
RESITS	.2096	.3792	.3054	1	.5805	.0000	1.2332
GSTAKEN	-.1677	.1742	.9266	1	.3357	.0000	.8456
GSGRADE1	.3642	.1541	5.5836	1	.0181	.0439	1.4394
ASN	.0041	.1294	.0010	1	.9750	.0000	1.0041
APPDATE1	-.6795	.1121	36.7644	1	.0000	-.1367	.5069
PREVAPP	-.0486	.3120	.0243	1	.8761	.0000	.9525
INSURNCE	-.2729	.1738	2.4644	1	.1165	-.0158	.7612
LE4MED	-.0116	.3005	.0015	1	.9693	.0000	.9885
MEDAPP6	-1.0087	.4557	4.9002	1	.0269	-.0395	.3647
SEX1	.0122	.1337	.0083	1	.9274	.0000	1.0123
MATURE	.9920	.3224	9.4692	1	.0021	.0634	2.6967
SOCIAL2	-.1917	.0862	4.9406	1	.0262	-.0398	.8256
ETHNIC3	-.2066	.1744	1.4021	1	.2364	.0000	.8134
INDEPEND	.0316	.1796	.0310	1	.8602	.0000	1.0321
FEHE	-.0555	.3188	.0303	1	.8618	.0000	.9460
GRAMMAR	-.1753	.2285	.5884	1	.4431	.0000	.8392
OTHSCHL	-.5887	.2528	5.4234	1	.0199	-.0429	.5551
LOCAL	.3564	.1398	6.4989	1	.0108	.0492	1.4282
Constant	-9.4136	1.2110	60.4273	1	.0000		

B78: University of Bristol{tc "B78: University of Bristol" \l 3}

MEDSCHL: B78 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5382	.0687	61.4623	1	.0000	.1818	1.7130
AN	.6817	.1255	29.4826	1	.0000	.1236	1.9772
NONSCIA	.2263	.1513	2.2384	1	.1346	.0115	1.2540
RESITS	-.0364	.4278	.0072	1	.9322	.0000	.9643
GSTAKEN	.1054	.1589	.4400	1	.5071	.0000	1.1112
GSGRADE1	.2115	.1317	2.5766	1	.1085	.0179	1.2355
ASN	.1095	.1190	.8467	1	.3575	.0000	1.1157
APPDATE1	-.2841	.1091	6.7748	1	.0092	-.0515	.7527
PREVAPP	-.7419	.3741	3.9335	1	.0473	-.0328	.4762
INSURNCE	-.5764	.1815	10.0816	1	.0015	-.0670	.5619
LE4MED	-.8877	.2998	8.7656	1	.0031	-.0613	.4116
MEDAPP6	-.3774	.3124	1.4590	1	.2271	.0000	.6857
SEX1	.5317	.1386	14.7177	1	.0001	.0841	1.7018
MATURE	-.8657	.3699	5.4774	1	.0193	-.0440	.4208
SOCIAL2	.0103	.0832	.0154	1	.9012	.0000	1.0104
ETHNIC3	-.1430	.1713	.6976	1	.4036	.0000	.8667
INDEPEND	-.0937	.1871	.2505	1	.6167	.0000	.9106
FEHE	-.3038	.3339	.8280	1	.3628	.0000	.7380
GRAMMAR	-.0792	.2254	.1233	1	.7254	.0000	.9239
OTHSCHL	-.4705	.2363	3.9630	1	.0465	-.0330	.6247
LOCAL	.4384	.1441	9.2514	1	.0024	.0635	1.5503
Constant	-8.2966	1.1631	50.8836	1	.0000		

MEDSCHL: B78 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.6851	.0805	72.5033	1	.0000	.1947	1.9839
AN	.2158	.1267	2.9013	1	.0885	.0220	1.2409
NONSCIA	.2888	.1470	3.8581	1	.0495	.0316	1.3348
RESITS	.2096	.3792	.3054	1	.5805	.0000	1.2332
GSTAKEN	-.1677	.1742	.9266	1	.3357	.0000	.8456
GSGRADE1	.3642	.1541	5.5836	1	.0181	.0439	1.4394
ASN	.0041	.1294	.0010	1	.9750	.0000	1.0041
APPDATE1	-.6795	.1121	36.7644	1	.0000	-.1367	.5069
PREVAPP	-.0486	.3120	.0243	1	.8761	.0000	.9525
INSURNCE	-.2729	.1738	2.4644	1	.1165	-.0158	.7612
LE4MED	-.0116	.3005	.0015	1	.9693	.0000	.9885
MEDAPP6	-1.0087	.4557	4.9002	1	.0269	-.0395	.3647
SEX1	.0122	.1337	.0083	1	.9274	.0000	1.0123
MATURE	.9920	.3224	9.4692	1	.0021	.0634	2.6967
SOCIAL2	-.1917	.0862	4.9406	1	.0262	-.0398	.8256
ETHNIC3	-.2066	.1744	1.4021	1	.2364	.0000	.8134
INDEPEND	.0316	.1796	.0310	1	.8602	.0000	1.0321
FEHE	-.0555	.3188	.0303	1	.8618	.0000	.9460
GRAMMAR	-.1753	.2285	.5884	1	.4431	.0000	.8392
OTHSCHL	-.5887	.2528	5.4234	1	.0199	-.0429	.5551
LOCAL	.3564	.1398	6.4989	1	.0108	.0492	1.4282
Constant	-9.4136	1.2110	60.4273	1	.0000		

C05: Cambridge University{tc "C05: Cambridge University" \l 3}

MEDSCHL: C05 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.8197	.1247	43.1725	1	.0000	.1932	2.2697
AN	.2992	.1356	4.8721	1	.0273	.0510	1.3488
NONSCIA	-.2138	.2207	.9385	1	.3327	.0000	.8075
RESITS	1.4167	.6555	4.6707	1	.0307	.0492	4.1236
GSTAKEN	-.5909	.3187	3.4370	1	.0638	-.0361	.5538
GSGRADE1	.4820	.2870	2.8217	1	.0930	.0273	1.6194
ASN	-.1008	.1429	.4975	1	.4806	.0000	.9041
APPDATE1	-.3689	.1603	5.2953	1	.0214	-.0547	.6915
PREVAPP	-.0220	.3817	.0033	1	.9540	.0000	.9782
INSURNCE	.0248	.2215	.0125	1	.9110	.0000	1.0251
LE4MED	.5267	.3200	2.7091	1	.0998	.0254	1.6933
MEDAPP6	-.7117	.5511	1.6682	1	.1965	.0000	.4908
SEX1	.5546	.1640	11.4371	1	.0007	.0925	1.7412
MATURE	-4.8151	6.8618	.4924	1	.4829	.0000	.0081
SOCIAL2	-.0936	.1071	.7641	1	.3821	.0000	.9106
ETHNIC3	-.3454	.1752	3.8861	1	.0487	-.0414	.7080
INDEPEND	.3887	.2239	3.0131	1	.0826	.0303	1.4750
FEHE	-.6547	.6751	.9405	1	.3322	.0000	.5196
GRAMMAR	-.0728	.2723	.0715	1	.7892	.0000	.9298
OTHSCHL	-.3546	.3169	1.2520	1	.2632	.0000	.7014
LOCAL	-.0084	.1800	.0022	1	.9630	.0000	.9917
Constant	-7.7486	7.1230	1.1834	1	.2767		

MEDSCHL: C05 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.8498	.1345	39.9291	1	.0000	.1795	2.3393
AN	.5980	.1462	16.7404	1	.0000	.1119	1.8186
NONSCIA	-.2722	.2118	1.6522	1	.1987	.0000	.7617
RESITS	-.3009	.5205	.3343	1	.5631	.0000	.7401
GSTAKEN	-.4680	.2779	2.8362	1	.0922	-.0267	.6263
GSGRADE1	.5153	.2384	4.6719	1	.0307	.0476	1.6742
ASN	.1250	.1494	.7000	1	.4028	.0000	1.1332
APPDATE1	-.3700	.1632	5.1403	1	.0234	-.0517	.6908
PREVAPP	.1492	.4794	.0969	1	.7556	.0000	1.1609
INSURNCE	-.3200	.2203	2.1096	1	.1464	-.0096	.7262
LE4MED	.4498	.3350	1.8023	1	.1794	.0000	1.5680
MEDAPP6	.0268	.5057	.0028	1	.9577	.0000	1.0272
SEX1	.3101	.1584	3.8318	1	.0503	.0395	1.3635
MATURE	.2108	.8601	.0601	1	.8064	.0000	1.2347
SOCIAL2	.0557	.0936	.3533	1	.5522	.0000	1.0572
ETHNIC3	-.6222	.1750	12.6459	1	.0004	-.0951	.5368
INDEPEND	.0878	.2116	.1723	1	.6781	.0000	1.0918
FEHE	.2194	.4480	.2398	1	.6243	.0000	1.2453
GRAMMAR	.0061	.2665	.0005	1	.9818	.0000	1.0061
OTHSCHL	-.5824	.3189	3.3364	1	.0678	-.0337	.5585
LOCAL	.1600	.1762	.8246	1	.3638	.0000	1.1735
Constant	-12.3140	2.0206	37.1395	1	.0000		

C40: Charing Cross and Westminster Medical School (University of London){tc "C40: Charing Cross and Westminster Medical School (University of London)" \l 3}

MEDSCHL: C40 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5647	.0544	107.6760	1	.0000	.2240	1.7588
AN	.0890	.1257	.5010	1	.4791	.0000	1.0931
NONSCIA	-.0731	.1744	.1757	1	.6751	.0000	.9295
RESITS	-1.6431	.2235	54.0251	1	.0000	-.1572	.1934
GSTAKEN	-.2535	.1819	1.9422	1	.1634	.0000	.7761
GSGRADE1	.1756	.1263	1.9332	1	.1644	.0000	1.1920
ASN	.0854	.1416	.3637	1	.5465	.0000	1.0892
APPDATE1	-.9549	.1073	79.2503	1	.0000	-.1915	.3848
PREVAPP	.1246	.1911	.4249	1	.5145	.0000	1.1327
INSURNCE	-1.1176	.2042	29.9467	1	.0000	-.1152	.3271
LE4MED	-.8314	.3519	5.5822	1	.0181	-.0412	.4354
MEDAPP6	-2.0929	.6100	11.7704	1	.0006	-.0681	.1233
SEX1	.3934	.1348	8.5215	1	.0035	.0556	1.4820
MATURE	-.4988	.2808	3.1556	1	.0757	-.0234	.6073
SOCIAL2	-.2825	.0820	11.8691	1	.0006	-.0685	.7539
ETHNIC3	-.8367	.1423	34.5775	1	.0000	-.1244	.4331
INDEPEND	-.0832	.2144	.1506	1	.6980	.0000	.9202
FEHE	-.3181	.3039	1.0961	1	.2951	.0000	.7275
GRAMMAR	.5795	.2657	4.7580	1	.0292	.0362	1.7852
OTHSCHL	-.3538	.2483	2.0302	1	.1542	-.0038	.7020
LOCAL	-.0756	.1518	.2480	1	.6185	.0000	.9272
Constant	-1.1510	.9339	1.5191	1	.2178		

MEDSCHL: C40 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5239	.0563	86.5592	1	.0000	.2061	1.6886
AN	.3383	.1486	5.1812	1	.0228	.0400	1.4026
NONSCIA	.1602	.1779	.8112	1	.3678	.0000	1.1737
RESITS	-1.4233	.2285	38.8010	1	.0000	-.1360	.2409
GSTAKEN	.2662	.1903	1.9565	1	.1619	.0000	1.3050
GSGRADE1	.6721	.1550	18.8059	1	.0000	.0919	1.9584
ASN	-.0101	.1482	.0047	1	.9456	.0000	.9899
APPDATE1	-.9863	.1100	80.3349	1	.0000	-.1984	.3730
PREVAPP	-.4431	.2001	4.9035	1	.0268	-.0382	.6421
INSURNCE	-.5500	.1913	8.2699	1	.0040	-.0561	.5769
LE4MED	-1.0444	.4167	6.2834	1	.0122	-.0464	.3519
MEDAPP6	-.8881	.4574	3.7691	1	.0522	-.0298	.4114
SEX1	.2777	.1392	3.9776	1	.0461	.0315	1.3201
MATURE	-.7045	.2755	6.5390	1	.0106	-.0478	.4943
SOCIAL2	-.2694	.0833	10.4650	1	.0012	-.0652	.7638
ETHNIC3	-.7691	.1487	26.7501	1	.0000	-.1115	.4634
INDEPEND	-.2330	.2097	1.2338	1	.2667	.0000	.7922
FEHE	-.8491	.3482	5.9473	1	.0147	-.0445	.4278
GRAMMAR	-.2873	.2671	1.1570	1	.2821	.0000	.7503
OTHSCHL	-.2045	.2436	.7050	1	.4011	.0000	.8151
LOCAL	.1668	.1601	1.0848	1	.2976	.0000	1.1815
Constant	-3.4755	1.0007	12.0631	1	.0005		

D65: University of Dundee{tc "D65: University of Dundee" \l 3}

MEDSCHL: D65 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.0401	.0630	.4038	1	.5251	.0000	1.0409
AN	.6224	.1813	11.7810	1	.0006	.0766	1.8633
NONSCIA	.4241	.2712	2.4453	1	.1179	.0163	1.5282
RESITS	-.4190	.3662	1.3089	1	.2526	.0000	.6577
GSTAKEN	-.6886	.3056	5.0781	1	.0242	-.0430	.5023
GSGRADE1	-.1362	.2270	.3601	1	.5484	.0000	.8727
ASN	.3956	.2814	1.9767	1	.1597	.0000	1.4853
APPDATE1	-.0822	.1521	.2920	1	.5889	.0000	.9211
PREVAPP	.8982	.2919	9.4693	1	.0021	.0670	2.4552
INSURNCE	.1479	.2168	.4655	1	.4950	.0000	1.1594
LE4MED	-1.1405	.2609	19.1097	1	.0000	-.1013	.3197
MEDAPP6	.3860	.3631	1.1305	1	.2877	.0000	1.4711
SEX1	.0670	.1637	.1678	1	.6821	.0000	1.0693
MATURE	-1.4089	.3475	16.4331	1	.0001	-.0931	.2444
SOCIAL2	-.1650	.0933	3.1300	1	.0769	-.0260	.8479
ETHNIC3	-.6621	.2322	8.1326	1	.0043	-.0607	.5158
INDEPEND	-.4665	.2401	3.7766	1	.0520	-.0327	.6272
FEHE	-.6758	.4010	2.8394	1	.0920	-.0224	.5088
GRAMMAR	-.8248	.3135	6.9208	1	.0085	-.0543	.4383
OTHSCHL	-.7854	.2635	8.8877	1	.0029	-.0643	.4559
LOCAL	2.2504	.2526	79.3829	1	.0000	.2155	9.4914
SHN	.3841	.1573	5.9647	1	.0146	.0488	1.4683
SHG	1.7521	.1947	81.0126	1	.0000	.2178	5.7669
Constant	-10.9287	1.9882	30.2158	1	.0000		

MEDSCHL: D65 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.1400	.0662	4.4662	1	.0346	.0391	1.1502
AN	.2711	.1890	2.0584	1	.1514	.0060	1.3114
NONSCIA	.1771	.2403	.5431	1	.4612	.0000	1.1937
RESITS	-.5834	.3679	2.5147	1	.1128	-.0179	.5580
GSTAKEN	.2626	.2431	1.1673	1	.2800	.0000	1.3003
GSGRADE1	.1251	.1609	.6048	1	.4367	.0000	1.1333
ASN	.4491	.2651	2.8703	1	.0902	.0232	1.5669
APPDATE1	-.3784	.1235	9.3823	1	.0022	-.0676	.6850
PREVAPP	.2616	.2731	.9172	1	.3382	.0000	1.2990
INSURNCE	.0161	.1930	.0070	1	.9334	.0000	1.0163
LE4MED	-.3897	.2377	2.6876	1	.1011	-.0206	.6773
MEDAPP6	-.2080	.3304	.3965	1	.5289	.0000	.8122
SEX1	.0307	.1498	.0419	1	.8378	.0000	1.0311
MATURE	-1.3481	.3362	16.0817	1	.0001	-.0934	.2597
SOCIAL2	-.0856	.0848	1.0189	1	.3128	.0000	.9180
ETHNIC3	-.5261	.2238	5.5269	1	.0187	-.0468	.5909
INDEPEND	.2673	.2188	1.4922	1	.2219	.0000	1.3065
FEHE	.6454	.3941	2.6815	1	.1015	.0206	1.9067
GRAMMAR	-.2544	.2681	.9007	1	.3426	.0000	.7754
OTHSCHL	.3831	.2697	2.0180	1	.1554	.0033	1.4668
LOCAL	1.7178	.2319	54.8531	1	.0000	.1810	5.5725
SHN	.4912	.1487	10.9130	1	.0010	.0743	1.6343
SHG	1.8133	.2118	73.3103	1	.0000	.2102	6.1304
Constant	-12.4598	1.9932	39.0775	1	.0000		

E56: The University of Edinburgh{tc "E56: The University of Edinburgh" \l 3}

MEDSCHL: E56 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.6060	.0836	52.5001	1	.0000	.1572	1.8332
AN	.5468	.1364	16.0687	1	.0001	.0830	1.7277
NONSCIA	.2078	.1830	1.2899	1	.2561	.0000	1.2310
RESITS	.1784	.5416	.1085	1	.7419	.0000	1.1953
GSTAKEN	-.2805	.2296	1.4925	1	.2218	.0000	.7554
GSGRADE1	.4437	.2051	4.6786	1	.0305	.0362	1.5585
ASN	.0977	.1430	.4668	1	.4945	.0000	1.1026
APPDATE1	-.5557	.1125	24.3834	1	.0000	-.1046	.5737
PREVAPP	.3462	.2966	1.3623	1	.2431	.0000	1.4137
INSURNCE	-.2486	.1596	2.4268	1	.1193	-.0144	.7799
LE4MED	-.5352	.2173	6.0657	1	.0138	-.0446	.5855
MEDAPP6	.1289	.3086	.1745	1	.6761	.0000	1.1376
SEX1	.1770	.1272	1.9373	1	.1640	.0000	1.1936
MATURE	-.3753	.4031	.8667	1	.3519	.0000	.6871
SOCIAL2	-.1062	.0820	1.6775	1	.1953	.0000	.8992
ETHNIC3	-.3886	.1835	4.4824	1	.0342	-.0348	.6780
INDEPEND	.2783	.1714	2.6344	1	.1046	.0176	1.3208
FEHE	-.0881	.4367	.0407	1	.8402	.0000	.9157
GRAMMAR	.3028	.2366	1.6374	1	.2007	.0000	1.3536
OTHSCHL	-.0219	.2293	.0091	1	.9239	.0000	.9783
LOCAL	.5633	.2102	7.1849	1	.0074	.0504	1.7565
SHN	.4781	.1543	9.5962	1	.0019	.0610	1.6130
SHG	3.2045	.3118	105.5988	1	.0000	.2251	24.6433
Constant	-28.3991	2.6438	115.3898	1	.0000		

MEDSCHL: E56 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.6980	.0900	60.1337	1	.0000	.1635	2.0097
AN	1.0479	.1321	62.9440	1	.0000	.1674	2.8515
NONSCIA	-.2300	.1693	1.8454	1	.1743	.0000	.7945
RESITS	-.4534	.5319	.7264	1	.3940	.0000	.6355
GSTAKEN	-.2899	.1928	2.2612	1	.1327	-.0110	.7484
GSGRADE1	.2465	.1654	2.2206	1	.1362	.0101	1.2795
ASN	.1634	.1523	1.1509	1	.2834	.0000	1.1775
APPDATE1	-.4099	.0999	16.8234	1	.0000	-.0826	.6637
PREVAPP	-.1896	.3176	.3563	1	.5506	.0000	.8273
INSURNCE	-.4298	.1568	7.5092	1	.0061	-.0503	.6507
LE4MED	-.2676	.2344	1.3032	1	.2536	.0000	.7652
MEDAPP6	-.1598	.3082	.2688	1	.6041	.0000	.8523
SEX1	.4713	.1247	14.2743	1	.0002	.0751	1.6021
MATURE	.5940	.3483	2.9089	1	.0881	.0204	1.8112
SOCIAL2	-.0206	.0742	.0771	1	.7813	.0000	.9796
ETHNIC3	-.3361	.1701	3.9014	1	.0482	-.0296	.7146
INDEPEND	.1880	.1626	1.3367	1	.2476	.0000	1.2069
FEHE	-.4087	.4017	1.0349	1	.3090	.0000	.6645
GRAMMAR	-.1364	.2301	.3513	1	.5534	.0000	.8725
OTHSCHL	-.0906	.2289	.1565	1	.6924	.0000	.9134
LOCAL	.4414	.1963	5.0582	1	.0245	.0375	1.5550
SHN	.4175	.1416	8.6894	1	.0032	.0555	1.5181
SHG	3.4117	.3129	118.8650	1	.0000	.2319	30.3165
Constant	-31.9763	2.6359	147.1635	1	.0000		

G28: Glasgow University{tc "G28: Glasgow University" \l 3}

MEDSCHL: G28 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3612	.0701	26.5330	1	.0000	.1293	1.4350
AN	-.3898	.2066	3.5602	1	.0592	-.0326	.6772
NONSCIA	.1216	.2848	.1824	1	.6693	.0000	1.1293
RESITS	-.4398	.3963	1.2316	1	.2671	.0000	.6442
GSTAKEN	.7237	.2825	6.5615	1	.0104	.0558	2.0620
GSGRADE1	.0131	.2363	.0031	1	.9557	.0000	1.0132
ASN	.3616	.2769	1.7049	1	.1916	.0000	1.4356
APPDATE1	-.4499	.1459	9.5047	1	.0020	-.0715	.6377
PREVAPP	-.2119	.3044	.4843	1	.4865	.0000	.8091
INSURNCE	-.5781	.1937	8.9108	1	.0028	-.0686	.5610
LE4MED	-1.1906	.2337	25.9624	1	.0000	-.1278	.3040
MEDAPP6	-.2749	.3731	.5431	1	.4611	.0000	.7596
SEX1	.5437	.1511	12.9494	1	.0003	.0864	1.7223
MATURE	-.2903	.3419	.7208	1	.3959	.0000	.7481
SOCIAL2	-.0030	.0911	.0011	1	.9734	.0000	.9970
ETHNIC3	-.9034	.2565	12.4085	1	.0004	-.0842	.4052
INDEPEND	.4615	.2115	4.7622	1	.0291	.0434	1.5865
FEHE	.3235	.4242	.5817	1	.4457	.0000	1.3820
GRAMMAR	-.0258	.2896	.0080	1	.9289	.0000	.9745
OTHSCHL	-.4567	.2724	2.8110	1	.0936	-.0235	.6333
LOCAL	.8174	.2327	12.3409	1	.0004	.0840	2.2647
SHN	.4136	.1366	9.1717	1	.0025	.0699	1.5122
SHG	1.4234	.2074	47.0895	1	.0000	.1753	4.1511
Constant	-10.0597	2.0727	23.5561	1	.0000		

MEDSCHL: G28 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4079	.0852	22.9262	1	.0000	.1233	1.5036
AN	-.1221	.2099	.3382	1	.5609	.0000	.8851
NONSCIA	.1208	.2623	.2119	1	.6453	.0000	1.1284
RESITS	-.3451	.5675	.3698	1	.5431	.0000	.7081
GSTAKEN	.1750	.2740	.4078	1	.5231	.0000	1.1912
GSGRADE1	-.0506	.2268	.0498	1	.8234	.0000	.9506
ASN	.0058	.2888	.0004	1	.9841	.0000	1.0058
APPDATE1	-.4604	.1264	13.2721	1	.0003	-.0905	.6311
PREVAPP	.0126	.4196	.0009	1	.9761	.0000	1.0127
INSURNCE	-.2232	.1947	1.3139	1	.2517	.0000	.8000
LE4MED	-.9436	.2566	13.5259	1	.0002	-.0915	.3892
MEDAPP6	.2821	.3551	.6314	1	.4268	.0000	1.3260
SEX1	.5254	.1526	11.8485	1	.0006	.0846	1.6911
MATURE	-.6093	.3788	2.5867	1	.1078	-.0207	.5437
SOCIAL2	.0363	.0894	.1650	1	.6846	.0000	1.0370
ETHNIC3	-.4745	.2480	3.6598	1	.0557	-.0347	.6222
INDEPEND	-.1228	.2094	.3440	1	.5575	.0000	.8844
FEHE	-.4028	.4617	.7610	1	.3830	.0000	.6685
GRAMMAR	-.2954	.2866	1.0619	1	.3028	.0000	.7442
OTHSCHL	-.6435	.3006	4.5811	1	.0323	-.0433	.5255
LOCAL	.8819	.2336	14.2464	1	.0002	.0944	2.4154
SHN	.2745	.1339	4.2044	1	.0403	.0400	1.3159
SHG	1.3165	.2228	34.9224	1	.0000	.1547	3.7305
Constant	-9.9890	2.1725	21.1412	1	.0000		

I50: Imperial College of Science, Technology and Medicine (University of London){tc "I50: Imperial College of Science, Technology and Medicine (University of London)" \l 3}

MEDSCHL: I50 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3518	.0541	42.2662	1	.0000	.1516	1.4216
AN	.2323	.1226	3.5927	1	.0580	.0302	1.2615
NONSCIA	.2620	.1639	2.5551	1	.1099	.0178	1.2995
RESITS	-.2163	.2851	.5757	1	.4480	.0000	.8055
GSTAKEN	.0436	.1848	.0557	1	.8135	.0000	1.0446
GSGRADE1	.3480	.1487	5.4785	1	.0193	.0446	1.4162
ASN	.2045	.1279	2.5581	1	.1097	.0179	1.2270
APPDATE1	-.1340	.1083	1.5295	1	.2162	.0000	.8746
PREVAPP	.1322	.2435	.2950	1	.5870	.0000	1.1414
INSURNCE	-.7681	.1957	15.4030	1	.0001	-.0875	.4639
LE4MED	-.3610	.3089	1.3660	1	.2425	.0000	.6970
MEDAPP6	-.0561	.3065	.0335	1	.8549	.0000	.9455
SEX1	.2847	.1356	4.4054	1	.0358	.0371	1.3293
MATURE	-.8346	.3158	6.9856	1	.0082	-.0534	.4341
SOCIAL2	-.2036	.0838	5.9064	1	.0151	-.0472	.8158
ETHNIC3	-.8352	.1496	31.1477	1	.0000	-.1290	.4338
INDEPEND	.0931	.1887	.2436	1	.6216	.0000	1.0976
FEHE	-1.3475	.4519	8.8910	1	.0029	-.0627	.2599
GRAMMAR	.2766	.2408	1.3202	1	.2506	.0000	1.3187
OTHSCHL	-.1737	.2331	.5552	1	.4562	.0000	.8405
LOCAL	.0603	.1523	.1570	1	.6919	.0000	1.0622
Constant	-4.2299	.9814	18.5776	1	.0000		

MEDSCHL: I50 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4639	.0652	50.6533	1	.0000	.1772	1.5903
AN	.1787	.1469	1.4790	1	.2239	.0000	1.1956
NONSCIA	.2214	.1738	1.6220	1	.2028	.0000	1.2478
RESITS	.3378	.3162	1.1417	1	.2853	.0000	1.4019
GSTAKEN	.0239	.1921	.0155	1	.9010	.0000	1.0242
GSGRADE1	.1777	.1570	1.2822	1	.2575	.0000	1.1945
ASN	.1011	.1415	.5106	1	.4749	.0000	1.1064
APPDATE1	-.0257	.1147	.0502	1	.8227	.0000	.9746
PREVAPP	-.5791	.3205	3.2653	1	.0708	-.0286	.5604
INSURNCE	-.3597	.1825	3.8871	1	.0487	-.0349	.6979
LE4MED	-.2077	.3492	.3538	1	.5520	.0000	.8125
MEDAPP6	-.7141	.4981	2.0553	1	.1517	-.0060	.4896
SEX1	.5459	.1482	13.5638	1	.0002	.0864	1.7261
MATURE	-.9593	.4182	5.2622	1	.0218	-.0459	.3832
SOCIAL2	-.2866	.0920	9.7168	1	.0018	-.0706	.7508
ETHNIC3	-1.0294	.1662	38.3565	1	.0000	-.1531	.3572
INDEPEND	.0124	.1922	.0042	1	.9486	.0000	1.0125
FEHE	-1.1647	.4344	7.1885	1	.0073	-.0579	.3120
GRAMMAR	-.2452	.2581	.9025	1	.3421	.0000	.7826
OTHSCHL	-.5804	.2562	5.1319	1	.0235	-.0449	.5597
LOCAL	-.1266	.1575	.6456	1	.4217	.0000	.8811
Constant	-4.7927	1.1297	17.9987	1	.0000		

K72: King's College School of Medicine and Dentistry (University of London){tc "K72: King's College School of Medicine and Dentistry (University of London)" \l 3}

MEDSCHL: K72 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.6337	.0688	84.9165	1	.0000	.2189	1.8847
AN	.0620	.1406	.1944	1	.6593	.0000	1.0640
NONSCIA	.0352	.1888	.0347	1	.8522	.0000	1.0358
RESITS	-.6063	.3942	2.3662	1	.1240	-.0145	.5454
GSTAKEN	-.0512	.2205	.0540	1	.8163	.0000	.9501
GSGRADE1	.5046	.1865	7.3207	1	.0068	.0554	1.6564
ASN	.1635	.1440	1.2890	1	.2562	.0000	1.1777
APPDATE1	-1.3353	.1253	113.6187	1	.0000	-.2539	.2631
PREVAPP	-.0846	.2825	.0896	1	.7647	.0000	.9189
INSURNCE	-.3716	.1989	3.4892	1	.0618	-.0293	.6896
LE4MED	-.5176	.3322	2.4279	1	.1192	-.0157	.5959
MEDAPP6	-.4285	.3626	1.3962	1	.2374	.0000	.6515
SEX1	.4928	.1495	10.8654	1	.0010	.0716	1.6370
MATURE	.5100	.3042	2.8105	1	.0936	.0216	1.6653
SOCIAL2	-.0738	.0899	.6735	1	.4118	.0000	.9289
ETHNIC3	-.5928	.1643	13.0141	1	.0003	-.0798	.5528
INDEPEND	-.0568	.2248	.0638	1	.8006	.0000	.9448
FEHE	-1.2513	.4360	8.2359	1	.0041	-.0600	.2861
GRAMMAR	.0441	.2702	.0266	1	.8704	.0000	1.0451
OTHSCHL	-.0657	.2660	.0611	1	.8048	.0000	.9364
LOCAL	.0259	.1788	.0210	1	.8848	.0000	1.0262
Constant	-6.0540	1.2391	23.8696	1	.0000		

MEDSCHL: K72 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4656	.0670	48.2620	1	.0000	.1773	1.5930
AN	-.0379	.1616	.0551	1	.8144	.0000	.9628
NONSCIA	.3105	.1816	2.9243	1	.0873	.0251	1.3641
RESITS	.2828	.4336	.4253	1	.5143	.0000	1.3268
GSTAKEN	-.1973	.1975	.9979	1	.3178	.0000	.8209
GSGRADE1	.0789	.1528	.2664	1	.6058	.0000	1.0820
ASN	-.0907	.1780	.2594	1	.6105	.0000	.9133
APPDATE1	-.4290	.1160	13.6909	1	.0002	-.0891	.6511
PREVAPP	-1.1701	.4341	7.2659	1	.0070	-.0598	.3103
INSURNCE	-.8664	.2065	17.5986	1	.0000	-.1030	.4205
LE4MED	-.4713	.3522	1.7910	1	.1808	.0000	.6242
MEDAPP6	.0795	.3369	.0557	1	.8134	.0000	1.0828
SEX1	.6298	.1521	17.1473	1	.0000	.1015	1.8772
MATURE	-.6909	.3473	3.9572	1	.0467	-.0365	.5011
SOCIAL2	-.0344	.0869	.1562	1	.6927	.0000	.9662
ETHNIC3	-.7556	.1646	21.0736	1	.0000	-.1139	.4697
INDEPEND	.4827	.2236	4.6586	1	.0309	.0425	1.6204
FEHE	-.0160	.3383	.0022	1	.9623	.0000	.9841
GRAMMAR	.4992	.2598	3.6924	1	.0547	.0339	1.6474
OTHSCHL	-.1490	.2753	.2929	1	.5884	.0000	.8616
LOCAL	.0048	.1688	.0008	1	.9773	.0000	1.0048
Constant	-4.4106	1.1893	13.7527	1	.0002		

L23: University of Leeds{tc "L23: University of Leeds" \l 3}

MEDSCHL: L23 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.2192	.0367	35.6799	1	.0000	.1086	1.2451
AN	.0503	.1029	.2395	1	.6246	.0000	1.0516
NONSCIA	.1611	.1252	1.6545	1	.1983	.0000	1.1748
RESITS	-.1315	.2153	.3729	1	.5414	.0000	.8768
GSTAKEN	.2366	.1108	4.5605	1	.0327	.0299	1.2669
GSGRADE1	.2349	.0714	10.8371	1	.0010	.0556	1.2648
ASN	.0315	.1033	.0932	1	.7601	.0000	1.0320
APPDATE1	-.2974	.0823	13.0492	1	.0003	-.0622	.7428
PREVAPP	-.4418	.2050	4.6452	1	.0311	-.0304	.6429
INSURNCE	-.3034	.1217	6.2141	1	.0127	-.0384	.7383
LE4MED	-.8065	.2494	10.4521	1	.0012	-.0544	.4464
MEDAPP6	-.4941	.2170	5.1835	1	.0228	-.0334	.6101
SEX1	.3609	.1017	12.5885	1	.0004	.0609	1.4346
MATURE	-.7783	.2674	8.4739	1	.0036	-.0476	.4592
SOCIAL2	-.1015	.0598	2.8820	1	.0896	-.0176	.9035
ETHNIC3	-.6137	.1226	25.0655	1	.0000	-.0899	.5413
INDEPEND	.2149	.1372	2.4520	1	.1174	.0126	1.2397
FEHE	-.8885	.2551	12.1296	1	.0005	-.0596	.4113
GRAMMAR	.1147	.1724	.4428	1	.5058	.0000	1.1216
OTHSCHL	-.4434	.1546	8.2287	1	.0041	-.0467	.6419
LOCAL	.0167	.1174	.0202	1	.8870	.0000	1.0168
Constant	-1.5550	.6955	4.9984	1	.0254		

MEDSCHL: L23 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.2839	.0424	44.7233	1	.0000	.1216	1.3282
AN	-.0596	.1083	.3026	1	.5823	.0000	.9422
NONSCIA	.1518	.1243	1.4901	1	.2222	.0000	1.1639
RESITS	-.2327	.2265	1.0551	1	.3043	.0000	.7924
GSTAKEN	.1102	.1137	.9405	1	.3322	.0000	1.1165
GSGRADE1	.0865	.0758	1.3033	1	.2536	.0000	1.0903
ASN	.0384	.1112	.1193	1	.7298	.0000	1.0391
APPDATE1	-.2632	.0808	10.6127	1	.0011	-.0546	.7686
PREVAPP	-.3207	.2213	2.1003	1	.1473	-.0059	.7256
INSURNCE	-.4435	.1235	12.8944	1	.0003	-.0614	.6418
LE4MED	-.5429	.2708	4.0176	1	.0450	-.0264	.5811
MEDAPP6	-.4112	.2526	2.6513	1	.1035	-.0150	.6628
SEX1	.4994	.1023	23.8438	1	.0000	.0869	1.6477
MATURE	-.1857	.2824	.4327	1	.5107	.0000	.8305
SOCIAL2	-.0273	.0588	.2159	1	.6422	.0000	.9730
ETHNIC3	-.8957	.1280	48.9679	1	.0000	-.1275	.4083
INDEPEND	.2243	.1325	2.8639	1	.0906	.0173	1.2514
FEHE	-.9954	.2710	13.4923	1	.0002	-.0631	.3696
GRAMMAR	.1183	.1697	.4862	1	.4856	.0000	1.1256
OTHSCHL	-.6085	.1658	13.4710	1	.0002	-.0630	.5441
LOCAL	-.0543	.1216	.1990	1	.6555	.0000	.9472
Constant	-2.2132	.7401	8.9439	1	.0028		

L34: University of Leicester{tc "L34: University of Leicester" \l 3}

MEDSCHL: L34 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.2678	.0406	43.5933	1	.0000	.1377	1.3070
AN	-.0459	.1290	.1266	1	.7220	.0000	.9551
NONSCIA	.2265	.1561	2.1072	1	.1466	.0070	1.2543
RESITS	-1.7299	.3228	28.7247	1	.0000	-.1104	.1773
GSTAKEN	.1955	.1400	1.9519	1	.1624	.0000	1.2160
GSGRADE1	.0396	.0862	.2114	1	.6457	.0000	1.0404
ASN	-.0619	.1297	.2278	1	.6332	.0000	.9400
APPDATE1	-.6522	.0933	48.8709	1	.0000	-.1462	.5209
PREVAPP	-.2345	.2263	1.0733	1	.3002	.0000	.7910
INSURNCE	-.3934	.1454	7.3173	1	.0068	-.0492	.6748
LE4MED	-.2897	.2192	1.7459	1	.1864	.0000	.7485
MEDAPP6	-.7017	.2396	8.5729	1	.0034	-.0547	.4958
SEX1	.6113	.1199	26.0014	1	.0000	.1046	1.8428
MATURE	-1.1153	.2322	23.0701	1	.0000	-.0980	.3278
SOCIAL2	-.1053	.0687	2.3497	1	.1253	-.0126	.9000
ETHNIC3	-.5304	.1339	15.6948	1	.0001	-.0790	.5884
INDEPEND	-.1648	.1729	.9083	1	.3406	.0000	.8481
FEHE	-.3063	.2323	1.7385	1	.1873	.0000	.7362
GRAMMAR	-.2710	.2276	1.4183	1	.2337	.0000	.7626
OTHSCHL	-.3183	.1682	3.5815	1	.0584	-.0268	.7274
LOCAL	-.1432	.1360	1.1079	1	.2925	.0000	.8666
Constant	2.2930	.8079	8.0549	1	.0045		

MEDSCHL: L34 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.2184	.0388	31.6973	1	.0000	.1097	1.2441
AN	-.2461	.1203	4.1861	1	.0408	-.0298	.7818
NONSCIA	.2463	.1322	3.4743	1	.0623	.0245	1.2793
RESITS	-.7860	.2409	10.6478	1	.0011	-.0592	.4557
GSTAKEN	.2136	.1208	3.1298	1	.0769	.0214	1.2382
GSGRADE1	.2264	.0781	8.4120	1	.0037	.0510	1.2541
ASN	.5019	.1174	18.2804	1	.0000	.0813	1.6518
APPDATE1	-.1121	.0809	1.9199	1	.1659	.0000	.8940
PREVAPP	-.3834	.2115	3.2857	1	.0699	-.0228	.6815
INSURNCE	-.2129	.1254	2.8826	1	.0895	-.0189	.8082
LE4MED	-.0298	.2369	.0158	1	.8999	.0000	.9706
MEDAPP6	-.0953	.2406	.1570	1	.6919	.0000	.9091
SEX1	.4192	.1085	14.9412	1	.0001	.0724	1.5208
MATURE	-1.9271	.2933	43.1597	1	.0000	-.1292	.1456
SOCIAL2	-.0525	.0592	.7855	1	.3755	.0000	.9489
ETHNIC3	-.4020	.1240	10.5124	1	.0012	-.0588	.6689
INDEPEND	-.0384	.1506	.0651	1	.7986	.0000	.9623
FEHE	-.3450	.2210	2.4382	1	.1184	-.0133	.7082
GRAMMAR	-.1322	.1786	.5481	1	.4591	.0000	.8761
OTHSCHL	-.1461	.1518	.9268	1	.3357	.0000	.8640
LOCAL	.3032	.1210	6.2824	1	.0122	.0417	1.3541
Constant	.4312	.7578	.3238	1	.5693		

L41: The University of Liverpool{tc "L41: The University of Liverpool" \l 3}

MEDSCHL: L41 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4086	.0420	94.8706	1	.0000	.2109	1.5048
AN	.0855	.1304	.4303	1	.5118	.0000	1.0893
NONSCIA	-.0541	.1588	.1162	1	.7332	.0000	.9473
RESITS	-.0991	.2382	.1730	1	.6775	.0000	.9057
GSTAKEN	.3041	.1508	4.0654	1	.0438	.0315	1.3553
GSGRADE1	-.0275	.0908	.0921	1	.7616	.0000	.9728
ASN	.0846	.1400	.3652	1	.5456	.0000	1.0883
APPDATE1	-.4810	.1032	21.7463	1	.0000	-.0973	.6181
PREVAPP	-.9718	.2433	15.9573	1	.0001	-.0818	.3784
INSURNCE	-.3557	.1470	5.8559	1	.0155	-.0430	.7007
LE4MED	-1.2855	.2389	28.9535	1	.0000	-.1136	.2765
MEDAPP6	-.1264	.2416	.2737	1	.6008	.0000	.8813
SEX1	.4716	.1258	14.0524	1	.0002	.0760	1.6025
MATURE	-1.7282	.2576	45.0270	1	.0000	-.1436	.1776
SOCIAL2	-.0625	.0694	.8112	1	.3678	.0000	.9394
ETHNIC3	-.5442	.1499	13.1748	1	.0003	-.0732	.5803
INDEPEND	-.2356	.1939	1.4762	1	.2244	.0000	.7901
FEHE	-.1324	.2305	.3297	1	.5658	.0000	.8760
GRAMMAR	-.3856	.2248	2.9426	1	.0863	-.0212	.6800
OTHSCHL	-.1914	.1829	1.0951	1	.2953	.0000	.8258
LOCAL	.5345	.1494	12.8042	1	.0003	.0719	1.7066
Constant	.0938	.8041	.0136	1	.9071		

MEDSCHL: L41 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3699	.0511	52.4855	1	.0000	.1555	1.4476
AN	.1811	.1298	1.9464	1	.1630	.0000	1.1986
NONSCIA	.3678	.1422	6.6840	1	.0097	.0474	1.4445
RESITS	-.6170	.2221	7.7196	1	.0055	-.0523	.5396
GSTAKEN	.3301	.1391	5.6305	1	.0177	.0417	1.3912
GSGRADE1	.1744	.0851	4.1939	1	.0406	.0324	1.1905
ASN	-.0915	.1403	.4250	1	.5145	.0000	.9126
APPDATE1	-.5263	.0940	31.3354	1	.0000	-.1185	.5908
PREVAPP	.1523	.2180	.4883	1	.4847	.0000	1.1645
INSURNCE	-.2674	.1389	3.7035	1	.0543	-.0286	.7654
LE4MED	-1.0637	.3552	8.9704	1	.0027	-.0578	.3452
MEDAPP6	-.3494	.2733	1.6347	1	.2011	.0000	.7051
SEX1	.2629	.1204	4.7640	1	.0291	.0364	1.3007
MATURE	-.0485	.2737	.0313	1	.8595	.0000	.9527
SOCIAL2	-.1134	.0682	2.7640	1	.0964	-.0191	.8928
ETHNIC3	-.5284	.1533	11.8813	1	.0006	-.0688	.5896
INDEPEND	.1212	.1730	.4904	1	.4837	.0000	1.1288
FEHE	.1122	.2460	.2081	1	.6483	.0000	1.1188
GRAMMAR	-.1179	.2053	.3296	1	.5659	.0000	.8888
OTHSCHL	-.1861	.1766	1.1111	1	.2918	.0000	.8302
LOCAL	.2971	.1391	4.5629	1	.0327	.0350	1.3459
Constant	-3.2434	.8425	14.8185	1	.0001		

M20: The University of Manchester{tc "M20: The University of Manchester" \l 3}

MEDSCHL: M20 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.2678	.0374	51.3701	1	.0000	.1314	1.3071
AN	.0590	.1108	.2837	1	.5943	.0000	1.0608
NONSCIA	.1034	.1245	.6889	1	.4065	.0000	1.1089
RESITS	-.7698	.3099	6.1703	1	.0130	-.0382	.4631
GSTAKEN	.3805	.1244	9.3555	1	.0022	.0507	1.4631
GSGRADE1	.4049	.0808	25.1276	1	.0000	.0899	1.4991
ASN	.0356	.1052	.1148	1	.7348	.0000	1.0363
APPDATE1	-.4386	.0810	29.3406	1	.0000	-.0978	.6449
PREVAPP	-.6306	.2402	6.8907	1	.0087	-.0414	.5322
INSURNCE	-.3781	.1220	9.5989	1	.0019	-.0515	.6852
LE4MED	-.9811	.2138	21.0641	1	.0000	-.0816	.3749
MEDAPP6	-.3759	.2269	2.7448	1	.0976	-.0161	.6866
SEX1	.4939	.1036	22.7284	1	.0000	.0851	1.6386
MATURE	-.5993	.2213	7.3328	1	.0068	-.0432	.5492
SOCIAL2	-.0733	.0582	1.5860	1	.2079	.0000	.9294
ETHNIC3	-.4790	.1159	17.0653	1	.0000	-.0726	.6194
INDEPEND	-.0751	.1439	.2720	1	.6020	.0000	.9277
FEHE	-.5680	.2288	6.1638	1	.0130	-.0382	.5666
GRAMMAR	-.3206	.1743	3.3851	1	.0658	-.0220	.7257
OTHSCHL	-.1927	.1542	1.5623	1	.2113	.0000	.8247
LOCAL	.0333	.1231	.0731	1	.7869	.0000	1.0338
Constant	-2.0169	.7349	7.5312	1	.0061		

MEDSCHL: M20 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.2370	.0375	39.8620	1	.0000	.1119	1.2674
AN	-.0486	.1048	.2153	1	.6427	.0000	.9526
NONSCIA	.1668	.1150	2.1036	1	.1470	.0059	1.1816
RESITS	.3390	.2633	1.6578	1	.1979	.0000	1.4036
GSTAKEN	.4819	.1190	16.3928	1	.0001	.0690	1.6191
GSGRADE1	.1879	.0714	6.9136	1	.0086	.0403	1.2067
ASN	.1677	.1147	2.1387	1	.1436	.0068	1.1826
APPDATE1	-.6409	.0757	71.7732	1	.0000	-.1518	.5268
PREVAPP	-1.0339	.2725	14.4013	1	.0001	-.0640	.3556
INSURNCE	-.2894	.1141	6.4342	1	.0112	-.0383	.7487
LE4MED	-.4389	.2208	3.9505	1	.0469	-.0254	.6448
MEDAPP6	-.9382	.2802	11.2103	1	.0008	-.0552	.3913
SEX1	.2069	.0997	4.3061	1	.0380	.0276	1.2299
MATURE	-.3952	.2291	2.9747	1	.0846	-.0179	.6735
SOCIAL2	-.0614	.0560	1.1984	1	.2736	.0000	.9405
ETHNIC3	-.4010	.1159	11.9643	1	.0005	-.0574	.6696
INDEPEND	.3042	.1351	5.0729	1	.0243	.0319	1.3556
FEHE	.2448	.2063	1.4073	1	.2355	.0000	1.2773
GRAMMAR	-.3200	.1662	3.7069	1	.0542	-.0238	.7261
OTHSCHL	-.1527	.1555	.9641	1	.3262	.0000	.8584
LOCAL	.0511	.1193	.1837	1	.6682	.0000	1.0525
Constant	-1.8392	.6857	7.1955	1	.0073		

N21: University of Newcastle-upon-Tyne{tc "N21: University of Newcastle-upon-Tyne" \l 3}

MEDSCHL: N21 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.7484	.0751	99.2740	1	.0000	.2353	2.1135
AN	.3943	.1513	6.7943	1	.0091	.0522	1.4833
NONSCIA	-.6680	.1808	13.6507	1	.0002	-.0814	.5127
RESITS	-.7037	.4021	3.0622	1	.0801	-.0246	.4948
GSTAKEN	.1547	.1758	.7744	1	.3788	.0000	1.1673
GSGRADE1	.3667	.1217	9.0750	1	.0026	.0635	1.4430
ASN	.1074	.1419	.5726	1	.4492	.0000	1.1134
APPDATE1	-.3203	.1131	8.0257	1	.0046	-.0586	.7260
PREVAPP	-1.2405	.3685	11.3321	1	.0008	-.0729	.2892
INSURNCE	-.0152	.1667	.0083	1	.9275	.0000	.9849
LE4MED	-.0465	.3053	.0232	1	.8788	.0000	.9545
MEDAPP6	-.0357	.3094	.0133	1	.9081	.0000	.9649
SEX1	.8124	.1520	28.5716	1	.0000	.1230	2.2533
MATURE	-.2150	.3490	.3795	1	.5379	.0000	.8066
SOCIAL2	-.1812	.0901	4.0455	1	.0443	-.0341	.8343
ETHNIC3	-.2578	.2094	1.5156	1	.2183	.0000	.7728
INDEPEND	-.0799	.1850	.1865	1	.6659	.0000	.9232
FEHE	-.6685	.3787	3.1170	1	.0775	-.0252	.5125
GRAMMAR	-.5129	.2681	3.6591	1	.0558	-.0307	.5987
OTHSCHL	-.2321	.2128	1.1889	1	.2756	.0000	.7929
LOCAL	.0712	.1641	.1884	1	.6643	.0000	1.0738
Constant	-9.4823	1.1946	63.0104	1	.0000		

MEDSCHL: N21 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5971	.0668	79.9160	1	.0000	.1950	1.8169
AN	.5482	.1389	15.5840	1	.0001	.0814	1.7301
NONSCIA	-.4291	.1521	7.9611	1	.0048	-.0539	.6511
RESITS	-1.4939	.3633	16.9073	1	.0000	-.0853	.2245
GSTAKEN	-.0415	.1528	.0737	1	.7860	.0000	.9594
GSGRADE1	.4667	.1077	18.7676	1	.0000	.0905	1.5948
ASN	.1204	.1423	.7167	1	.3972	.0000	1.1280
APPDATE1	-.3057	.0999	9.3632	1	.0022	-.0600	.7366
PREVAPP	-.5112	.3078	2.7585	1	.0967	-.0192	.5998
INSURNCE	-.2931	.1524	3.7013	1	.0544	-.0288	.7459
LE4MED	-.7431	.3765	3.8956	1	.0484	-.0304	.4756
MEDAPP6	.0173	.2906	.0036	1	.9525	.0000	1.0175
SEX1	.5016	.1329	14.2519	1	.0002	.0773	1.6513
MATURE	-.3117	.3132	.9910	1	.3195	.0000	.7322
SOCIAL2	-.1797	.0794	5.1195	1	.0237	-.0390	.8355
ETHNIC3	.0328	.1761	.0347	1	.8522	.0000	1.0334
INDEPEND	.0740	.1725	.1843	1	.6677	.0000	1.0768
FEHE	-.0651	.3018	.0465	1	.8294	.0000	.9370
GRAMMAR	-.1496	.2277	.4314	1	.5113	.0000	.8611
OTHSCHL	-.0874	.2047	.1824	1	.6694	.0000	.9163
LOCAL	.5448	.1439	14.3265	1	.0002	.0776	1.7242
Constant	-8.1803	1.0596	59.5967	1	.0000		

N84: The University of Nottingham{tc "N84: The University of Nottingham" \l 3}

MEDSCHL: N84 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5865	.0828	50.1480	1	.0000	.1723	1.7977
AN	.4463	.1314	11.5428	1	.0007	.0767	1.5625
NONSCIA	-.1901	.1760	1.1676	1	.2799	.0000	.8268
RESITS	-.0299	.4522	.0044	1	.9474	.0000	.9706
GSTAKEN	-.0721	.1941	.1378	1	.7105	.0000	.9305
GSGRADE1	.1664	.1457	1.3033	1	.2536	.0000	1.1810
ASN	-.0337	.1292	.0680	1	.7942	.0000	.9669
APPDATE1	-.4926	.1212	16.5249	1	.0000	-.0947	.6110
PREVAPP	-.4566	.4189	1.1877	1	.2758	.0000	.6335
INSURNCE	-.3111	.1967	2.5021	1	.1137	-.0176	.7327
LE4MED	.3143	.2962	1.1265	1	.2885	.0000	1.3693
MEDAPP6	.3323	.2851	1.3584	1	.2438	.0000	1.3942
SEX1	.6399	.1486	18.5422	1	.0000	.1010	1.8963
MATURE	.9848	.3376	8.5087	1	.0035	.0634	2.6773
SOCIAL2	-.1925	.0919	4.3892	1	.0362	-.0384	.8249
ETHNIC3	-.5055	.1915	6.9701	1	.0083	-.0554	.6032
INDEPEND	-.1727	.1855	.8668	1	.3518	.0000	.8414
FEHE	-.5674	.3939	2.0745	1	.1498	-.0068	.5670
GRAMMAR	-.2540	.2421	1.1005	1	.2942	.0000	.7757
OTHSCHL	-.2539	.2290	1.2288	1	.2676	.0000	.7758
LOCAL	-.0716	.1709	.1757	1	.6751	.0000	.9309
Constant	-9.4336	1.2923	53.2908	1	.0000		

MEDSCHL: N84 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4837	.0795	37.0547	1	.0000	.1404	1.6221
AN	.2573	.1372	3.5201	1	.0606	.0292	1.2935
NONSCIA	.0716	.1602	.1995	1	.6551	.0000	1.0742
RESITS	-.2848	.4023	.5009	1	.4791	.0000	.7522
GSTAKEN	.3252	.1713	3.6021	1	.0577	.0300	1.3842
GSGRADE1	-.0248	.1200	.0426	1	.8364	.0000	.9755
ASN	.4927	.1262	15.2434	1	.0001	.0863	1.6368
APPDATE1	-.7282	.1208	36.3135	1	.0000	-.1389	.4828
PREVAPP	-.1484	.3860	.1477	1	.7007	.0000	.8621
INSURNCE	-.4558	.1817	6.2921	1	.0121	-.0491	.6339
LE4MED	-.3254	.3879	.7035	1	.4016	.0000	.7223
MEDAPP6	-.7623	.4410	2.9875	1	.0839	-.0236	.4666
SEX1	.6037	.1443	17.5055	1	.0000	.0934	1.8289
MATURE	1.1673	.3557	10.7713	1	.0010	.0702	3.2133
SOCIAL2	-.1846	.0874	4.4641	1	.0346	-.0372	.8315
ETHNIC3	-.9004	.1970	20.8877	1	.0000	-.1030	.4064
INDEPEND	-.1372	.1791	.5864	1	.4438	.0000	.8718
FEHE	-.9167	.4562	4.0380	1	.0445	-.0338	.3998
GRAMMAR	-.3651	.2394	2.3254	1	.1273	-.0135	.6941
OTHSCHL	-.1614	.2248	.5155	1	.4728	.0000	.8509
LOCAL	.0656	.1610	.1658	1	.6839	.0000	1.0678
Constant	-6.5787	1.1924	30.4375	1	.0000		

O33: Oxford University{tc "O33: Oxford University" \l 3}

MEDSCHL: O33 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.9709	.1805	28.9401	1	.0000	.2343	2.6404
AN	-.0444	.2399	.0343	1	.8531	.0000	.9565
NONSCIA	.2769	.3089	.8032	1	.3701	.0000	1.3190
RESITS	2.0593	.9892	4.3339	1	.0374	.0690	7.8402
GSTAKEN	-1.3591	.5518	6.0670	1	.0138	-.0910	.2569
GSGRADE1	.8768	.4811	3.3224	1	.0683	.0519	2.4033
ASN	-.0029	.2235	.0002	1	.9897	.0000	.9971
APPDATE1	.0159	.2610	.0037	1	.9515	.0000	1.0160
PREVAPP	-.3658	.7188	.2590	1	.6108	.0000	.6936
INSURNCE	-.2107	.3319	.4032	1	.5255	.0000	.8100
LE4MED	.1538	.5083	.0916	1	.7622	.0000	1.1663
MEDAPP6	-.7633	.6786	1.2652	1	.2607	.0000	.4661
SEX1	-.0379	.2540	.0223	1	.8814	.0000	.9628
MATURE	-5.5840	11.7118	.2273	1	.6335	.0000	.0038
SOCIAL2	-.3099	.1715	3.2656	1	.0707	-.0508	.7336
ETHNIC3	-.3670	.2886	1.6164	1	.2036	.0000	.6928
INDEPEND	-.4058	.3465	1.3717	1	.2415	.0000	.6664
FEHE	-.2692	.7063	.1453	1	.7030	.0000	.7640
GRAMMAR	-.1541	.4366	.1247	1	.7240	.0000	.8571
OTHSCHL	-.3716	.4807	.5976	1	.4395	.0000	.6896
LOCAL	-.3523	.2927	1.4491	1	.2287	.0000	.7030
Constant	-8.5053	12.0835	.4954	1	.4815		

MEDSCHL: O33 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.9597	.1887	25.8643	1	.0000	.2137	2.6109
AN	.6531	.2325	7.8873	1	.0050	.1062	1.9214
NONSCIA	-.3256	.3067	1.1270	1	.2884	.0000	.7221
RESITS	-.5908	1.1236	.2764	1	.5991	.0000	.5539
GSTAKEN	-.7814	.3821	4.1812	1	.0409	-.0646	.4578
GSGRADE1	.5801	.3352	2.9945	1	.0835	.0436	1.7863
ASN	.4394	.2411	3.3195	1	.0685	.0503	1.5517
APPDATE1	2.38E-05	.2528	.0000	1	1.0000	.0000	1.0000
PREVAPP	-1.0558	.8281	1.6255	1	.2023	.0000	.3479
INSURNCE	.1947	.3137	.3854	1	.5347	.0000	1.2150
LE4MED	.4365	.5998	.5298	1	.4667	.0000	1.5473
MEDAPP6	1.0619	.5407	3.8572	1	.0495	.0596	2.8919
SEX1	.0907	.2534	.1280	1	.7205	.0000	1.0949
MATURE	-5.0611	13.8151	.1342	1	.7141	.0000	.0063
SOCIAL2	-.1280	.1531	.6990	1	.4031	.0000	.8799
ETHNIC3	-1.0437	.3221	10.5004	1	.0012	-.1276	.3521
INDEPEND	-.2806	.3264	.7387	1	.3901	.0000	.7554
FEHE	-1.9129	1.0898	3.0812	1	.0792	-.0455	.1476
GRAMMAR	-.6170	.4313	2.0470	1	.1525	-.0095	.5395
OTHSCHL	-.2538	.4046	.3933	1	.5305	.0000	.7759
LOCAL	-.0110	.2729	.0016	1	.9678	.0000	.9890
Constant	-7.5285	14.1187	.2843	1	.5939		

Q50: Queen Mary and Westfield College (University of London){tc "Q50: Queen Mary and Westfield College (University of London)" \l 3}

MEDSCHL: Q50 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4072	.0453	80.8785	1	.0000	.1996	1.5026
AN	.0155	.1383	.0125	1	.9109	.0000	1.0156
NONSCIA	-.0287	.1669	.0295	1	.8636	.0000	.9717
RESITS	-2.1264	.3981	28.5244	1	.0000	-.1157	.1193
GSTAKEN	.0884	.1748	.2558	1	.6131	.0000	1.0924
GSGRADE1	.3109	.1223	6.4597	1	.0110	.0475	1.3646
ASN	.0375	.1380	.0739	1	.7857	.0000	1.0382
APPDATE1	-.4828	.1017	22.5492	1	.0000	-.1019	.6170
PREVAPP	-.9939	.2444	16.5391	1	.0000	-.0857	.3701
INSURNCE	-.1581	.1614	.9589	1	.3275	.0000	.8538
LE4MED	-1.3463	.3228	17.3915	1	.0000	-.0882	.2602
MEDAPP6	-.0569	.2963	.0369	1	.8477	.0000	.9447
SEX1	.4697	.1309	12.8787	1	.0003	.0741	1.5995
MATURE	-1.5357	.2934	27.3918	1	.0000	-.1132	.2153
SOCIAL2	-.1714	.0762	5.0666	1	.0244	-.0394	.8424
ETHNIC3	-.6830	.1414	23.3271	1	.0000	-.1038	.5051
INDEPEND	-.3168	.1870	2.8692	1	.0903	-.0209	.7285
FEHE	-.7729	.2667	8.3980	1	.0038	-.0568	.4617
GRAMMAR	.0372	.2246	.0274	1	.8686	.0000	1.0379
OTHSCHL	-.2419	.2061	1.3779	1	.2405	.0000	.7852
LOCAL	-.0755	.1473	.2630	1	.6080	.0000	.9273
Constant	.8658	.9505	.8297	1	.3624		

MEDSCHL: Q50 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4346	.0435	99.9595	1	.0000	.1990	1.5444
AN	.0248	.1349	.0337	1	.8543	.0000	1.0251
NONSCIA	.1899	.1436	1.7471	1	.1862	.0000	1.2091
RESITS	-1.3112	.3470	14.2769	1	.0002	-.0704	.2695
GSTAKEN	.1286	.1421	.8195	1	.3653	.0000	1.1373
GSGRADE1	.2687	.1051	6.5370	1	.0106	.0428	1.3082
ASN	.1145	.1388	.6810	1	.4092	.0000	1.1214
APPDATE1	-.8523	.0929	84.0894	1	.0000	-.1821	.4264
PREVAPP	-.5779	.2339	6.1057	1	.0135	-.0407	.5611
INSURNCE	-.4715	.1387	11.5590	1	.0007	-.0621	.6240
LE4MED	-.8067	.2761	8.5384	1	.0035	-.0514	.4463
MEDAPP6	-.7686	.3356	5.2448	1	.0220	-.0362	.4637
SEX1	.3271	.1179	7.6952	1	.0055	.0480	1.3869
MATURE	-.7381	.2892	6.5115	1	.0107	-.0427	.4780
SOCIAL2	.0411	.0636	.4179	1	.5180	.0000	1.0420
ETHNIC3	-.8826	.1299	46.1282	1	.0000	-.1335	.4137
INDEPEND	-.0787	.1623	.2348	1	.6280	.0000	.9244
FEHE	-.7219	.2591	7.7611	1	.0053	-.0482	.4858
GRAMMAR	-.1996	.1844	1.1720	1	.2790	.0000	.8191
OTHSCHL	-.6261	.1886	11.0211	1	.0009	-.0604	.5346
LOCAL	-.0323	.1289	.0626	1	.8024	.0000	.9683
Constant	-.6516	.8370	.6060	1	.4363		

Q75: The Queen's University of Belfast{tc "Q75: The Queen's University of Belfast" \l 3}

MEDSCHL: Q75 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.8504	.1138	55.8278	1	.0000	.3283	2.3406
AN	.1514	.3763	.1618	1	.6875	.0000	1.1634
NONSCIA	-.0863	.4182	.0426	1	.8365	.0000	.9173
RESITS	-1.3047	.7642	2.9149	1	.0878	-.0428	.2712
GSTAKEN	.7031	1.1695	.3615	1	.5477	.0000	2.0200
GSGRADE1	1.5276	1.4252	1.1489	1	.2838	.0000	4.6072
ASN	.6752	.7520	.8063	1	.3692	.0000	1.9645
APPDATE1	-.6393	.2710	5.5660	1	.0183	-.0845	.5277
PREVAPP	1.9421	.7205	7.2665	1	.0070	.1027	6.9736
INSURNCE	.3962	.4366	.8235	1	.3642	.0000	1.4861
LE4MED	-.2115	.4458	.2251	1	.6352	.0000	.8094
MEDAPP6	.0683	.7825	.0076	1	.9305	.0000	1.0706
SEX1	.2553	.3186	.6419	1	.4230	.0000	1.2908
MATURE	-.4993	.6166	.6558	1	.4180	.0000	.6069
SOCIAL2	.0889	.1762	.2546	1	.6138	.0000	1.0930
ETHNIC3	-1.4394	.6325	5.1785	1	.0229	-.0798	.2371
INDEPEND	.1272	1.0939	.0135	1	.9074	.0000	1.1357
FEHE	-1.4606	.8448	2.9891	1	.0838	-.0445	.2321
GRAMMAR	.4090	.7136	.3285	1	.5665	.0000	1.5054
OTHSCHL	-.8927	.7236	1.5218	1	.2173	.0000	.4096
LOCAL	1.0532	.5309	3.9356	1	.0473	.0622	2.8667
Constant	-8.5983	5.8261	2.1780	1	.1400		

MEDSCHL: Q75 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.8103	.1148	49.7995	1	.0000	.2982	2.2485
AN	.8991	.3665	6.0202	1	.0141	.0865	2.4574
NONSCIA	.1045	.3857	.0734	1	.7865	.0000	1.1101
RESITS	-1.2962	.6844	3.5865	1	.0583	-.0543	.2736
GSTAKEN	1.3925	1.1175	1.5528	1	.2127	.0000	4.0248
GSGRADE1	-.8140	.8041	1.0248	1	.3114	.0000	.4431
ASN	2.6603	1.0372	6.5785	1	.0103	.0923	14.3006
APPDATE1	-.0934	.2503	.1392	1	.7091	.0000	.9108
PREVAPP	.1750	.7151	.0599	1	.8066	.0000	1.1913
INSURNCE	.1780	.4384	.1648	1	.6848	.0000	1.1948
LE4MED	-.4287	.4835	.7859	1	.3753	.0000	.6514
MEDAPP6	.1996	.6582	.0920	1	.7616	.0000	1.2210
SEX1	.5780	.3024	3.6532	1	.0560	.0555	1.7825
MATURE	-1.5010	.6695	5.0259	1	.0250	-.0750	.2229
SOCIAL2	.1148	.1958	.3437	1	.5577	.0000	1.1216
ETHNIC3	-1.3488	.6677	4.0814	1	.0434	-.0622	.2595
INDEPEND	.6627	1.2043	.3028	1	.5821	.0000	1.9399
FEHE	-2.0777	.9106	5.2061	1	.0225	-.0772	.1252
GRAMMAR	.4086	.6221	.4314	1	.5113	.0000	1.5047
OTHSCHL	-.8501	.7104	1.4319	1	.2315	.0000	.4274
LOCAL	1.2220	.6027	4.1111	1	.0426	.0627	3.3940
Constant	-2.9446	3.5981	.6697	1	.4131		

R60: Royal Free Hospital School of Medicine (University of London){tc "R60: Royal Free Hospital School of Medicine (University of London)" \l 3}

MEDSCHL: R60 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.6691	.0721	86.0810	1	.0000	.2490	1.9525
AN	.1885	.1332	2.0018	1	.1571	.0012	1.2074
NONSCIA	-.0085	.2047	.0017	1	.9669	.0000	.9915
RESITS	-.7331	.2441	9.0223	1	.0027	-.0720	.4804
GSTAKEN	-.0722	.2302	.0984	1	.7537	.0000	.9303
GSGRADE1	.3875	.1780	4.7383	1	.0295	.0449	1.4733
ASN	.0651	.1751	.1381	1	.7102	.0000	1.0672
APPDATE1	-.5620	.1233	20.7886	1	.0000	-.1177	.5701
PREVAPP	-.4354	.2336	3.4733	1	.0624	-.0330	.6470
INSURNCE	-.1080	.2180	.2452	1	.6205	.0000	.8977
LE4MED	-.1133	.3809	.0885	1	.7661	.0000	.8929
MEDAPP6	-.5272	.4272	1.5232	1	.2171	.0000	.5903
SEX1	.2303	.1625	2.0071	1	.1566	.0023	1.2589
MATURE	-.9956	.3467	8.2473	1	.0041	-.0679	.3695
SOCIAL2	-.1103	.0970	1.2931	1	.2555	.0000	.8956
ETHNIC3	-.6740	.1741	14.9836	1	.0001	-.0979	.5097
INDEPEND	.1235	.2632	.2202	1	.6389	.0000	1.1315
FEHE	-.6357	.4147	2.3498	1	.1253	-.0161	.5296
GRAMMAR	.4807	.3287	2.1392	1	.1436	.0101	1.6172
OTHSCHL	-.0534	.2952	.0327	1	.8565	.0000	.9480
LOCAL	.0324	.1912	.0288	1	.8652	.0000	1.0330
Constant	-5.2063	1.1961	18.9449	1	.0000		

MEDSCHL: R60 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4870	.0617	62.3026	1	.0000	.2059	1.6275
AN	.2172	.1503	2.0874	1	.1485	.0078	1.2426
NONSCIA	-.1900	.2036	.8706	1	.3508	.0000	.8270
RESITS	-1.0546	.2286	21.2832	1	.0000	-.1164	.3483
GSTAKEN	.3121	.2138	2.1304	1	.1444	.0096	1.3663
GSGRADE1	.5808	.1686	11.8680	1	.0006	.0833	1.7875
ASN	.1826	.1596	1.3092	1	.2525	.0000	1.2004
APPDATE1	-.5039	.1105	20.7754	1	.0000	-.1149	.6042
PREVAPP	.0387	.2217	.0304	1	.8615	.0000	1.0394
INSURNCE	-.4503	.2142	4.4168	1	.0356	-.0412	.6375
LE4MED	-.7045	.4263	2.7309	1	.0984	-.0227	.4944
MEDAPP6	-.2560	.3566	.5152	1	.4729	.0000	.7742
SEX1	.5299	.1543	11.7876	1	.0006	.0829	1.6988
MATURE	-.2165	.2772	.6100	1	.4348	.0000	.8053
SOCIAL2	-.0662	.0899	.5421	1	.4616	.0000	.9359
ETHNIC3	-.2440	.1635	2.2270	1	.1356	-.0126	.7835
INDEPEND	-.1034	.2335	.1960	1	.6580	.0000	.9018
FEHE	-.6680	.3524	3.5941	1	.0580	-.0335	.5127
GRAMMAR	.1874	.3236	.3354	1	.5625	.0000	1.2061
OTHSCHL	-.4825	.2725	3.1354	1	.0766	-.0283	.6172
LOCAL	-.0964	.1824	.2794	1	.5971	.0000	.9081
Constant	-5.5923	1.0769	26.9653	1	.0000		

S18: The University of Sheffield{tc "S18: The University of Sheffield" \l 3}

MEDSCHL: S18 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5799	.0553	109.7581	1	.0000	.2154	1.7858
AN	.0740	.1223	.3660	1	.5452	.0000	1.0768
NONSCIA	.3526	.1359	6.7317	1	.0095	.0451	1.4228
RESITS	-.7774	.2800	7.7055	1	.0055	-.0496	.4596
GSTAKEN	.0005	.1397	.0000	1	.9970	.0000	1.0005
GSGRADE1	.0192	.0859	.0502	1	.8228	.0000	1.0194
ASN	-.0604	.1207	.2505	1	.6167	.0000	.9414
APPDATE1	-.3271	.0964	11.5200	1	.0007	-.0640	.7210
PREVAPP	-.3499	.2579	1.8398	1	.1750	.0000	.7048
INSURNCE	-.0636	.1439	.1956	1	.6583	.0000	.9383
LE4MED	-.2129	.2436	.7642	1	.3820	.0000	.8082
MEDAPP6	.2592	.2400	1.1671	1	.2800	.0000	1.2959
SEX1	.3933	.1216	10.4612	1	.0012	.0604	1.4818
MATURE	-.0498	.2471	.0406	1	.8404	.0000	.9515
SOCIAL2	.0604	.0679	.7901	1	.3741	.0000	1.0623
ETHNIC3	-.5855	.1584	13.6653	1	.0002	-.0709	.5568
INDEPEND	-.2094	.1597	1.7180	1	.1900	.0000	.8111
FEHE	-.4958	.2561	3.7474	1	.0529	-.0274	.6091
GRAMMAR	-.5958	.2328	6.5468	1	.0105	-.0443	.5511
OTHSCHL	-.3434	.1707	4.0473	1	.0442	-.0297	.7094
LOCAL	.2305	.1379	2.7941	1	.0946	.0185	1.2592
Constant	-5.2670	.8977	34.4217	1	.0000		

MEDSCHL: S18 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4770	.0520	84.2952	1	.0000	.1791	1.6113
AN	.1407	.1121	1.5737	1	.2097	.0000	1.1510
NONSCIA	.1567	.1245	1.5836	1	.2082	.0000	1.1697
RESITS	-.2922	.1968	2.2055	1	.1375	-.0090	.7466
GSTAKEN	.1568	.1321	1.4082	1	.2354	.0000	1.1698
GSGRADE1	.2281	.0851	7.1805	1	.0074	.0449	1.2562
ASN	.1205	.1191	1.0243	1	.3115	.0000	1.1281
APPDATE1	-.0556	.0819	.4612	1	.4971	.0000	.9459
PREVAPP	.0741	.1966	.1419	1	.7064	.0000	1.0769
INSURNCE	-.8885	.1470	36.5293	1	.0000	-.1160	.4113
LE4MED	-.4326	.2456	3.1020	1	.0782	-.0207	.6488
MEDAPP6	-.5350	.2469	4.6953	1	.0302	-.0324	.5857
SEX1	.6161	.1132	29.6283	1	.0000	.1038	1.8516
MATURE	.3430	.2128	2.5968	1	.1071	.0153	1.4091
SOCIAL2	-.0419	.0626	.4491	1	.5028	.0000	.9589
ETHNIC3	-.6759	.1421	22.6265	1	.0000	-.0897	.5087
INDEPEND	-.2162	.1522	2.0179	1	.1555	-.0026	.8056
FEHE	-.3936	.2315	2.8914	1	.0891	-.0186	.6746
GRAMMAR	-.0107	.2068	.0027	1	.9586	.0000	.9893
OTHSCHL	-.2935	.1670	3.0887	1	.0788	-.0206	.7456
LOCAL	.2724	.1276	4.5582	1	.0328	.0316	1.3131
Constant	-6.7493	.8178	68.1145	1	.0000		

S27: University of Southampton{tc "S27: University of Southampton" \l 3}

MEDSCHL: S27 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4972	.0671	54.8756	1	.0000	.1819	1.6440
AN	.6299	.1372	21.0698	1	.0000	.1093	1.8774
NONSCIA	.1985	.1763	1.2677	1	.2602	.0000	1.2195
RESITS	-2.2570	.4236	28.3878	1	.0000	-.1285	.1047
GSTAKEN	.0820	.1951	.1764	1	.6745	.0000	1.0854
GSGRADE1	.0855	.1523	.3153	1	.5745	.0000	1.0893
ASN	-.1532	.1505	1.0358	1	.3088	.0000	.8580
APPDATE1	-.3263	.1195	7.4530	1	.0063	-.0584	.7216
PREVAPP	2.2395	.2534	78.1065	1	.0000	.2183	9.3884
INSURNCE	-.2696	.1937	1.9365	1	.1641	.0000	.7637
LE4MED	.0044	.2861	.0002	1	.9876	.0000	1.0044
MEDAPP6	-.0882	.3494	.0637	1	.8007	.0000	.9156
SEX1	.0560	.1492	.1409	1	.7073	.0000	1.0576
MATURE	-1.9496	.3744	27.1103	1	.0000	-.1254	.1423
SOCIAL2	-.0288	.0899	.1030	1	.7483	.0000	.9716
ETHNIC3	-.8016	.1957	16.7760	1	.0000	-.0962	.4486
INDEPEND	-.2496	.1997	1.5625	1	.2113	.0000	.7791
FEHE	-.4868	.3210	2.3005	1	.1293	-.0137	.6146
GRAMMAR	-.2821	.2684	1.1052	1	.2931	.0000	.7542
OTHSCHL	-.0916	.2291	.1599	1	.6892	.0000	.9125
LOCAL	-.0384	.1688	.0516	1	.8202	.0000	.9624
Constant	-2.2041	1.1744	3.5223	1	.0605		

MEDSCHL: S27 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5992	.0726	68.0674	1	.0000	.1953	1.8207
AN	.1461	.1546	.8933	1	.3446	.0000	1.1574
NONSCIA	-.0927	.1705	.2956	1	.5867	.0000	.9115
RESITS	-1.8208	.5039	13.0582	1	.0003	-.0799	.1619
GSTAKEN	.2796	.1824	2.3491	1	.1254	.0142	1.3225
GSGRADE1	.2966	.1471	4.0660	1	.0438	.0345	1.3452
ASN	.1027	.1516	.4583	1	.4984	.0000	1.1081
APPDATE1	-1.5753	.1312	144.2373	1	.0000	-.2865	.2069
PREVAPP	1.0576	.2526	17.5232	1	.0000	.0946	2.8794
INSURNCE	-.2614	.1819	2.0635	1	.1509	-.0061	.7700
LE4MED	-.4173	.3954	1.1138	1	.2912	.0000	.6588
MEDAPP6	-.7717	.4158	3.4438	1	.0635	-.0289	.4622
SEX1	.0809	.1491	.2941	1	.5876	.0000	1.0842
MATURE	.3173	.3186	.9915	1	.3194	.0000	1.3733
SOCIAL2	-.0620	.0882	.4936	1	.4823	.0000	.9399
ETHNIC3	-.3728	.1898	3.8567	1	.0495	-.0327	.6888
INDEPEND	-.0714	.2021	.1249	1	.7238	.0000	.9311
FEHE	-.0651	.3139	.0429	1	.8358	.0000	.9370
GRAMMAR	-.3946	.2616	2.2758	1	.1314	-.0126	.6739
OTHSCHL	-.2462	.2523	.9517	1	.3293	.0000	.7818
LOCAL	.1899	.1629	1.3598	1	.2436	.0000	1.2091
Constant	-3.6552	1.2517	8.5271	1	.0035		

S36: University of St Andrews{tc "S36: University of St Andrews" \l 3}

MEDSCHL: S36 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.2774	.0880	9.9345	1	.0016	.1004	1.3197
AN	-.1370	.2693	.2588	1	.6110	.0000	.8720
NONSCIA	-.4710	.4572	1.0614	1	.3029	.0000	.6244
RESITS	-1.4176	.3774	14.1099	1	.0002	-.1241	.2423
GSTAKEN	.8461	.3390	6.2308	1	.0126	.0733	2.3306
GSGRADE1	.4381	.2400	3.3321	1	.0679	.0411	1.5498
ASN	.3735	.3391	1.2129	1	.2708	.0000	1.4528
APPDATE1	-.7233	.2194	10.8702	1	.0010	-.1062	.4851
PREVAPP	-.5707	.3679	2.4058	1	.1209	-.0227	.5652
INSURNCE	-.3005	.3192	.8862	1	.3465	.0000	.7405
LE4MED	-1.5072	.3382	19.8542	1	.0000	-.1506	.2215
MEDAPP6	-.6102	.6306	.9365	1	.3332	.0000	.5432
SEX1	.4637	.2305	4.0462	1	.0443	.0510	1.5900
MATURE	-1.3747	.5270	6.8038	1	.0091	-.0781	.2529
SOCIAL2	.0035	.1343	.0007	1	.9794	.0000	1.0035
ETHNIC3	-.8396	.2747	9.3411	1	.0022	-.0966	.4319
INDEPEND	-.0057	.3004	.0004	1	.9848	.0000	.9943
FEHE	-.1797	.5874	.0936	1	.7596	.0000	.8355
GRAMMAR	.1229	.5286	.0541	1	.8161	.0000	1.1308
OTHSCHL	.2524	.4143	.3712	1	.5423	.0000	1.2871
LOCAL	2.0007	.3684	29.4892	1	.0000	.1869	7.3941
SHN	.8694	.2414	12.9734	1	.0003	.1181	2.3854
SHG	1.0209	.2092	23.8145	1	.0000	.1665	2.7757
Constant	-8.1714	2.3981	11.6106	1	.0007		

MEDSCHL: S36 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5885	.1049	31.4762	1	.0000	.1765	1.8012
AN	.2651	.3301	.6450	1	.4219	.0000	1.3035
NONSCIA	-1.2929	.4811	7.2219	1	.0072	-.0743	.2745
RESITS	-2.5858	.3786	46.6530	1	.0000	-.2173	.0753
GSTAKEN	.6404	.3102	4.2625	1	.0390	.0489	1.8973
GSGRADE1	.0668	.2195	.0926	1	.7609	.0000	1.0691
ASN	-.3747	.3609	1.0776	1	.2992	.0000	.6875
APPDATE1	-.5374	.1843	8.5042	1	.0035	-.0829	.5843
PREVAPP	-.0067	.3260	.0004	1	.9835	.0000	.9933
INSURNCE	-.2535	.3082	.6764	1	.4108	.0000	.7761
LE4MED	-1.0169	.3665	7.6989	1	.0055	-.0776	.3617
MEDAPP6	-.1491	.4711	.1002	1	.7516	.0000	.8615
SEX1	-.0865	.2302	.1413	1	.7070	.0000	.9171
MATURE	-.8211	.5547	2.1915	1	.1388	-.0142	.4400
SOCIAL2	-.0215	.1216	.0312	1	.8597	.0000	.9787
ETHNIC3	-1.1014	.2737	16.1935	1	.0001	-.1225	.3324
INDEPEND	.1711	.3189	.2878	1	.5916	.0000	1.1866
FEHE	-1.1824	.5925	3.9821	1	.0460	-.0458	.3065
GRAMMAR	1.1495	.4971	5.3465	1	.0208	.0595	3.1565
OTHSCHL	-.5585	.4256	1.7222	1	.1894	.0000	.5720
LOCAL	1.8670	.3456	29.1795	1	.0000	.1695	6.4687
SHN	.5510	.2410	5.2265	1	.0222	.0584	1.7351
SHG	.8230	.2288	12.9394	1	.0003	.1076	2.2773
Constant	-6.3618	2.5135	6.4064	1	.0114		

S49: St George's Hospital Medical School (University of London){tc "S49: St George's Hospital Medical School (University of London)" \l 3}

MEDSCHL: S49 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.6063	.0599	102.2802	1	.0000	.2493	1.8336
AN	.3048	.1447	4.4351	1	.0352	.0389	1.3564
NONSCIA	.1871	.2014	.8635	1	.3528	.0000	1.2058
RESITS	-1.5377	.3153	23.7772	1	.0000	-.1162	.2149
GSTAKEN	.1074	.2045	.2758	1	.5994	.0000	1.1134
GSGRADE1	.3286	.1694	3.7624	1	.0524	.0331	1.3890
ASN	.0331	.1515	.0476	1	.8272	.0000	1.0336
APPDATE1	-.5375	.1199	20.1095	1	.0000	-.1060	.5842
PREVAPP	-.3681	.2509	2.1522	1	.1424	-.0097	.6921
INSURNCE	-.4632	.2038	5.1656	1	.0230	-.0443	.6293
LE4MED	-.4654	.3542	1.7264	1	.1889	.0000	.6279
MEDAPP6	-.5993	.3671	2.6649	1	.1026	-.0203	.5492
SEX1	.0444	.1535	.0837	1	.7724	.0000	1.0454
MATURE	-.9187	.3111	8.7177	1	.0032	-.0645	.3990
SOCIAL2	-.0507	.0855	.3512	1	.5534	.0000	.9506
ETHNIC3	-.3871	.1651	5.4956	1	.0191	-.0466	.6790
INDEPEND	.0247	.2237	.0122	1	.9120	.0000	1.0250
FEHE	-.7829	.3518	4.9522	1	.0261	-.0428	.4571
GRAMMAR	.2227	.2869	.6027	1	.4375	.0000	1.2495
OTHSCHL	-.3267	.2645	1.5262	1	.2167	.0000	.7213
LOCAL	.3552	.1790	3.9360	1	.0473	.0346	1.4265
Constant	-4.0288	1.1127	13.1085	1	.0003		

MEDSCHL: S49 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4848	.0666	52.9894	1	.0000	.1907	1.6239
AN	.3286	.1898	2.9985	1	.0833	.0267	1.3890
NONSCIA	-.2386	.2293	1.0832	1	.2980	.0000	.7877
RESITS	-2.6160	.3564	53.8686	1	.0000	-.1924	.0731
GSTAKEN	.3198	.2682	1.4216	1	.2331	.0000	1.3769
GSGRADE1	.5216	.2130	5.9957	1	.0143	.0534	1.6846
ASN	.4147	.1983	4.3732	1	.0365	.0411	1.5139
APPDATE1	-.5303	.1345	15.5368	1	.0001	-.0983	.5884
PREVAPP	-1.2962	.3061	17.9303	1	.0000	-.1066	.2736
INSURNCE	-.7095	.2269	9.7754	1	.0018	-.0745	.4919
LE4MED	-1.3824	.4922	7.8893	1	.0050	-.0648	.2510
MEDAPP6	-2.5179	.6529	14.8736	1	.0001	-.0958	.0806
SEX1	.3611	.1865	3.7469	1	.0529	.0353	1.4349
MATURE	-2.2941	.4277	28.7755	1	.0000	-.1382	.1009
SOCIAL2	-.1594	.1084	2.1611	1	.1415	-.0107	.8527
ETHNIC3	-.6449	.1977	10.6456	1	.0011	-.0785	.5247
INDEPEND	-.1856	.2618	.5024	1	.4784	.0000	.8306
FEHE	-1.2538	.3815	10.8042	1	.0010	-.0793	.2854
GRAMMAR	.4687	.3483	1.8105	1	.1784	.0000	1.5979
OTHSCHL	-.7298	.3072	5.6432	1	.0175	-.0510	.4820
LOCAL	.0693	.2205	.0987	1	.7534	.0000	1.0717
Constant	.1232	1.2969	.0090	1	.9243		

U60: United Medical and Dental Schools of Guy's and St Thomas's Hospitals (University of London){tc "U60: United Medical and Dental Schools of Guy's and St Thomas's Hospitals (University of London)" \l 3}

MEDSCHL: U60 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.6087	.0508	143.4943	1	.0000	.2442	1.8380
AN	.2463	.1198	4.2271	1	.0398	.0306	1.2793
NONSCIA	.1977	.1500	1.7370	1	.1875	.0000	1.2186
RESITS	.2981	.2815	1.1209	1	.2897	.0000	1.3473
GSTAKEN	.1016	.1578	.4145	1	.5197	.0000	1.1069
GSGRADE1	.2739	.1151	5.6638	1	.0173	.0393	1.3151
ASN	.0106	.1213	.0077	1	.9300	.0000	1.0107
APPDATE1	-.4036	.0973	17.1881	1	.0000	-.0800	.6679
PREVAPP	-.4866	.2413	4.0686	1	.0437	-.0295	.6147
INSURNCE	-.7259	.1659	19.1450	1	.0000	-.0850	.4839
LE4MED	-.7737	.3228	5.7461	1	.0165	-.0397	.4613
MEDAPP6	-.2679	.2873	.8696	1	.3511	.0000	.7650
SEX1	.0406	.1191	.1161	1	.7333	.0000	1.0414
MATURE	-.6970	.2766	6.3476	1	.0118	-.0428	.4981
SOCIAL2	-.1539	.0696	4.8944	1	.0269	-.0349	.8573
ETHNIC3	-.7236	.1271	32.4041	1	.0000	-.1132	.4850
INDEPEND	.1947	.1755	1.2306	1	.2673	.0000	1.2150
FEHE	-.4966	.2932	2.8675	1	.0904	-.0191	.6086
GRAMMAR	-.0625	.2208	.0802	1	.7771	.0000	.9394
OTHSCHL	-.2586	.2110	1.5032	1	.2202	.0000	.7721
LOCAL	.0511	.1365	.1402	1	.7081	.0000	1.0525
Constant	-5.6058	.8630	42.1971	1	.0000		

MEDSCHL: U60 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.5505	.0536	105.3438	1	.0000	.2131	1.7341
AN	.0576	.1237	.2170	1	.6414	.0000	1.0593
NONSCIA	.2403	.1520	2.4986	1	.1139	.0148	1.2716
RESITS	.0571	.2468	.0534	1	.8172	.0000	1.0587
GSTAKEN	.1929	.1603	1.4473	1	.2290	.0000	1.2128
GSGRADE1	.0809	.1163	.4832	1	.4870	.0000	1.0842
ASN	-.0438	.1364	.1032	1	.7480	.0000	.9571
APPDATE1	-.7831	.0994	62.1066	1	.0000	-.1625	.4570
PREVAPP	-.5648	.2309	5.9845	1	.0144	-.0418	.5685
INSURNCE	-.4970	.1737	8.1882	1	.0042	-.0522	.6084
LE4MED	-.1692	.3101	.2979	1	.5852	.0000	.8443
MEDAPP6	.0887	.3360	.0697	1	.7918	.0000	1.0928
SEX1	.0864	.1231	.4928	1	.4827	.0000	1.0903
MATURE	-.6632	.2718	5.9530	1	.0147	-.0417	.5152
SOCIAL2	-.1876	.0722	6.7623	1	.0093	-.0457	.8289
ETHNIC3	-.9005	.1324	46.2778	1	.0000	-.1395	.4064
INDEPEND	.1930	.1812	1.1354	1	.2866	.0000	1.2129
FEHE	-.8738	.3375	6.7011	1	.0096	-.0455	.4174
GRAMMAR	-.1814	.2279	.6332	1	.4262	.0000	.8341
OTHSCHL	-.0729	.2197	.1100	1	.7401	.0000	.9297
LOCAL	.0475	.1411	.1132	1	.7365	.0000	1.0486
Constant	-2.6574	.8824	9.0700	1	.0026		

U80: University College London Medical School (University of London){tc "U80: University College London Medical School (University of London)" \l 3}

MEDSCHL: U80 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3946	.0498	62.6897	1	.0000	.1626	1.4838
AN	-.0906	.1150	.6203	1	.4309	.0000	.9134
NONSCIA	.2977	.1452	4.2008	1	.0404	.0310	1.3468
RESITS	-.8789	.2355	13.9275	1	.0002	-.0721	.4152
GSTAKEN	-.0787	.1663	.2238	1	.6362	.0000	.9243
GSGRADE1	.2723	.1352	4.0536	1	.0441	.0299	1.3129
ASN	.3005	.1129	7.0799	1	.0078	.0470	1.3505
APPDATE1	-.6443	.0982	43.0769	1	.0000	-.1338	.5250
PREVAPP	.1611	.2001	.6478	1	.4209	.0000	1.1748
INSURNCE	-.4648	.1782	6.8047	1	.0091	-.0457	.6283
LE4MED	.3935	.2230	3.1141	1	.0776	.0220	1.4822
MEDAPP6	-.3232	.3404	.9011	1	.3425	.0000	.7239
SEX1	.0853	.1210	.4961	1	.4812	.0000	1.0890
MATURE	-.1545	.2562	.3639	1	.5464	.0000	.8568
SOCIAL2	-.1732	.0748	5.3655	1	.0205	-.0383	.8409
ETHNIC3	-.9678	.1307	54.7977	1	.0000	-.1517	.3799
INDEPEND	-.2965	.1748	2.8772	1	.0898	-.0195	.7434
FEHE	-.4154	.2890	2.0662	1	.1506	-.0054	.6601
GRAMMAR	-.3770	.2371	2.5279	1	.1119	-.0152	.6859
OTHSCHL	-.2340	.2067	1.2824	1	.2574	.0000	.7913
LOCAL	.1126	.1351	.6951	1	.4044	.0000	1.1192
Constant	-1.9392	.9095	4.5460	1	.0330		

MEDSCHL: U80 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3999	.0485	68.1001	1	.0000	.1637	1.4916
AN	.0213	.1186	.0323	1	.8574	.0000	1.0215
NONSCIA	.3462	.1365	6.4312	1	.0112	.0424	1.4137
RESITS	-1.0013	.2360	18.0071	1	.0000	-.0806	.3674
GSTAKEN	-.2492	.1597	2.4351	1	.1186	-.0133	.7794
GSGRADE1	.3237	.1321	6.0011	1	.0143	.0403	1.3822
ASN	.2486	.1143	4.7332	1	.0296	.0333	1.2823
APPDATE1	-.4014	.0903	19.7403	1	.0000	-.0848	.6694
PREVAPP	-.2404	.2236	1.1552	1	.2825	.0000	.7863
INSURNCE	-.6358	.1636	15.1064	1	.0001	-.0729	.5295
LE4MED	-.1664	.2550	.4257	1	.5141	.0000	.8467
MEDAPP6	-.3559	.3437	1.0720	1	.3005	.0000	.7005
SEX1	.2899	.1153	6.3192	1	.0119	.0419	1.3363
MATURE	-.4773	.2546	3.5147	1	.0608	-.0248	.6205
SOCIAL2	.0076	.0671	.0129	1	.9097	.0000	1.0076
ETHNIC3	-.8132	.1241	42.9671	1	.0000	-.1289	.4434
INDEPEND	-.0266	.1670	.0253	1	.8736	.0000	.9738
FEHE	-.8506	.3132	7.3752	1	.0066	-.0467	.4272
GRAMMAR	-.2498	.2159	1.3386	1	.2473	.0000	.7789
OTHSCHL	-.0284	.1970	.0207	1	.8856	.0000	.9720
LOCAL	.2566	.1301	3.8920	1	.0485	.0277	1.2926
Constant	-3.2861	.8717	14.2118	1	.0002		

W10: University of Wales College of Medicine{tc "W10: University of Wales College of Medicine" \l 3}

MEDSCHL: W10 YEARAPP: 96.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.4975	.0530	87.9954	1	.0000	.2144	1.6447
AN	.0002	.1420	.0000	1	.9991	.0000	1.0002
NONSCIA	.2291	.1699	1.8182	1	.1775	.0000	1.2575
RESITS	-.6194	.3019	4.2099	1	.0402	-.0344	.5382
GSTAKEN	.1713	.1684	1.0346	1	.3091	.0000	1.1868
GSGRADE1	.3300	.1356	5.9281	1	.0149	.0458	1.3910
ASN	-.1254	.1555	.6499	1	.4201	.0000	.8822
APPDATE1	-.7893	.1111	50.4347	1	.0000	-.1609	.4542
PREVAPP	-.2790	.2675	1.0881	1	.2969	.0000	.7565
INSURNCE	-.4085	.1744	5.4884	1	.0191	-.0432	.6646
LE4MED	-1.0309	.2528	16.6270	1	.0000	-.0884	.3567
MEDAPP6	-2.4509	.4297	32.5354	1	.0000	-.1278	.0862
SEX1	.5580	.1431	15.2110	1	.0001	.0840	1.7471
MATURE	-.7711	.2711	8.0883	1	.0045	-.0570	.4625
SOCIAL2	-.0451	.0816	.3050	1	.5808	.0000	.9559
ETHNIC3	-.5432	.1774	9.3767	1	.0022	-.0628	.5809
INDEPEND	-.2090	.2073	1.0160	1	.3135	.0000	.8114
FEHE	-.5532	.2445	5.1195	1	.0237	-.0408	.5751
GRAMMAR	-.2163	.2626	.6788	1	.4100	.0000	.8055
OTHSCHL	-.2833	.2179	1.6912	1	.1934	.0000	.7533
LOCAL	.7860	.1599	24.1643	1	.0000	.1088	2.1945
Constant	-2.4745	.9884	6.2677	1	.0123		

MEDSCHL: W10 YEARAPP: 97.00

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AG	.3588	.0693	26.7934	1	.0000	.1428	1.4316
AN	.2437	.1678	2.1100	1	.1463	.0095	1.2760
NONSCIA	.2929	.1805	2.6333	1	.1046	.0228	1.3403
RESITS	-.4135	.3653	1.2809	1	.2577	.0000	.6613
GSTAKEN	.5452	.1818	8.9912	1	.0027	.0758	1.7250
GSGRADE1	.0846	.1287	.4323	1	.5108	.0000	1.0883
ASN	.0397	.1643	.0584	1	.8091	.0000	1.0405
APPDATE1	-.5587	.1267	19.4473	1	.0000	-.1198	.5719
PREVAPP	-.1535	.3569	.1849	1	.6672	.0000	.8577
INSURNCE	-.6783	.2053	10.9184	1	.0010	-.0856	.5075
LE4MED	-.4112	.3317	1.5366	1	.2151	.0000	.6629
MEDAPP6	-1.6281	.6245	6.7975	1	.0091	-.0628	.1963
SEX1	.2118	.1664	1.6202	1	.2031	.0000	1.2360
MATURE	-.1969	.3707	.2823	1	.5952	.0000	.8212
SOCIAL2	-.0739	.0933	.6279	1	.4281	.0000	.9287
ETHNIC3	-.5521	.2363	5.4564	1	.0195	-.0533	.5758
INDEPEND	-.1897	.2226	.7267	1	.3939	.0000	.8272
FEHE	-.4865	.3225	2.2751	1	.1315	-.0150	.6148
GRAMMAR	.1993	.2749	.5254	1	.4685	.0000	1.2205
OTHSCHL	-.1723	.2701	.4071	1	.5234	.0000	.8417
LOCAL	.6786	.1758	14.9014	1	.0001	.1030	1.9712
Constant	-3.7008	1.1821	9.8018	1	.0017		

Appendix 11: Effect sizes of significant effects at individual medical schools{tc "Appendix 11: Effect sizes of significant effects at individual medical schools" \l 2}.

Values marked ‘na’ (not applicable) have been omitted as they involve A-levels at Scottish schools, or Scottish Highers at any school. The precise values are however available in the detailed output for individual schools in the previous appendix.

	Educational									Application					Demographic									
1996 1997	Mean A-Level grade	No of A-levels	1+ Non-Sci-ence A-level	Resat A-levels/ Highers	Gen-eral Studies Taken	Gen-eral Studies Grade	No of AS-levels	No of Scot-tish Highers	Mean grade Scot-tish Highers	App’n date	Prev App’n	Insur-amce	Less than 5 med app’ns	Six medical app’ns	Sex	Mature	Social class	Ethnic mino-rity	Non-State school	FE/ HE	Gram-mar Sch’l	Other sch’l	Local App’ant	Gap year
A20: Aberdeen	na	na	na		na	na	na	na	na				-1.157 -.675										1.670 .813	-3.44
B32: Birmingham	.377.685							na	na	-.767 -.680														
B78: Bristol	.538.685							na	na	-.284 -.680													.438 .356	

C05: Cambridge	.820 .850	.299 .598						na	na	na								-.345 -.622						
C40: CXWMS	.564 .524			-1.643 -1.423				na	na	-.955 -.986		-1.118 -.550		-2.055 -.912			-.282 -.269	-.837 -.769						
D65: Dundee	Na	na	na		na	na	na	na	na							-1.409 -1.348		-.662 -.526					2.250 1.718	1.58
E56: Edinburgh	Na	na	na		na	na	na	na	na	-.558 -.410														.73
G28: Glasgow	Na	na	na		na	na	na	na	na	-.450 -.460			-1.191 -.944		.544 .525								.817 .882	
I50: Imperial College	.352 .464							na	na						.285 .546		-.204 -.287	-.835 -1.029		-1.348 -1.165				
K72: King's College	.634 .466							na	na	-1.335 -.429					.493 .630			-.593 -.756						
L23: Leeds	.219 .284							na	na	-.297 -.263		-.303 -.444	-.807 -.543		.361 .499			-.614 -.896		-.889 -.995		-.443 -.609		

L34: Leicester-	.268.218			-1.730 -.786				na	na						.611 .419	-1.115 -1.927		-.530 -.402						
L41: Liverpool	.409.370							na	na	-.481 -.526			-1.286 -1.064		.472 .263			-.544 -.528					.535 .297	
M20: Manchester	.268.237				.381 .482	.405 .188		na	na	-.439 -.641	-.631 -1.034	-.378 -.289	-.981 -.439		.494 .207			-.479 -.401						.667
N21: Newcastle	.748.597	.394.548	-.668-.429			.367 .467		na	na	-.320 -.306					.812 .502									
N84: Nottingham	.587.484							na	na	-.493 -.728					.640 .604	.985 1.167		-.506 -.900						
O33: Oxford	.971.960							na	na	na														

Q50: QMW	.407.435			-2.126 -1.311				na	na	-.483 -.852	-.994 -.578		-1.346 -.807		.470 .327	-1.536 -.738		-.683 -.883		-.773 -.722				
Q75: Queen's, Belfast	.810.850							na	na																
R60: Royal Free	.669.487			-.733 -1.055		.388 .581		na	na	-.562 -.504					.230 .530										
S18: Sheffield	.580.477							na	na						.393 .616			-.586 -.676							
S27: Southampton	.497.599			-2.257 -1.821				na	na	-.326 -1.575	2.240 1.058							-.802 -.373							
S36: St. Andrews	na	na	na	-1.418 -2.586	na	na	na	na	na	-.723 -.537			-1.507 -1.017					-.840 -1.101					2.001 1.867	-2.53	
S49: St. George's	.606.485			-1.538 -2.616				na	na	-.538 -.530		-.463 -.710				-.919 -2.294		-.387 -.645		-.783 -1.254					

U60: UMDS	.609.551							na	na	-.404 -.783		-.726 -.497						-.724 -.901						
U80: UCL	.395.400			-.879 -1.001				na	na	-.644 -.401		-.465 -.636						-.968 -.813						
W10: Wales	.498.359							na	na	-.789 -.559		-.409 -.678		-2.451 -1.628				-.543 -.552					.786 .679	

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