



A Description of the 4th Version of the QRESEARCH Database

*An analysis using QRESEARCH
for the Department of Health*

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2 EXECUTIVE SUMMARY

This report contains a description of the national QRESEARCH database (version 4) downloaded 1 August 2004. It provides a high level summary of the content, scope and quality of the data. More detailed analyses of each of the sections are likely to become available over time and this report should be read in conjunction with previous reports [see section 3].

In summary:

- ✚ There are 468 practices in the current version of the QRESEARCH database. QRESEARCH has an excellent geographical coverage with 5 or more practices in every Strategic health Authority in England. This means that it is possible to conduct SHA level analysis.
- ✚ QRESEARCH contains socio-economic data. Our analysis shows that there is a very good spread of patients in areas of deprivation and affluence as measured by the Townsend score at output area, making QRESEARCH an idea (and potentially unique) source of data for exploring and monitoring health inequalities for patients by deprivation. One third of patients live in rural areas which makes analyses by urban/rural very possible.
- ✚ There are 7.4 million patients on the database in total representing more than 26 million years of observation making it one of the largest aggregated general practice databases in the world.
- ✚ There are 3.3 million patients currently registered with 468 practices, covering approximately 6% of the total population. Over 95% of these have a date of registration with the practice recorded.
- ✚ The age-sex structure of the population in 2004 compares very well with the 2001 census population pyramid. Date of birth is recorded in more than 99.6% of patients.
- ✚ Over 97% of practices have some electronic links for pathology data though we have not investigated the completeness of this yet.
- ✚ QRESEARCH has extensive longitudinal data available with records back to 1988. Approximately half the practices (n=225) have data for more than 8 years and 86% have data for four or more years.
- ✚ Data is uploaded constantly from the practices to the EMIS collection server in Leeds. The data transfers to Nottingham are frequent with the latest data

available until 1 August 2004. We have developed a new facility which enables analyses using data for the last few days or weeks in response to an urgent situation.

- ✚ There are 383,294 deaths recorded on the database and the crude death rate compares reasonably well with national data. The gradual decline in death rates observed in national data is also demonstrated in QRESEARCH data although the absolute rates are marginally lower. There is considerable scope for using QRESEARCH for survival analysis.
- ✚ There are 322,312 births recorded on the database. The crude birth rate on QRESEARCH compares well with the birth rate for England and Wales. The trend in birth rate over the last ten years is similar for both data sources.
- ✚ Hospital referral rates in QRESEARCH comparable with published data derived from hospital sources¹ though are higher than those recorded in GPRD.
- ✚ In QRESEARCH there were 11.3 prescription items issued per head of population in 2003 which is marginally higher than the 10.7 prescription items reported in the Prescribing Cost Analysis bulletin (2003). The difference is likely to be due to prescriptions which were prescribed by the practices in QRESEARCH but not cashed by patients.
- ✚ There are more than 150 million consultations recorded on the database. The crude consultation rate for GPs and nurses compares well with the General Household Survey.
- ✚ QRESEARCH holds data on the location of consultations (home, telephone, visits etc) as well as the category of staff conducting the consultation making it an ideal source of data to inform studies profiling workload in general practice.
- ✚ Future reports will cover the prevalence of conditions in the new General Medical Services Contract, compared with external data sources and so is not included in this report.

3 BACKGROUND

This report describes the national QRESEARCH database (version 4). Version 4 of the national QRESEARCH database contains data from 468 practices and was downloaded on 1 August 2004. In addition, there are approximately 20 other practices still to be uploaded (including 12 in Northern Ireland where there are NHS net connection problems) which will bring the final database to just under 500 practices (approximately 10% of practices which volunteered did not activate their systems or have had connection difficulties).

3.1 National Practice Recruitment

On 9 June 2003, the University of Nottingham and EMIS contacted all EMIS practices using the system 5. Of the 4,549 EMIS practices in England, Wales, Scotland & Northern Ireland, 549 (12.07%) have agreed to take part in QRESEARCH (including the 43 pilot sites). Table 1 shows details of practices which volunteered.

Table 1: The number of practices in England, Scotland, Wales & Northern Ireland – those using EMIS version 5 and those volunteering for the National Database

	Total number of EMIS v5 practices	Total No volunteering for national QRESEARCH	% Uptake
England	4,249	512	12.1
Wales	90	11	12.2
Scotland	54	10	18.5
Northern Ireland	156	16	10.3
Total	4,549	549	12.1

3.2 Geographical location of the practices

The next table shows the number of practices in each Government Office Region or country that were using EMIS on 1 January 2004. In order to be included in this analysis, practices had to be using EMIS by 1 January 2004 and patients had to be registered on 1 January 2004. Five practices had a missing date of EMIS installation and these were excluded from the analyses.

Table 2: Number of practices and patients in 2004 by Government Office Region

	Number of practices	Number of patients registered on 1st January 2004
North East	23	190,190
North West	48	298,242
Yorkshire and Humberside	51	363,106
East Midlands	62	427,037
West Midlands	30	205,293
East of England	35	259,428
London	55	402,334
South East	63	490,921
South West	55	396,676
Wales	7	513,75
Scotland	6	334,61
Currently missing code for GOR	28	180,254
Total	463	3,298,317

The practices are well distributed throughout the UK. There are 12 practices in Northern Ireland still to upload data (the delay has been due to NHS net connection problems) and 8 in Scotland and Wales.

Table 3 shows the number of practices in each Strategic Health Authority in 2004. In order to be included in this analysis, practices had to be using EMIS by 1 January 2004 and patients had to be registered on 1st January 2004. There are five or more practices in every Strategic Health Authority in England making it possible to undertake comparative analyses between Strategic Health Authorities.

Table 3: Number of practices in England in 2004 by Strategic Health Authority

SHA Code	Strategic Health Authority	Number of practices	No. patients registered 1st Jan 2004
Q01	Norfolk, Suffolk & Cambridgeshire	18	144,550
Q02	Bedford & Hertfordshire	12	80,211
Q03	Essex	5	34,667
Q04	North West London	13	71,343
Q05	North Central London	8	66,686
Q06	North East London	16	107,840
Q07	South East London	14	111,734
Q08	South West London	4	44,731
Q09	Northumberland, Tyne & Wear	18	153,830
Q10	County Durham & Tees Valley	5	36,360
Q11	North & East Yorkshire & Northern Lincolnshire	29	210,624
Q12	West Yorkshire	16	122,322
Q13	Cumbria & Lancashire	18	97,264
Q14	Greater Manchester	10	62,379
Q15	Cheshire & Merseyside	20	138,599
Q16	Thames Valley	23	182,862
Q17	Hampshire & Isle Of Wight	12	93,839
Q18	Kent & Medway	8	60,620
Q19	Surrey & Sussex	20	153,600
Q20	Avon, Gloucestershire & Wiltshire	28	213,429
Q21	South West Peninsula	8	43,918
Q22	Somerset & Dorset	19	139,329
Q23	South Yorkshire	6	30,160
Q24	Trent	40	257,645
Q25	Leicestershire, Northamptonshire & Rutland	22	169,392
Q26	Shropshire & Staffordshire	11	78,861
Q27	Birmingham & The Black Country	13	91,193
Q28	West Midlands South	6	35,239

3.3 Socio-economic data

QRESEARCH contains data related to the output area associated with the patients' postcode as determined by the 2001 census (details can be found in the appendix).

Of the 3.3 million patients registered on 1 January 2004, 2.9 million (90.8%) had been allocated to an output area and could therefore be associated with relevant census data. Overall, 35.6% of patients lived in rural areas and 64.4% lived in urban areas.

We used the national cut offs for Townsend quintiles and then allocated patients to the relevant quintile based on this. Table 4 shows that approximately 20% of patients were allocated to each quintile suggesting that the population on the database is representative of the national population in terms of deprivation. QRESEARCH is a very rich (and probably unique) source of data for exploring and monitoring inequalities in health.

Table 4: Distribution of patients in each quintile of Townsend score in 2004

	No. of patients in each Townsend deprivation quintile	Col %
Townsend quintile 1	676,633	22.59
quintile 2	591,942	19.76
quintile 3	568,132	18.96
quintile 4	541,443	18.07
quintile 5	617,579	20.62
Total	2,995,729	100

Uploads of the Index of Multiple Deprivation Score and its components are now underway and are complete for 50% of patients (the initial routine to link patients to Index of Multiple Deprivation Score failed in 50% of patients due to a software bug. This has now been rectified and the linkage has been repeated and the new data is being uploaded). We expect that the next version of the database will have more than 90% of patients with complete data for IMDS.

3.4 Frequency of uploads

QRESEARCH is incremented every day at the collection server in Leeds and a full database for analysis is refreshed each quarter. This can be more frequent if required. In addition, there is an incremental weekly download which is used for the Health Protection Agency weekly bulletin.

3.5 Availability of longitudinal records

Individual patient records are available from the date of EMIS installation that is recorded on the database. The following table (table 5) describes the duration of usage for practices in the QRESEARCH database (version 4). 225 practices (49% of 463) have 8 or more years of longitudinal data available for analysis and 401 practices (87%) have 4 or more years.

Inclusion criteria: In order to be included in the annual analyses, practices had to have EMIS installed on the 1st January and patients had to be registered at some point during the year. Five practices which did not have a valid date of computer installation have been excluded from this analysis.

Table 5: Number of practices and patients registered by year

	number of practices	Patient registered at any time during year	Patient years (registered anytime in year)	Patients registered on 1st January	Patients years (reg 1st January)
<1990	2	15,051	14,019	14,042	13,636
1990	5	29,569	27,293	27,388	26,403
1991	44	406,650	369,977	367,385	352,695
1992	71	656,703	598,762	596,070	573,261
1993	106	892,256	809,821	808,179	775,262
1994	154	1,249,947	1,131,987	1,137,029	1,085,549
1995	183	1,476,855	1,328,971	1,338,964	1,273,185
1996	225	1,809,850	1,637,710	1,629,185	1,564,385
1997	274	2,217,113	2,000,373	1,994,355	1,910,564
1998	309	2,495,615	2,250,691	2,250,967	2,152,923
1999	336	2,729,701	2,463,137	2,453,262	2,351,664
2000	401	3,217,347	2,909,692	2,902,801	2,780,442
2001	428	3,391,028	3,065,589	3,060,087	2,931,693
2002	457	3,608,935	3,257,411	3,249,264	3,111,085
2003	463	3,649,530	3,298,415	3,296,473	3,154,748
2004	463	3,429,836	1,392,581	3,298,317	1,366,452
Total*	463	7,432,398	26,556,428	n/a	n/a

* the total is the total number of patients ever registered or the total number of patient years rather than the sum of the above. Practices without an installation date are excluded from this analysis

Where possible, EMIS transfer data from legacy systems on installation of their system into new practices. Since the data structures are system dependent, less reliance can be placed on the data available that is recorded before the practice had their EMIS computer system installed. Using the date that EMIS was installed and the date associated with the latest transfer of data from the practices will enable us to determine which practices are contributing data at any one given time point or time period.

As with all GP data, the quality of the data in terms of completeness has been increasing over the years since it is no longer required to keep paper records and many practices use electronic records alone.

3.6 Laboratory links for pathology data

Table 6 shows the number of practices which had electronic links for pathology data installed in each year. By 2004, over 97% of practices had links installed leaving just 12 practices without any lab links. We have not investigated the scope of the items covered or estimated how complete and consistent these data are.

Table 6: Cumulative number of practices with evidence of electronic lab links by 2004

	Number of practices
1999	109
2000	236
2001	319
2002	396
2003	454
2004	456

3.7 Population structure

In total there are 7.4 million patients ever registered with 468 practices contained within the national QRESEARCH database (version 4, downloaded 1 August 2004).

3.8 Basic registration details

Of the 7.4 million patients on the QRESEARCH database (version 4), 3.3 million patients are currently registered (on transfer date), 3.7 million had left and 380,242 had died. In total, there were 3.6 million males (48.05%), 3.7 million females (51.95%) and 33 patients with indeterminant sex (coded 'I' on the database). Date of birth was recorded for 99.96% of all patients.

Table 7: Number of patients with and without a recorded date of registration by status as of 1 August 2004 in 468 QRSEARCH practices

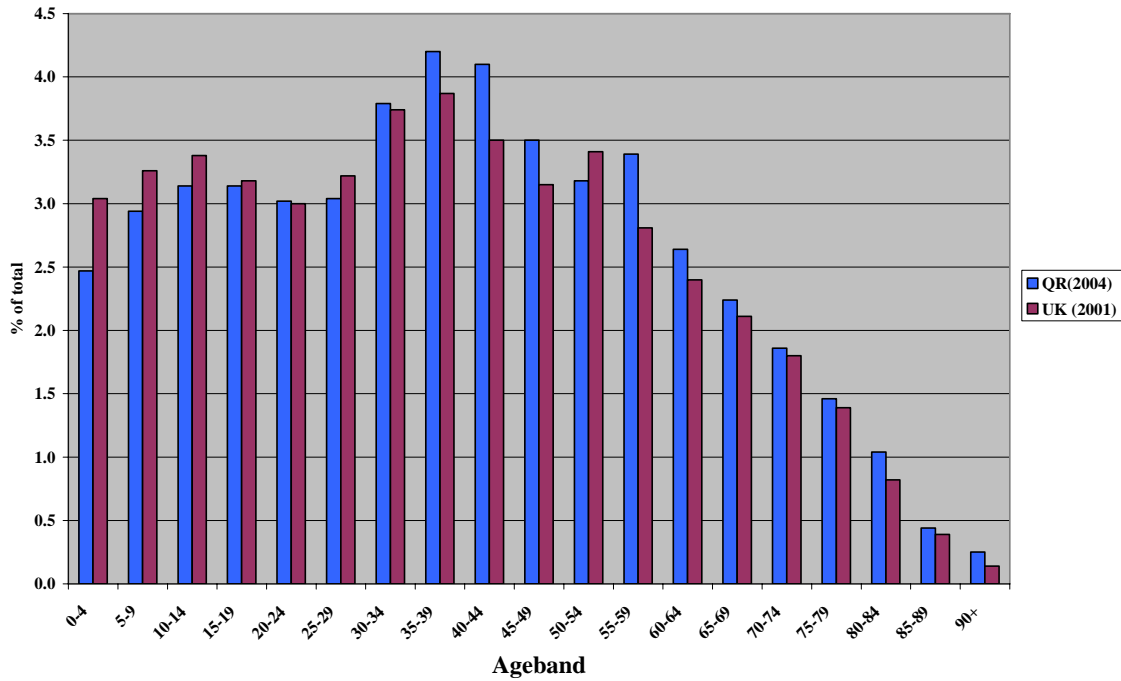
Registration status	No. of patients	Patients with registration date recorded	Row %	Patients without registration date recorded	% row
Current	3,315,974	3,186,896	96.1	129,078	3.9
Died	380,242	331,904	87.3	48,338	12.7
Left	3,736,182	3,304,584	88.5	431,598	11.6
Total	7,432,398	6,823,384	91.8	609,014	8.2

The next two charts shows the age sex structure of the population registered on 1 August 2004 and comparative data for the UK derived from the 2001 census (source <http://www.statistics.gov.uk/census2001/pyramids/pages/UK.asp>).

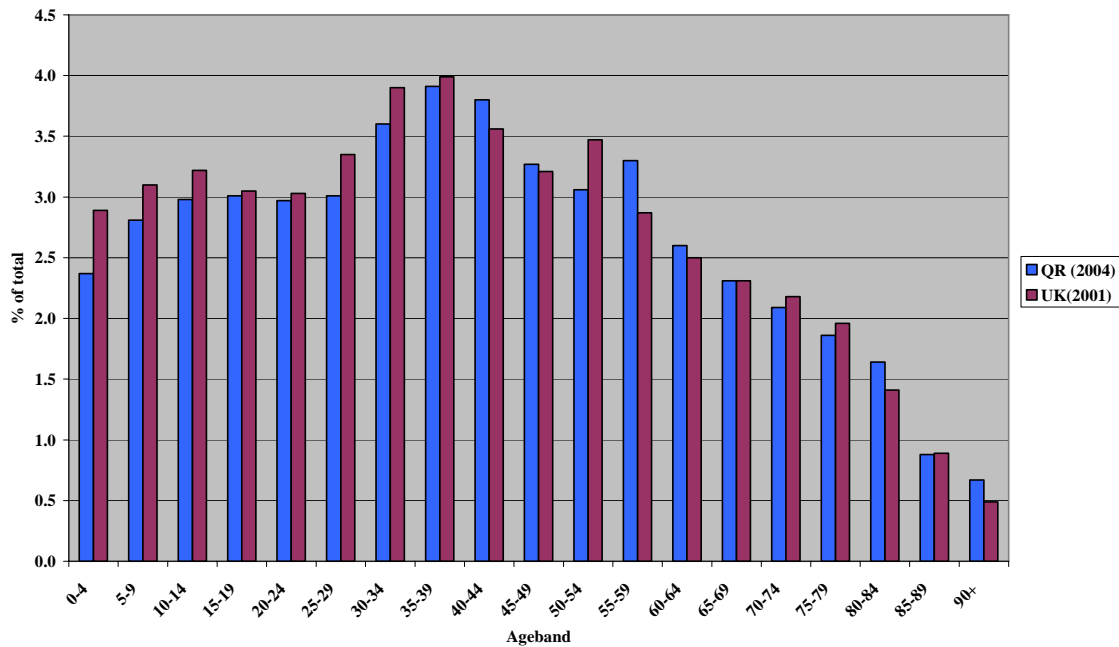
This shows that the age-sex structure in the QRESEARCH in 2004 sites is similar to that derived from the 2001 census (bearing in mind the three year difference in measurements). There was a slightly higher percentage of males aged 40-49 in QRESEARCH compared with the 2001 census. Importantly, the percentage of very elderly showed a good correspondence which suggests there aren't many elderly 'ghost' patients.

Age sex structure of the currently registered population in 468 practices in the QRESEARCH national database (version 4) on 1st August 2004

Age structure for males in QRESEARCH 2004 vs UK Census 2001



Age structure for females in QRESEARCH in 2004 vs UK Census 2001



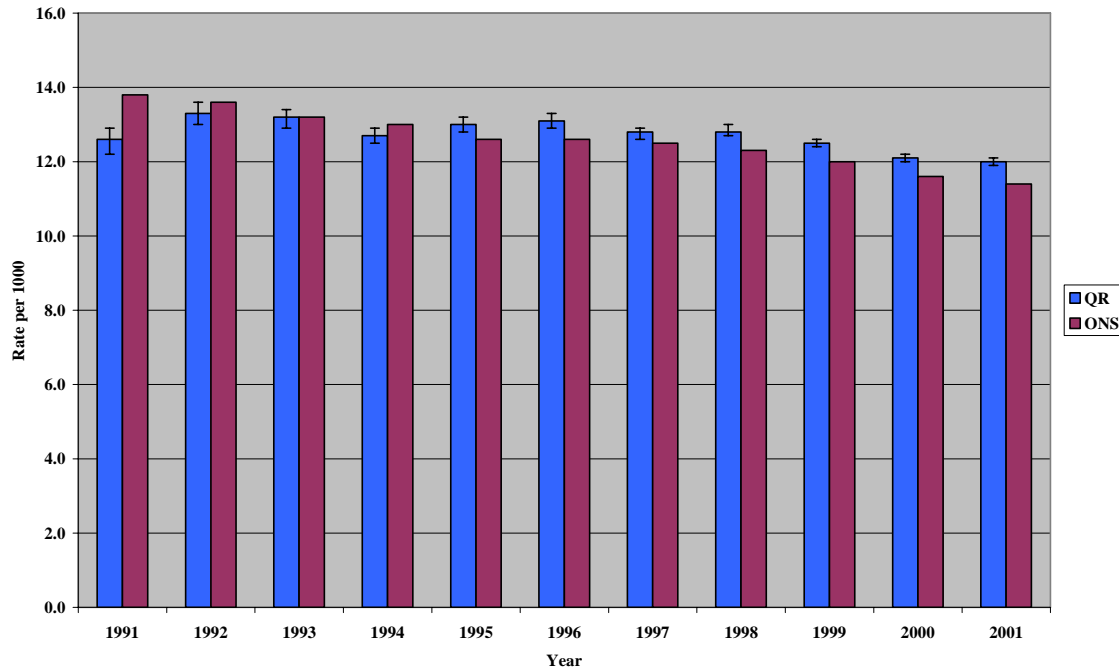
3.9 Birth rates

Overall there were 322,312 births on the QRESEARCH database (version 4) across all 486 practices.

Inclusion criteria: In order to be included in the annual analysis of birth rates, practices had to be using EMIS on 1st January of the year under consideration. The denominator for the birth rate was all patients who were registered on 1st January of each year. Five practices had a missing date of EMIS installation and these were excluded from the analyses. Patients whose date of birth fell in the analysis year were included in the numerator for births as long as they were also registered at some point during the next 13 months. This definition allowed patients who were born at the end of one year who registered in the following January to be included in the figures).

The next graph shows the shows the crude birth rate per 1000 population for each calendar year between 1990 and 2004. The comparative figures for England and Wales are also shown (the same data are presented in table 8 in the appendix).

Birth rates per 1000 population 1991-2001 in QRESEARCH and ONS



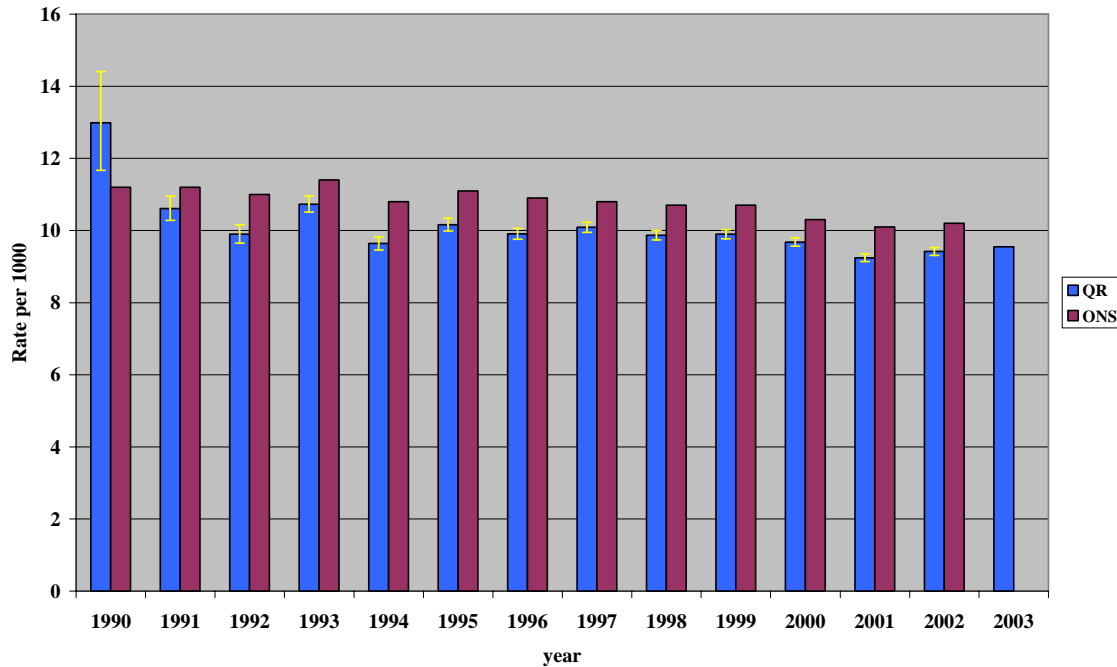
QRESEARCH figures are marginally higher than ONS. This could be due to the definition of birth rate used in this analysis which might have slightly over-estimated birth rates. However, a more restrictive definition (where we only included birth where the patient registered within 12 months) gives rates which are marginally lower than the rates for England and Wales.

3.10 Death rates

There were 0.4 million deaths ever recorded on the QRESEARCH database (version 4) across all 468 practices.

Inclusion criteria: In order to be included in the analysis for each year, practices needed to be using EMIS on 1 January each year and patients had to be registered on 1 January each year. Five practices had a missing date of EMIS installation and these were excluded from the annual analyses. The next chart shows the death rates per 1000 population in each of the calendar years 1990 to 2003 compared with ONS data. Table 9 (appendix) has the same data in tabular format.

Death rates per 1000 patients in QRESEARCH vs ONS 1990-2003



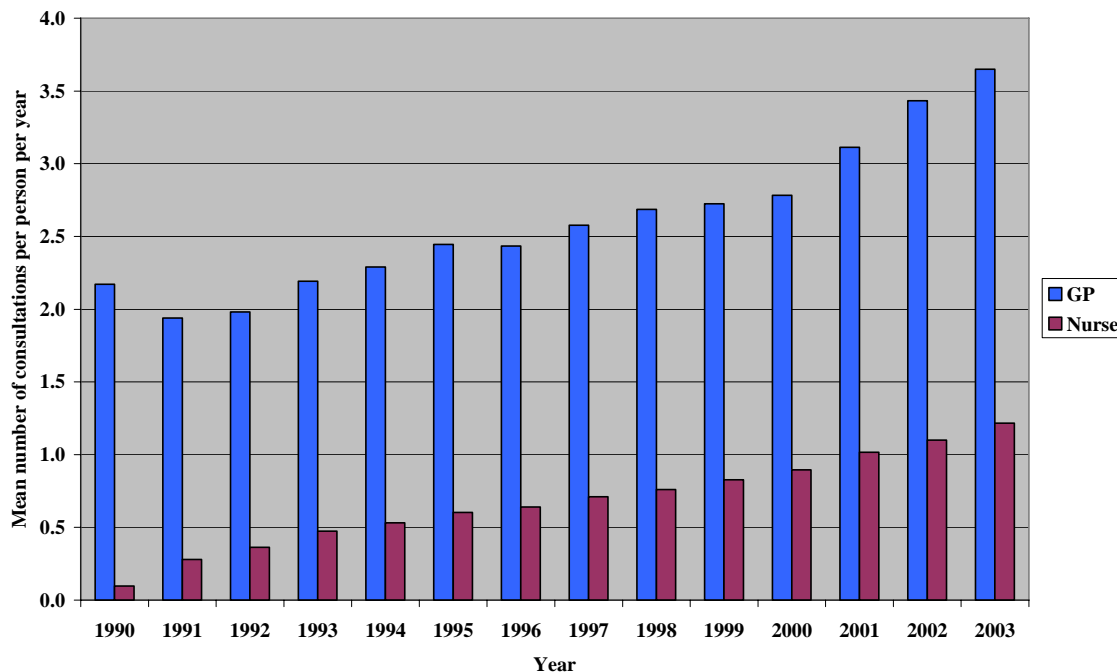
QRESEARCH death rates tend to be lower than ONS death rates although the overall downward trend is similar in both data sets. The lower death rates could be due to delays in registering deaths on the practice computer. For example, a patient may die in December of one year but may not be recorded as having died until the January of the following year. Differences in the rates could also be due to differences in the denominators [Dave Roberts, Prescribing Support Unit, pointed out that ONS rates are based on population estimates and there is up to 30% difference between this and G registered list sizes]. Thirdly, the denominator used for calculating death rates in QRESEARCH is patients registered on 1 January of the relevant year. This will tend to under-estimate the rate compared with the alternative method for calculating rates which involves using person years as the denominator.

3.11 Consultation rates

By 2004, there had been more than 150 million consultations on the QRESEARCH database (version 4) across all 468 practices. This includes GP, nurse and consultations with other professionals. No account has been taken of the location of the consultation and these analyses therefore include clinical activity associated with checking pathology results in addition to direct patient contact. Future reports will undertake more detailed analyses.

Inclusion criteria: In order to be included in the analysis of consultation rates for each year, practices needed to be using EMIS on 1 January each year and patients had to be registered on 1 January each year. Five practices had a missing date of EMIS installation and these were excluded from the analyses. The next graph shows the mean number of GP and nurse consultations per person in each calendar year (the same data are shown in table 10 & 11 of the appendix).

Mean number of GP and nurse consultations per person per year 1990 to 2003



The 2001 General Household Survey GP consultation rates to be approximately 4 per person per year which is broadly similar to the rates derived from QRESEARCH. The General Household Survey (2001) showed similar rates of between one to two consultations with a nurse per person per year which is similar to the rates in QRESEARCH. Subsequent workstreams will allow for analysis by place of consultation (home, surgery, telephone and “other”). The table shows an apparent increase in

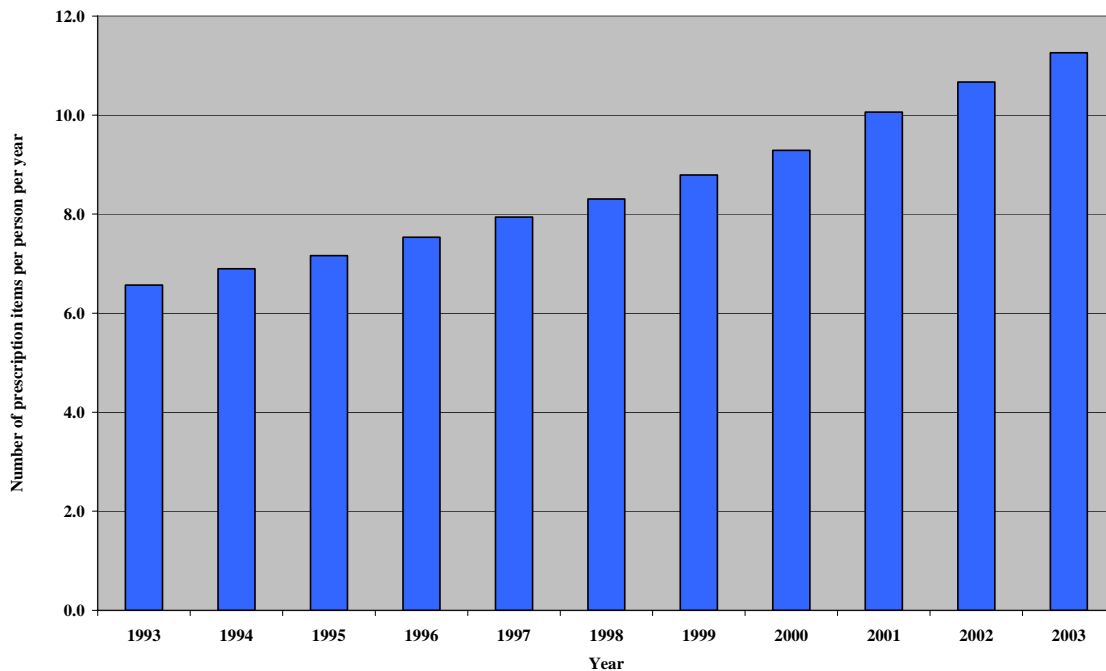
consultation rate over the past 13 years. This could reflect a true increase or an apparent increase due to improved recording or due to increase electronic messaging associated with checking pathology results.

3.12 Prescribing rates

There were over 333.8 million prescription items ever issued on the QRESEARCH database (version 4) across all 468 practices. Of these, 66.0 million were 'Acute', 139.7 million were coded as 'Repeat' and 128.1 million were coded as 'Past'.

In order to be included in the analysis of prescribing rates for each year, practices needed to be using EMIS on 1 January each year and patients had to be registered on 1st January each year. Five practices had a missing date of EMIS installation and these were excluded from the analyses. The next graph shows the mean number of prescription items per person per year (also see table 12 in the appendix).

Mean number of prescription items per person per year in QRESEARCH 1993 to 2003



There were on average 11.3 prescription items issued per head of population in 2003 in QRESEARCH. The latest prescribing rates per person for 2003 from the Prescription Cost Analysis bulletin gives a rate of 13.1 prescription items per person per year which is higher than our rate. However, this rate includes all prescriptions dispensed in the community it also includes prescriptions written by nurses, dentists and hospital doctors provided they were dispensed in the community. In 2003, it is estimated that 2.4

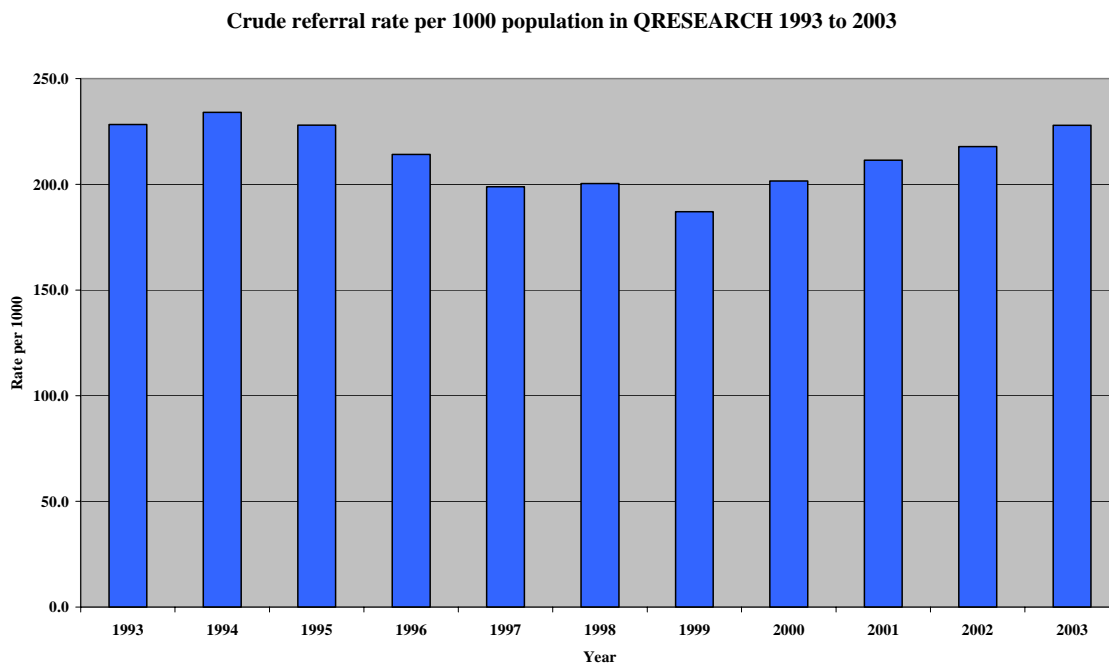
prescription items per person were prescribed by hospital doctors and dentists which gives an estimate 10.7 prescription items per person prescribed by general practice. This is slightly lower than the rate of 11.3 prescription items on QRESEARCH. The difference is likely to be due to prescription items which were issued by the practice but not cashed by the patient.

3.13 Referral rates

Hospital referral data is recorded in two places in the database. Referrals are entered by clinicians using Read codes and this is stored with the clinical data in the 'observations table'. There is also an administrative referrals table which was used to record referrals associated fund holding activity.

In order to be included in the analysis of referral rates for each year, practices needed to be using EMIS on 1st January each year and patients had to be registered on 1 January each year. Five practices had a missing date of EMIS installation and these were excluded from the analyses.

The next graph shows hospital referral rates from 1990 to 2003 per 1000 population using data recorded in the clinical (rather than the administrative) section of the database. The same data are presented in table 13 of the appendix.



In 1994 the crude referral rate in QRESEARCH was 234.1 per 1000 (95% CI 233.2 to 234.9) and in 1998 it was 200.3 per 1000 (199.7 to 200.9). The rate in QRESEARCH is very close to the rate determined in a large study of outpatient referrals in Nottinghamshire in 1993. In this study the overall referral rate was 215 per 1,000 population¹. Our rates are significantly higher than those reported in Key Health Statistics for 1994 to 1998 were 141.8 to 150.3 per 1,000 population³. This could be due to true

differences in rates or differences in the case definition used to identify a referral or differences in recording.

Although out of the scope of this report, it would be possible to examine referral rates by specialty.

3.14 Clinical data and diagnoses

In the last “OBSERVATIONS” table, GPs record a range of other information about the clinical care of their patients including:

- diagnosis (e.g. diabetes) or problems (e.g. stress at work)
- symptoms (e.g. haemoptysis)
- clinical measurements (e.g. blood pressure, height, weight etc)
- blood test results (e.g. cholesterol, creatinine)
- coded clinical examination findings (e.g. fundi normal)
- procedures (e.g. as minor surgery, operations).
- hospital referrals
- Miscellaneous (e.g. sick note etc).

Each row in the OBSERVATIONS table represents one item of information. Therefore a patient who attend the surgery to see their GP has a diagnosis of diabetes made, a weight recorded, a cholesterol blood test result entered, a minor surgical procedure) and a sick note could have five rows of data all linked to that patient, that doctor, that date and that particular consultation.

There were over 460 million events recorded in the OBSERVATIONS table on the QRESEARCH database at any time.

3.15 Category of staff entering data

In total, there were 54,292 different individuals who had ever entered data on the QRESEARCH database (version 4) across all 468 practices.

Of these, 13,486 were GPs, 1596 were GP registrars, 1,120 were on call doctors, 11,492 were nurses, 2,457 were professions allied to medicine; 20,871 were administrative staff, 263 were external doctors [eg consultants] and 136 were pharmacists. There were 2,871 staff in the miscellaneous category. The categorization of staff is the same as was described in DoH Report 6.

Table 14 shows the number of each category of staff who entered data at any time during the calendar year 2003 (data for previous years is available on request). It also shows the number (%) of staff who had also entered data in the last quarter of the preceding year (Oct –Dec 02). The five practices with a missing date of EMIS installation were excluded the annual analysis.

Table 14: Types of staff entering data on the QRESEARCH database in 2003 (and those who also have an entry in the last quarter of 2002)

	Users at any time during 2003	% of 16883	User entered data within last 3 months of 2002	% of 14701
GP	5,281	31.3	4,813	32.7
GP registrar	725	4.3	621	4.2
On call doctor	298	1.8	273	1.9
Nurse	3,679	21.8	3,228	22.0
Professions allied to medicine	677	4.0	607	4.1
administrative staff	5,759	34.1	4,850	33.0
external doctors	44	0.3	32	0.2
Pharmacists	40	0.2	32	0.2
Other	380	2.3	245	1.7
Total	16,883	100.0	14,701	100.0

As expected, the most common type of staff entering data were GPs and administrative staff, accounting for over 65% of all staff members. The next most common category of staff were nurses (accounting for 21.8% of staff in 2003). There were relatively few PAMs and pharmacists.

3.16 Notes on data analysis

We are able to provide analysis by identifiable SHA for England and Wales and for Scotland and Northern Ireland as a group. We can conduct analyses at GP practice level but the identity of the practice will not be known.

We have calculated confidence intervals for birth rates and death rates based on the Poisson distribution.

Since patients can have more than one consultation, referral or script in each year, and the events are not rare, then we would need to consider negative binomial regression if we were to calculate confidence intervals for these rates.

Lastly, taking account of clustering of practices would require a multi-level approach and would result in wider confidence intervals. This would need a more sophisticated approach using STATA. We can look into this if it is considered a priority for the DoH. If so, it may be best to do this in answer to a specific question within the work streams during the year.

4 REFERENCES

1. Hippisley-Cox J, Hardy C, Pringle M, Fielding K, Carlisle R, Chilvers C. The effect of deprivation on variations in general practitioners' referral rates: a cross sectional study of computerised data on new medical and surgical outpatient referrals in Nottinghamshire. *BMJ* 1997;314(7092):1458-1461.

5 APPENDIX 1: Additional tables

Table 8: Crude birth rate per 1000 population in the QRESEARCH Database (version 4) and ONS

	QRESEARCH Jan 1 population	Total number of births in year	Birth rater per 1000 population	LCL	UCL	Birth rates per 1000 population of all ages in E&W
1991	367,461	4,502	12.3	11.9	12.6	13.8
1992	596,426	7,729	13.0	12.7	13.3	13.6
1993	808,652	10,501	13.0	12.7	13.2	13.2
1994	1,137,575	14,193	12.5	12.3	12.7	13.0
1995	1,339,427	17,183	12.8	12.6	13.0	12.6
1996	1,629,722	21,009	12.9	12.7	13.1	12.6
1997	1,994,879	25,276	12.7	12.5	12.8	12.5
1998	2,250,528	28,363	12.6	12.5	12.8	12.3
1999	2,452,730	30,403	12.4	12.3	12.5	12.0
2000	2,902,673	34,863	12.0	11.9	12.1	11.6
2001	3,058,686	36,365	11.9	11.8	12.0	11.4

Table 9: Crude death rate per 1000 population in the QRESEARCH (version 4) and ONS

	QRESEARCH Jan 1 population	Total number of deaths in year	Death rate per 1000 population	95% CI	ONS death rates per 1000
1990	27,413	356	13.0	(11.7 to 14.4)	11.2
1991	367,461	3,900	10.6	(10.3 to 11.0)	11.2
1992	596,426	5,905	9.9	(9.7 to 10.2)	11.0
1993	808,652	8,679	10.7	(10.5 to 11.0)	11.4
1994	1,137,575	10,967	9.6	(9.5 to 9.8)	10.8
1995	1,339,427	13,613	10.2	(10.0 to 10.3)	11.1
1996	1,629,722	16,147	9.9	(9.8 to 10.1)	10.9
1997	1,994,879	20,130	10.1	(10.0 to 10.2)	10.8
1998	2,250,528	22,222	9.9	(9.7 to 10.0)	10.7
1999	2,452,730	24,271	9.9	(9.8 to 10.0)	10.7
2000	2,902,673	28,095	9.7	(9.6 to 9.8)	10.3
2001	3,058,686	28,277	9.2	(9.1 to 9.4)	10.1
2002	3247597	30,590	9.4	(9.3 to 9.5)	10.2
2003	3294963	31,463	9.6	(9.4 to 9.7)	

Table 10: Average number of GP consultations per person per year in the QRESEARCH Database (version 4)

	QRESEARCH Jan 1 population	Total consultations in year	Mean number per person per year
1990	27,413	59,520	2.2
1991	367,461	712,919	1.9
1992	596,426	1,181,404	2.0
1993	808,652	1,773,117	2.2
1994	1,137,575	2,605,578	2.3
1995	1,339,427	3,276,598	2.4
1996	1,629,722	3,966,750	2.4
1997	1,994,879	5,141,310	2.6
1998	2,250,528	6,044,973	2.7
1999	2,452,730	6,685,158	2.7
2000	2,902,673	8,079,725	2.8
2001	3,058,686	9,521,594	3.1
2002	3,247,597	11,147,896	3.4
2003	3,294,963	12,024,053	3.6

Table 11: Mean number of nurse consultations per person per year in the QRESEARCH National Database (version 4)

	QRESEARCH Jan 1 population	Total nurse consultations in year	Mean number per person per year
1990	27,413	2,566	0.9
1991	367,461	102,075	0.3
1992	596,426	215,546	0.4
1993	808,652	382,518	0.5
1994	1,137,575	603,342	0.5
1995	1,339,427	807,052	0.6
1996	1,629,722	1,042,963	0.6
1997	1,994,879	1,413,799	0.7
1998	2,250,528	1,709,717	0.8
1999	2,452,730	2,025,978	0.8
2000	2,902,673	2,597,543	0.9
2001	3,058,686	3,106,644	1.0
2002	3,247,597	3,569,662	1.1
2003	3,294,963	4,004,082	1.2

Table 12: Crude prescribing rate per 1000 population in the QRESEARCH Database (version 4)

Year	QRESEARCH Jan 1 population	Total number of scripts in year	Rate per 1000 population	95% CI	
1990	27,413	147,088	5365.6	5338.2	5393.1
1991	367,461	1,948,241	5301.9	5294.5	5309.4
1992	596,426	3,588,171	6016.1	6009.9	6022.4
1993	808,652	5,311,011	6567.7	6562.2	6573.3
1994	1,137,575	7,846,586	6897.6	6892.8	6902.5
1995	1,339,427	9,596,737	7164.8	7160.3	7169.3
1996	1,629,722	12,278,703	7534.2	7530.0	7538.5
1997	1,994,879	15,836,341	7938.5	7934.6	7942.4
1998	2,250,528	18,693,687	8306.4	8302.6	8310.1
1999	2,452,730	21,555,121	8788.2	8784.5	8791.9
2000	2,902,673	26,963,346	9289.1	9285.6	9292.7
2001	3,058,686	30,773,145	10060.9	10057.4	10064.5
2002	3,247,597	34,643,552	10667.4	10663.9	10671.0
2003	3,294,963	37,102,398	11260.3	11256.7	11264.0

Table 13: Crude referral rate per 1000 population in the national QRESEARCH database (version 4)

Year	QRESEARCH Jan 1 population	No. referrals	Referral rate per 1000	95% CI	
1990	27,413	3,640	132.8	128.5	137.2
1991	367,461	53,887	146.7	145.4	147.9
1992	596,426	108,020	181.1	180.0	182.2
1993	808,652	184,592	228.3	227.2	229.3
1994	1,137,575	266,247	234.1	233.2	234.9
1995	1,339,427	305,360	228.0	227.2	228.8
1996	1,629,722	348,992	214.1	213.4	214.9
1997	1,994,879	396,679	198.9	198.2	199.5
1998	2,250,528	450,779	200.3	199.7	200.9
1999	2,452,730	458,704	187.0	186.5	187.6
2000	2,902,673	585,137	201.6	201.1	202.1
2001	3,058,686	646,556	211.4	210.9	211.9
2002	3,247,597	707,470	217.8	217.3	218.4
2003	3,294,963	750,766	227.9	227.3	228.4

