Prevalence of Diseases in the New General Medical Services Contract for General Practitioners: Analysis of QRESEARCH Data

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1 TABLE OF CONTENTS

2 TABLES

3 EXECUTIVE SUMMARY

This report examines 10-year trends in the recorded prevalence of the chronic conditions in the new General Medical Services contract; and the inter-practice variation in recorded prevalence. As far as is possible or practicable, the same codes and methods as in the new GMS contract have been followed. However age and other cut offs have not been applied.

For all conditions examined here (Diabetes was the subject of a separate report) the following can be observed:

- There is a consistent year on year increase in the recorded prevalence of these diseases. There are a number of explanations for this – the prevalence could be increasing for each; improved case finding might be increasing the known prevalence; the completeness of recording might be improving; and the population might be changing its age/gender/ethnic mix (this report concerns crude prevalence only). Whichever the explanations (and we consider them all to be contributing), the recorded crude prevalences started rising well before the new contract and appear to be continuing to rise in all diseases.

- The inter-practice variations in crude recorded prevalence in 2003 are wide and represent the expected normal distribution. But clearly some practices have such low levels as to suggest under-recording and others have such high levels as to suggest the possibility of systematic coding errors.

- Taking the square root, the inter-practice variation reduces as expected although there is still a significant variation between practices.

The headline crude recorded prevalences for 2003 in the QRESEARCH dataset using 426 practices are:

	Crude recorded prevalence per 1,000 registered patients in 2003
Coronary Heart Disease	40.6
Diabetes	32.0
Hypertension	117.8
Stroke or TIA	18.0
Epilepsy	10.3
Hypothyroidism	18.2
Asthma	104.2
Chronic obstructive airways disease	16.9
Cancer	20.4

Severe mental health problems	1.8

4 SPECIFICATION

"We would like an analysis of the prevalence of diseases using the definition from the new General Medical Services Contract. We are interested in inter-practice variation in prevalence and trends over time".

5 OBJECTIVES

- To determine the crude and age standardised prevalence of each of the diseases in the new General Medical Services Contract (nGMS) contract per 1,000 patients. (The prevalence of diabetes is included in reported on in Report 15).
- To report on the inter-practice variation in crude prevalence of each disease per 1,000 patients
- To report on trends in prevalence in each disease over the 10 years 1994 to 2003.
- To determine the inter-practice variation in square root of the crude prevalence of each disease per 1,000 patients.

6 METHOD

6.1 Version of database used

The 4th national version of the QRESEARCH database was used for this analysis. This database contains data until 1 August 2004 and has been described in detail in "Report 14 (October 2004)".

6.2 Practice inclusion criteria

In order to be included in the analysis for any given year, practices had to have complete data for that year and have been using their current EMIS computer system for the previous two years.

6.3 Patient inclusion criteria

In order to be included in the analysis, patients had to be registered on the 1st January of the relevant year and have been registered for the previous 6 months.

6.4 Age standardisation

Direct age-standardisation was done using 5-year age groups, from age 0-4 years to ages 90 and over, using the UK Census 2001 population as the standard population.

6.5 Case definition for each condition

Prevalent cases of each disease were defined by the presence of the relevant Read codes in their record prior to the end of the analysis period. The Read codes used have been taken from "New GMS Contract QOF Implementation Dataset and business rule set, version 5.0 release date 27.09.04" and are listed in Appendix 1.

In the nGMS contract, there are some age and treatment restrictions that have been applied to some diseases in order to select patients who are eligible for inclusion in the quality indicators. As agreed on 18 November 2004, we have reported on the prevalence according to the use of diagnostic Read codes alone.

In future detailed reports on quality indicators for each area, there will be opportunity to report on the prevalence of patients with the diagnosis and the prevalence of those with the disease who also meet the treatment or age restrictions.

7 RESULTS

7.1 Study population

There were 71 practices that had been using EMIS for at least two years in 1994 (0.6 million patients) rising to 426 practices (2.9 million patients) in 2003. Table 1 (appendix) reports the number of patients and practices included in each of the analysis years.

The results are structured as follows:

For each disease in turn we report:

- Trends in the overall crude prevalence rates with 95% confidence intervals
- Trends in the median practice crude prevalence rates
- Inter-practice variation in crude prevalence for 2003
- Inter-practice variation in the square root of the prevalence rate for 2003.

The main body of the text displays summary statements and charts.

The individual data supporting each section are tabulated in full in the appendix. The tables also display the age-standardised rate for reference.

The recorded prevalence of every single disease has increased over the last ten years and the possible reasons for this are considered in the discussion section.

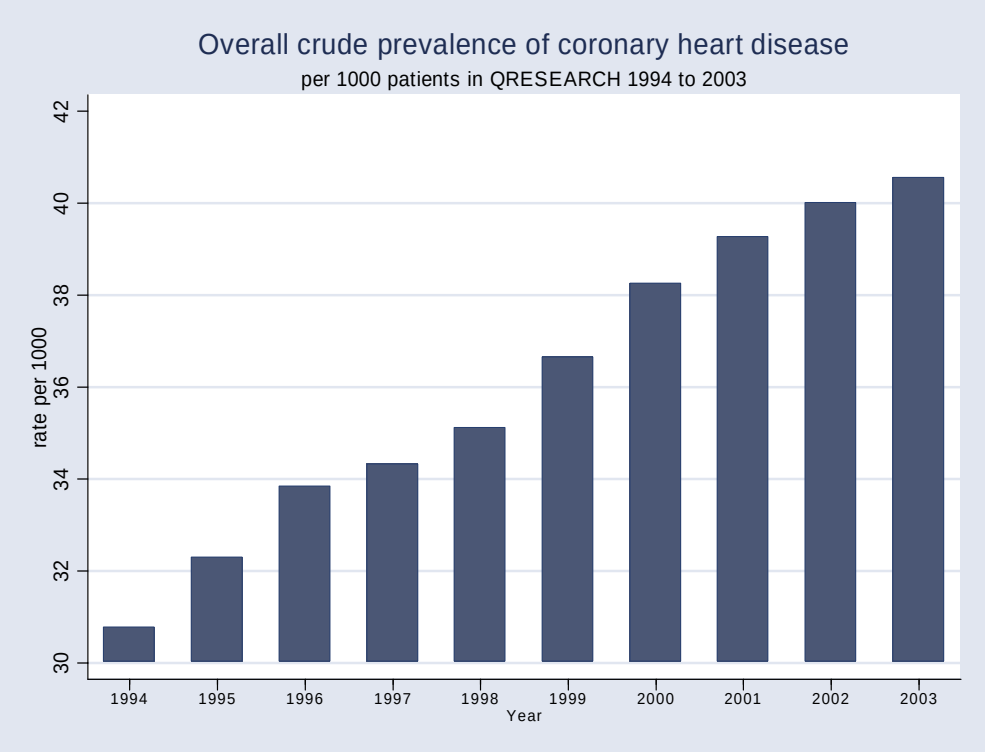
7.2 Trends in overall crude prevalence of coronary heart disease

In 1994 there were just under 18,000 patients with a recorded diagnosis of coronary heart disease from a population of 0.6 million patients giving an overall crude rate of 30.8 per 1,000 (95% CI 30.3 to 31.2).

In 2003, there were just under 119,000 patients with coronary heart disease from a population of 2.9 million patients giving a crude prevalence rate of 40.6 per 1,000 (95% CI 40.3 to 40.8).

The full data are shown in table 1 (appendix, page 47)

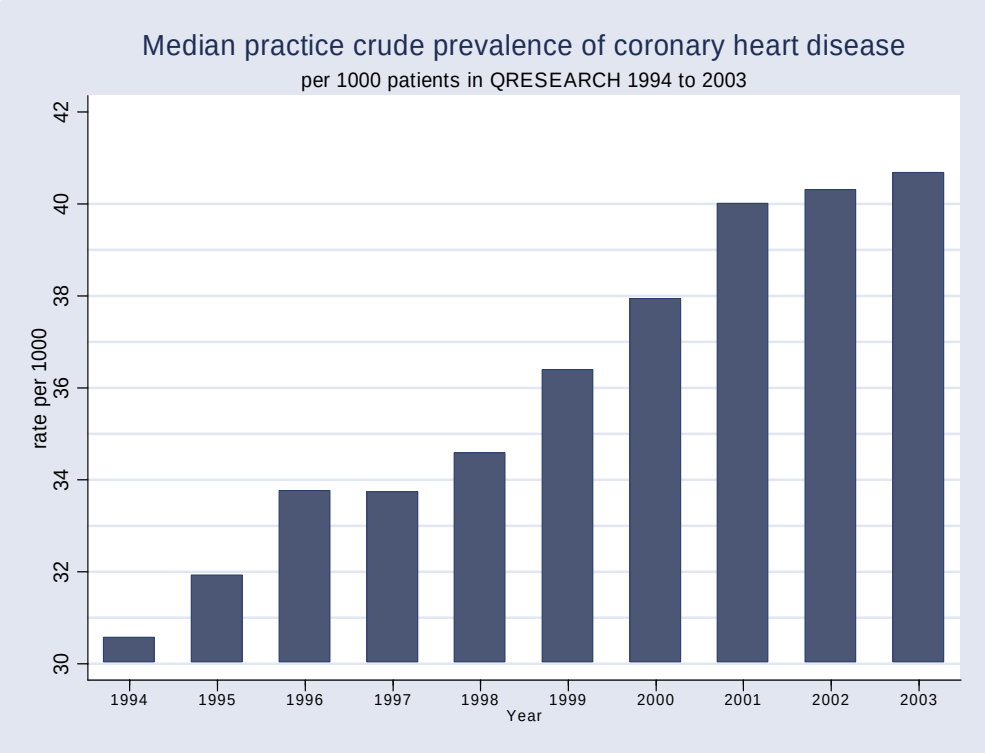
The graph below shows trends in the overall crude prevalence rate of coronary heart disease over the last 10 years. There was a 1.3 fold increase in prevalence of the ten years. There was a similar increase in the age-standardised rate over the ten years.



The coronary heart disease prevalence rate in QRESEARCH is higher than the rate of 37.6 per 1,000 derived from GPRD although the figures are not directly comparable as the GPRD definition included patients who had a diagnosis of CHD as well as treatment with aspirin, or drugs in BNF chapter2, during 1998.

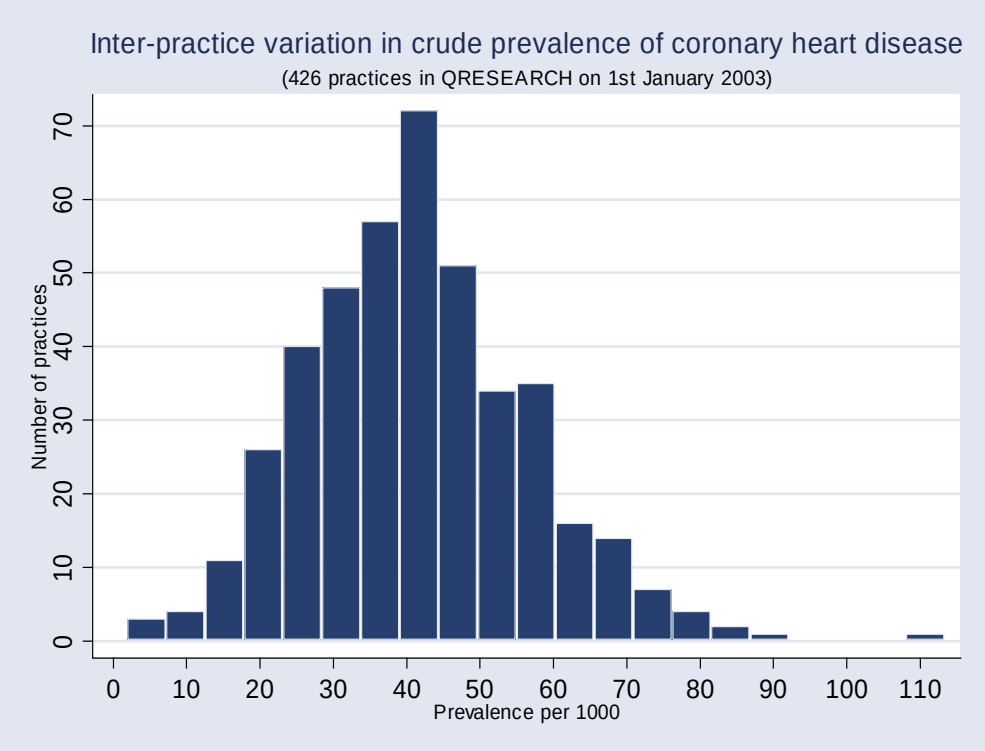
7.3 Trends in inter-practice variation in crude prevalence of coronary heart disease

The graph below shows trends in the median practice crude prevalence rate of coronary heart disease over the last 10 years.



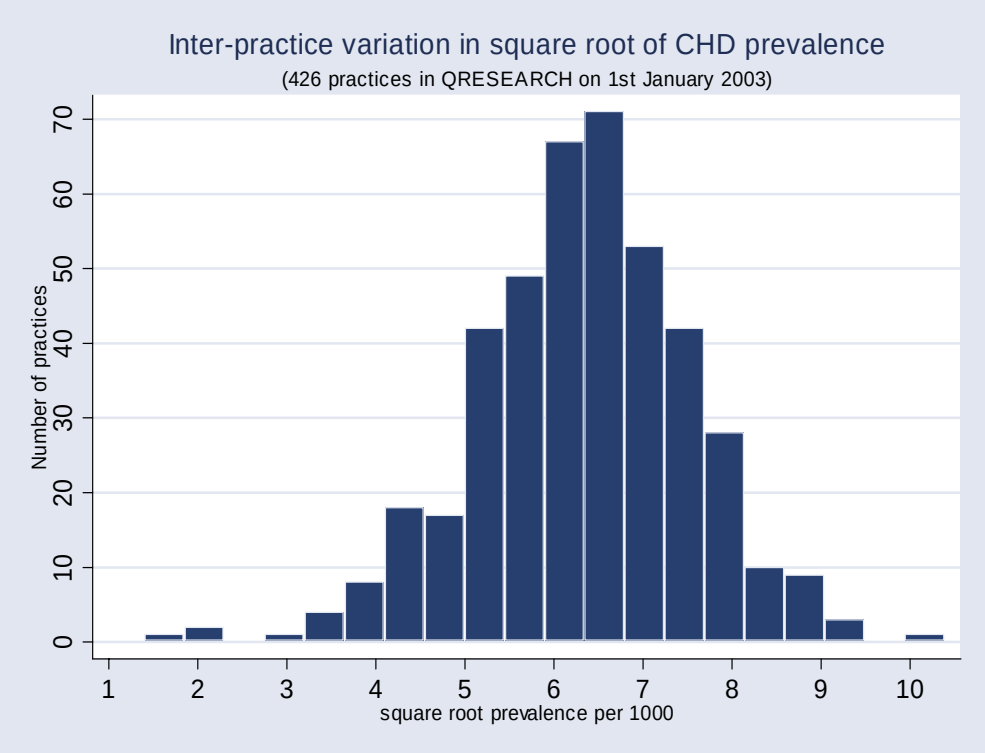
The next chart is a histogram showing the spread of crude prevalence rate of coronary heart disease in 426 practices in 2003. There is a large inter-practice variation in crude prevalence rates.

In 2003 the median rate across all the practices was 40.7 per 1,000 (inter-quartile range 31.1 to 50.7).



7.4 Square root of the median prevalence rate of coronary heart disease in 2003

The next chart shows the distribution of the crude prevalence rate of coronary heart disease after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



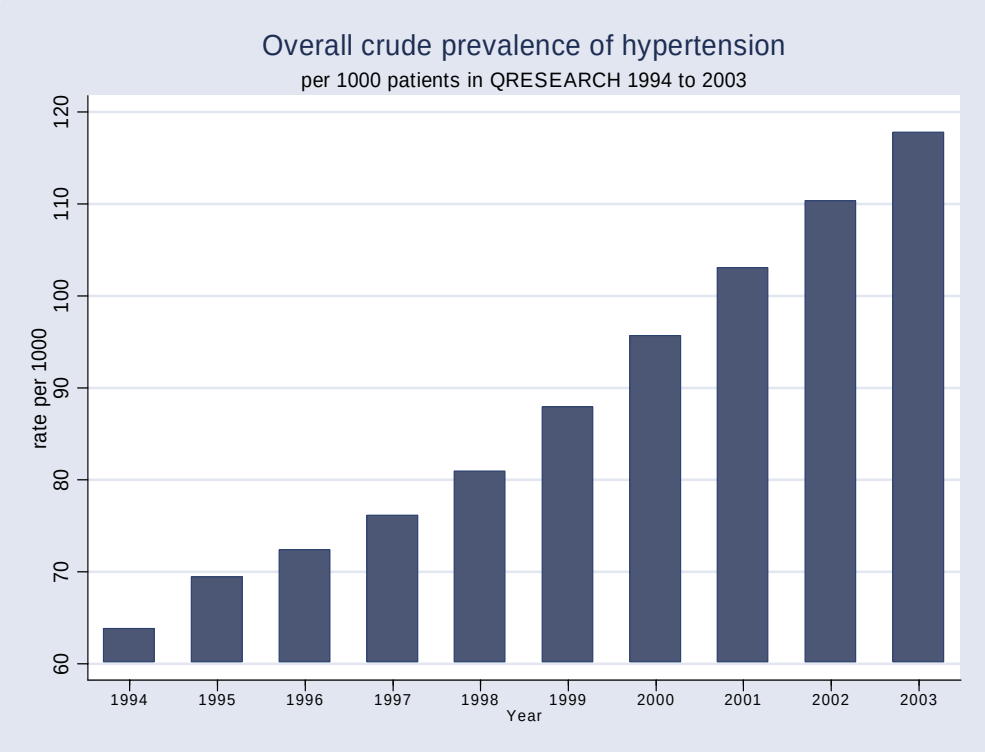
7.5 Trends in overall crude prevalence of hypertension

In 1994 there were just over 36,000 patients with a recorded diagnosis of hypertension from a population of 0.6 million patients giving an overall crude rate of 63.8 per 1,000 (95% CI 63.1 to 64.5).

In 2003, there were over 345,000 patients with hypertension from a population of 2.9 million patients giving a crude prevalence rate of 117.8 per 1,000 (95% CI 117.4 to 118.2).

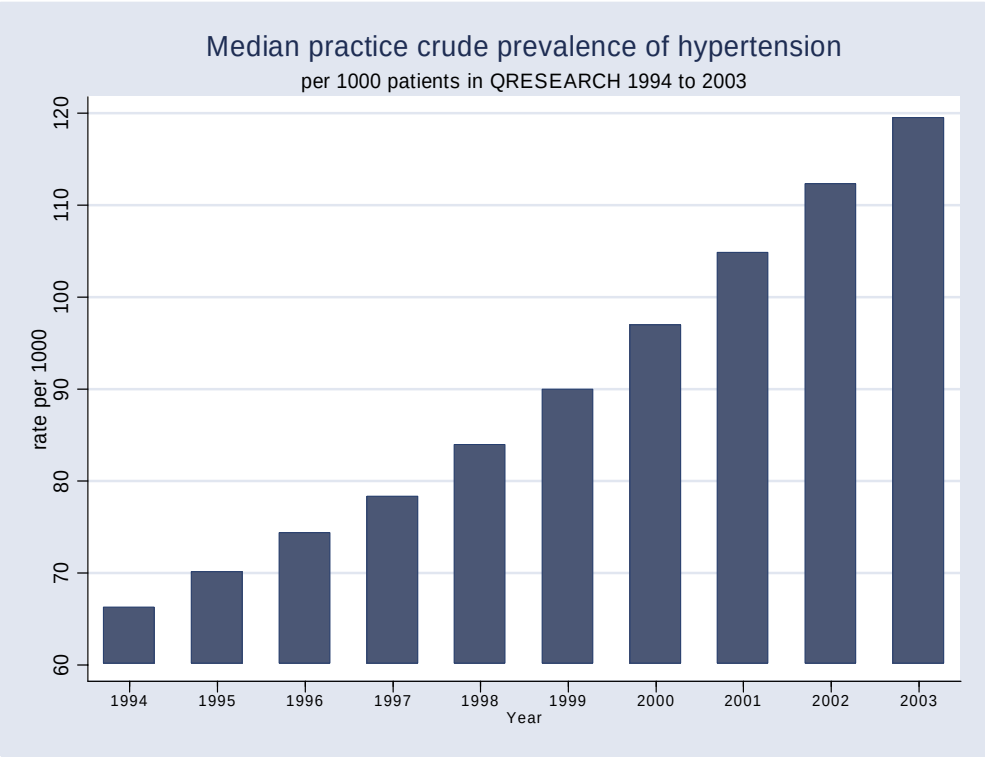
The full data are shown in table 2 (appendix, page 48).

The graph below shows trends in the overall crude prevalence rate of hypertension over the last 10 years. There has been a 1.9 fold increase in the crude prevalence of hypertension (i.e. a 90% increase) over the last ten years.



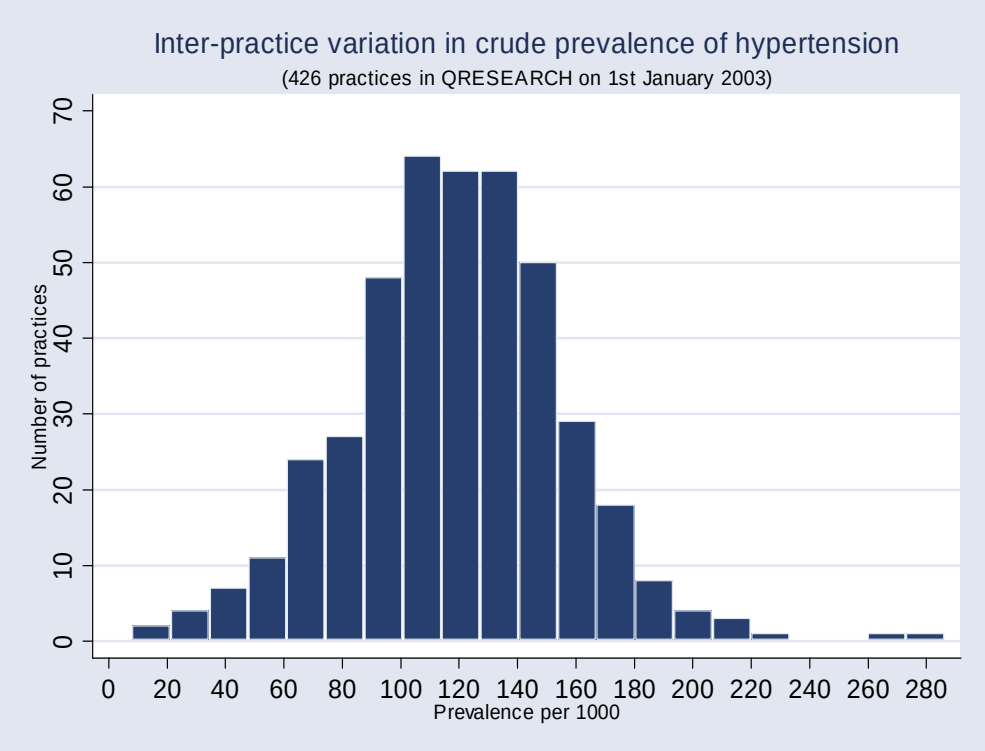
7.6 Trends in inter-practice variation in crude prevalence of hypertension

The graph below shows trends in the median practice crude prevalence rate of hypertension over the last 10 years.



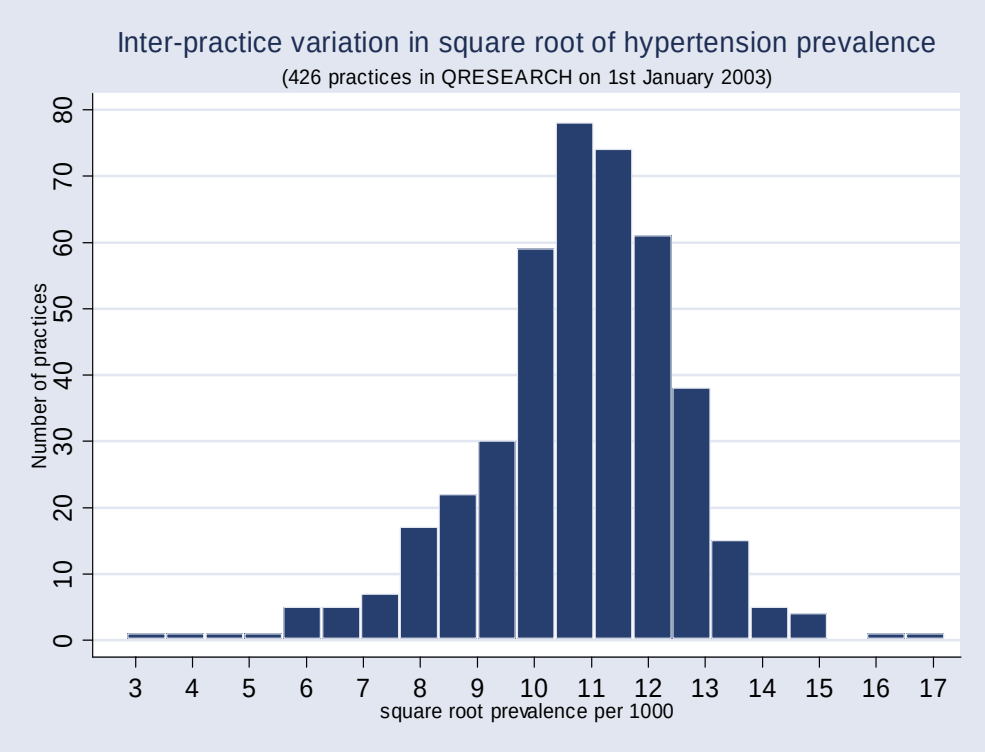
The next chart is a histogram showing the spread of crude prevalence rate of hypertension in 426 practices in 2003. There is a large inter-practice variation in crude prevalence rates.

In 2003 the median rate across all the practices was 119.5 per 1,000 (inter-quartile range 97.3 to 142.4).



7.7 Square root of the median prevalence rate of hypertension in 2003

The next chart shows the distribution of the crude prevalence rate of hypertension after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



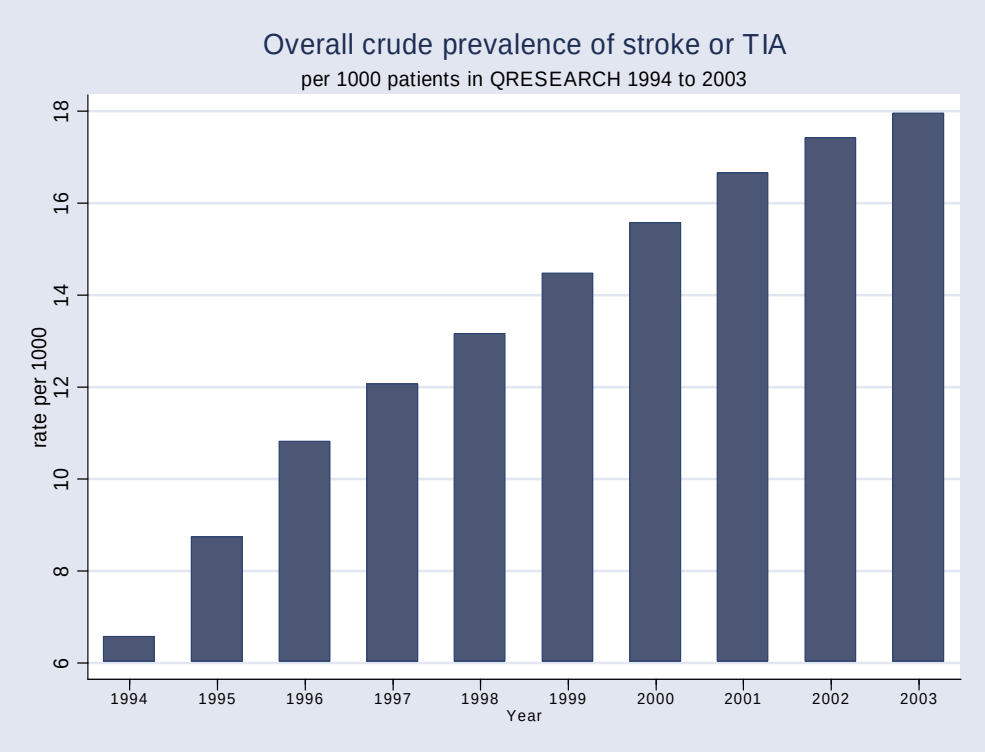
7.8 Trends in overall crude prevalence of stroke or TIA

In 1994 there were just under 4,000 patients with a recorded diagnosis of stroke or TIA from a population of 0.6 million patients giving an overall crude rate of 6.6 per 1,000 (95% CI 6.4 to 6.8).

In 2003, there were just under 52,671 patients with stroke or TIA from a population of 2.9 million patients giving a crude prevalence rate of 17.9 per 1,000 (95% CI 17.8 to 18.1).

The full data are shown in table 3 (appendix, page 49).

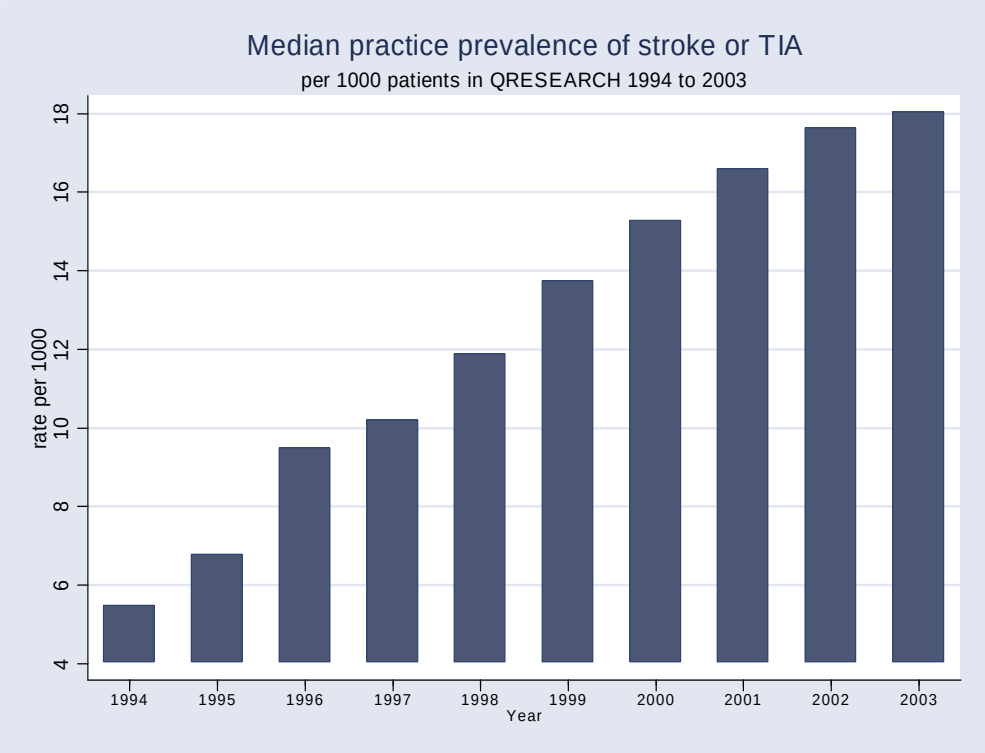
The graph below shows trends in the overall crude prevalence rate of stroke or TIA over the last 10 years.



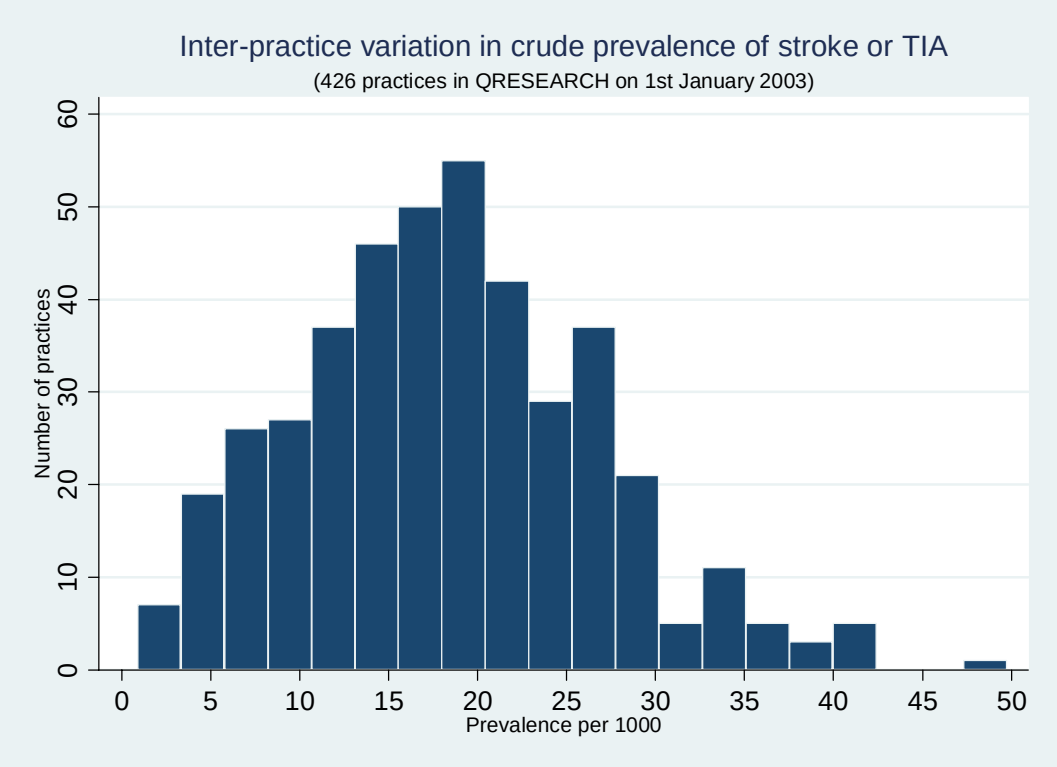
The prevalence rate of stroke and TIA in QRESEACH is substantially higher than the prevalence rate from 1998 from GPRD of 2.2 per 1,000 although the rates are not directly comparable as the GPRD definition did not include patients with a transient ischaemic attack.

7.9 Trends in inter-practice variation in crude prevalence of stroke or TIA

The graph below shows trends in the median practice crude prevalence rate of stroke or TIA over the last 10 years.



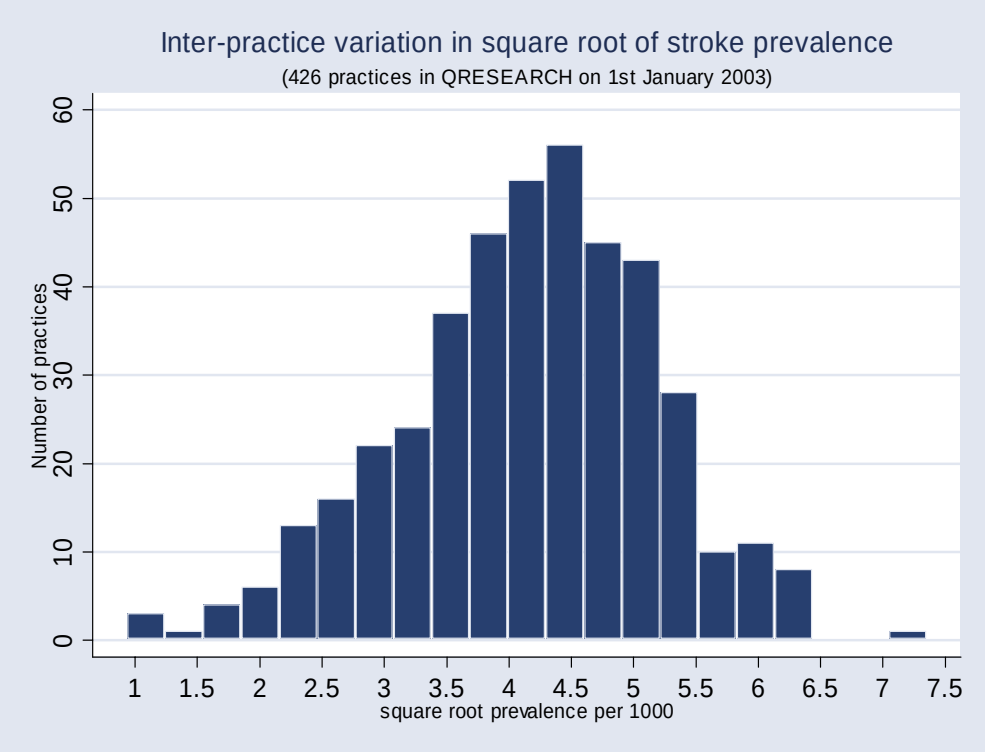
The next chart is a histogram showing the spread of crude prevalence rate of stroke or TIA in 426 practices in 2003. There is a large inter-practice variation in crude prevalence rates.



In 2003 the median rate across all the practices was 18.0 per 1,000 (inter-quartile range 12.5 to 23.5).

7.10 Square root of the median prevalence rate of stroke or TIA

The next chart shows the distribution of the crude prevalence rate of stroke or TIA after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



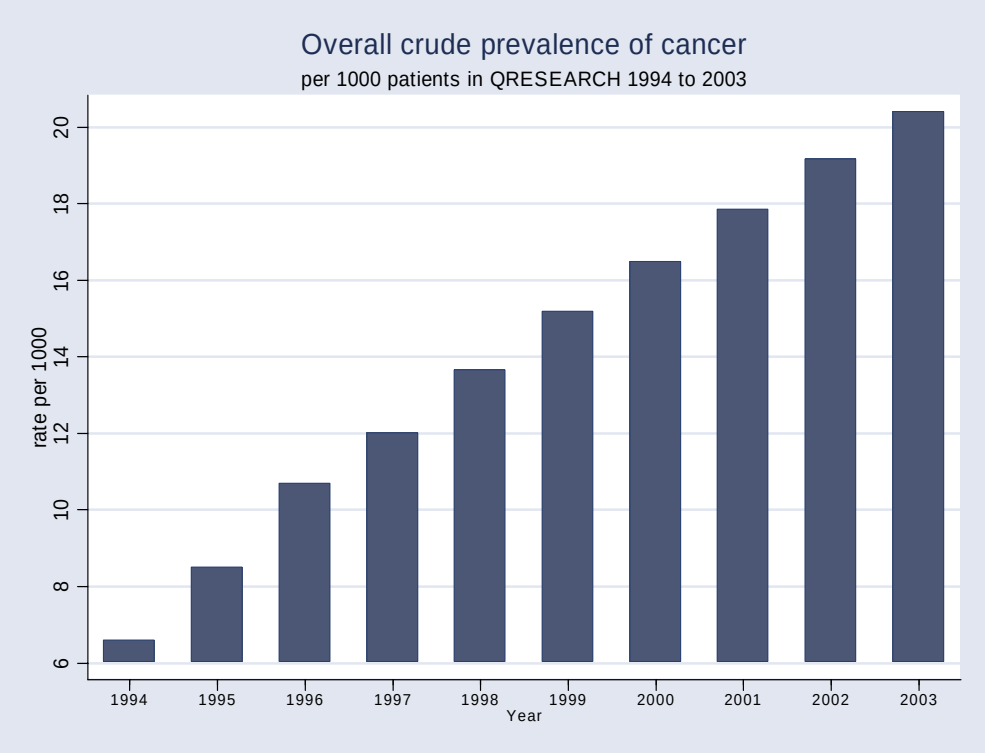
7.11 Trends in crude prevalence of cancer

In 1994 there were just under 4,000 patients with cancer from a population of 0.6 million patients giving an overall crude rate of 6.6 per 1,000 (95% CI 6.4 to 6.8).

In 2003, there were over 59,823 patients with cancer from a population of 2.9 million patients giving a crude prevalence rate of 20.4 per 1,000 (95% CI 20.2 to 20.6).

The full data are shown in table 4 (appendix, page 50).

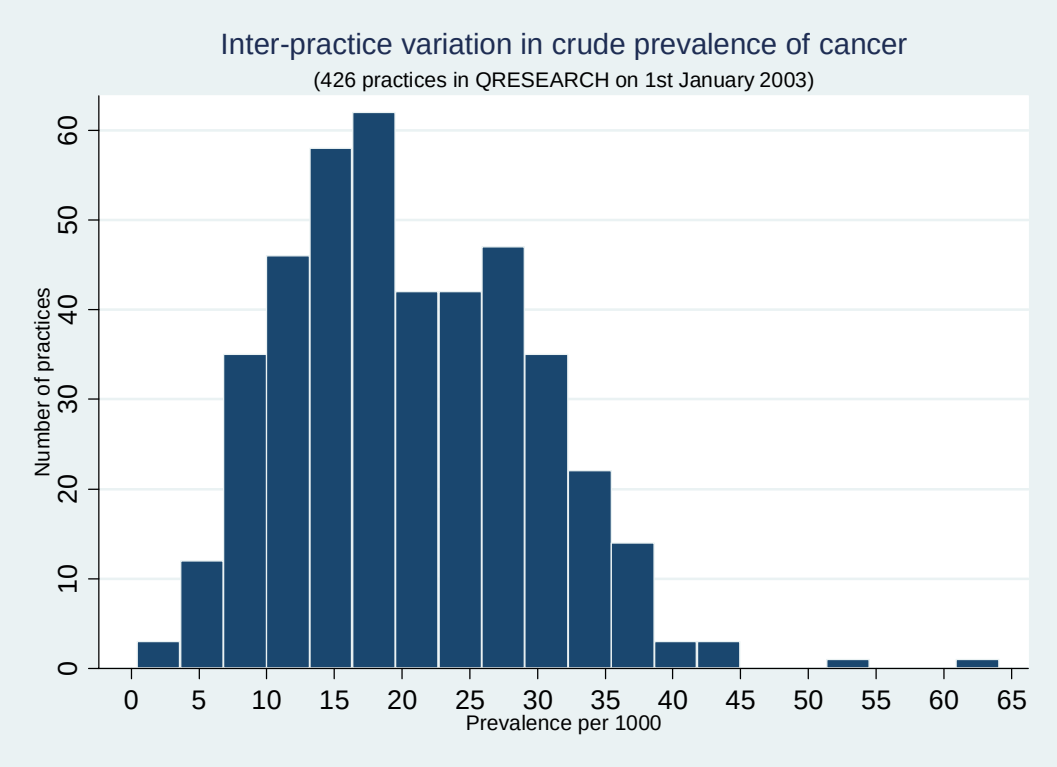
The graph below shows trends in the overall crude prevalence rate of cancer over the last 10 years.



7.12 Inter-practice variation in crude prevalence of cancer in 2003

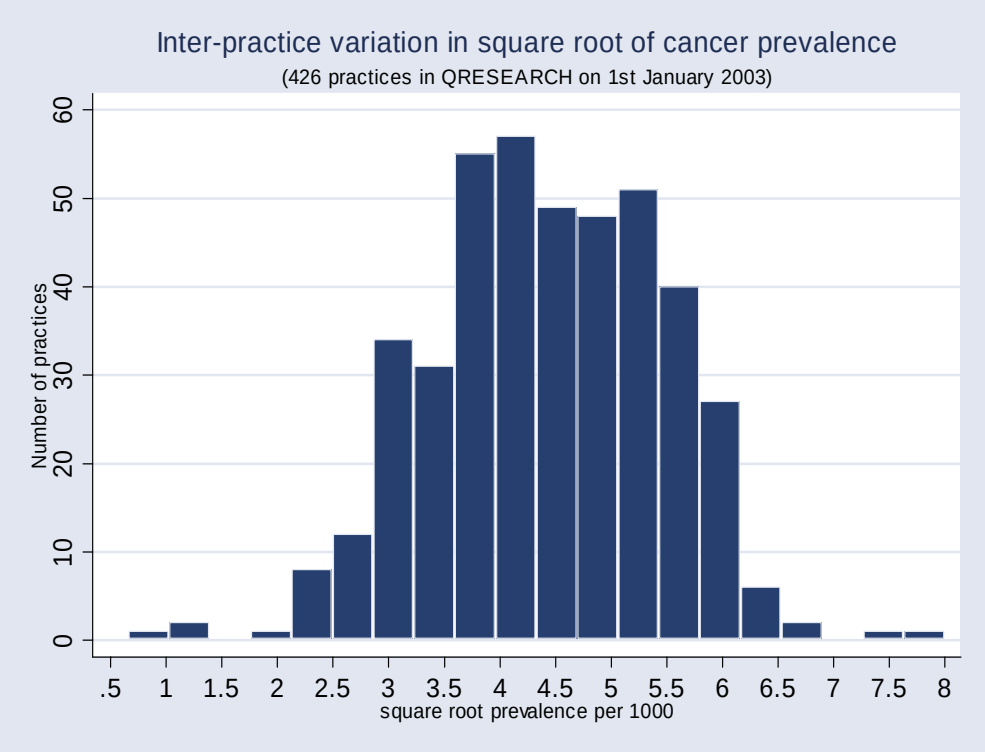
The next chart is a histogram showing the spread of crude prevalence rate of cancer in 426 practices in 2003. There is a large inter-practice variation in crude prevalence rates.

In 2003 the median rate across all the practices was 19.3 per 1,000 (inter-quartile range 13.9 to 27.4).



7.13 Square root of the median prevalence rate of cancer

The next chart shows the distribution of the crude prevalence rate of cancer after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



7.14 Trends in crude prevalence of diagnosed asthma

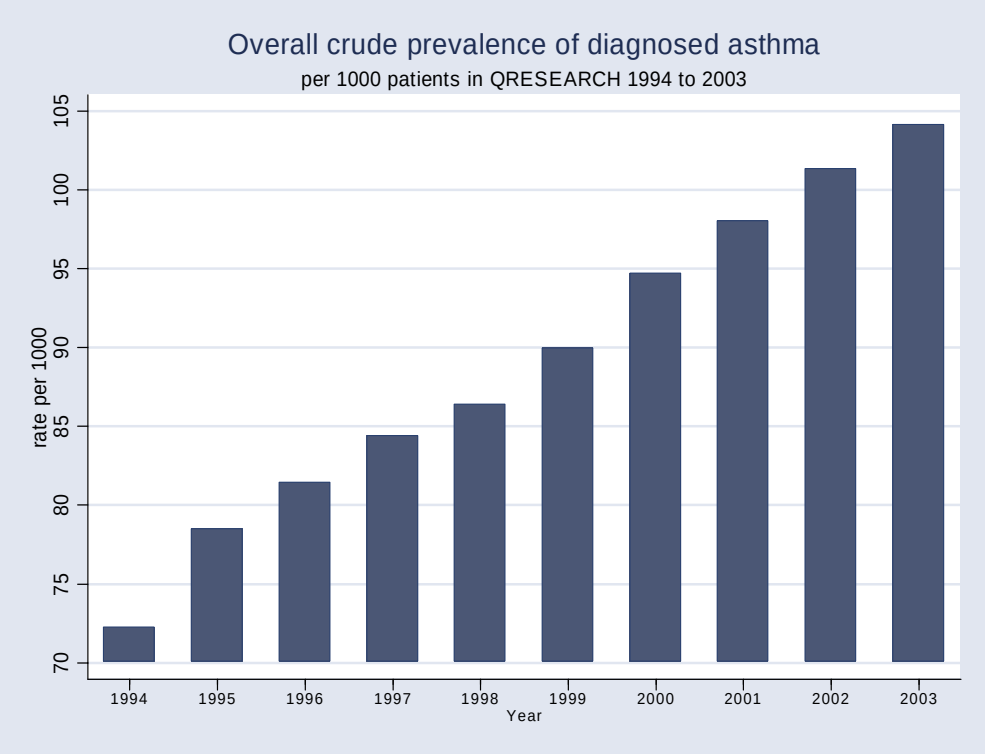
Prevalent cases were patients with a diagnosis of asthma. There is no requirement for patients to have prescribed medication to appear in this analysis although this is necessary for patients to qualify for inclusion in the nGMS contract for quality indicator measurement.

In 1994 there were just over 41,000 patients with a diagnosis of asthma from a population of 0.6 million patients giving an overall crude rate of 72.3 per 1,000 (95% CI 71.6 to 72.9).

In 2003, there were over 305,000 patients with a diagnosis of asthma from a population of 2.9 million patients giving a crude prevalence rate of 104.2 per 1,000 (95% CI 103.8 to 104.5).

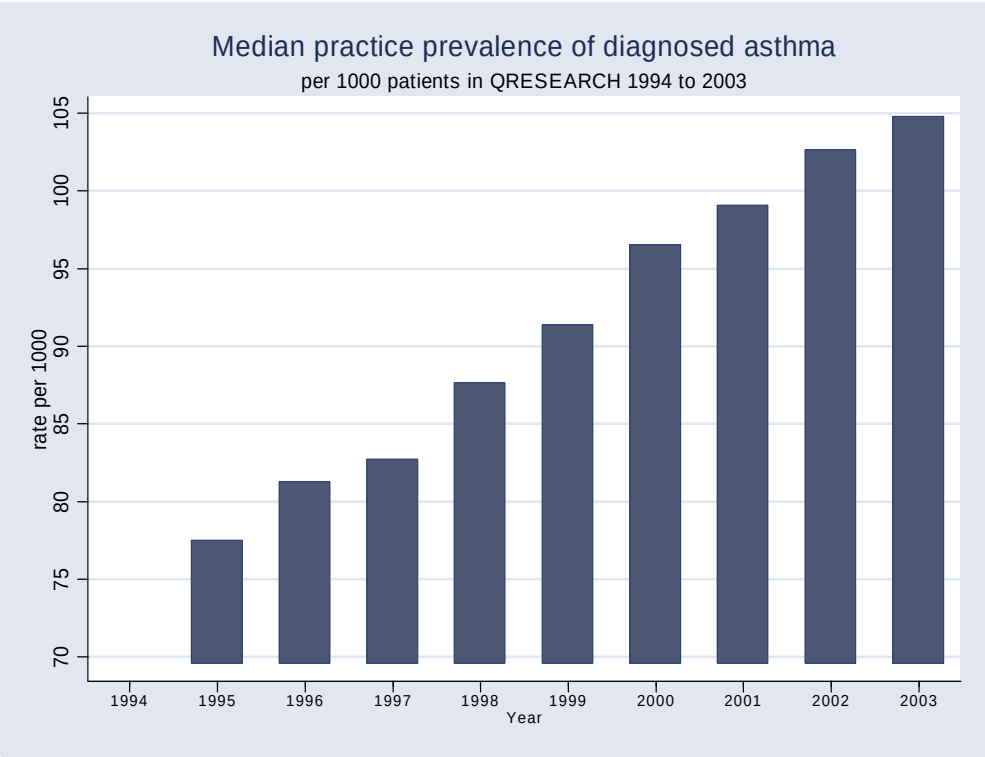
The graph below shows trends in the overall crude prevalence rate of asthma over the last 10 years.

The full data are shown in table 5 (appendix, page 51)

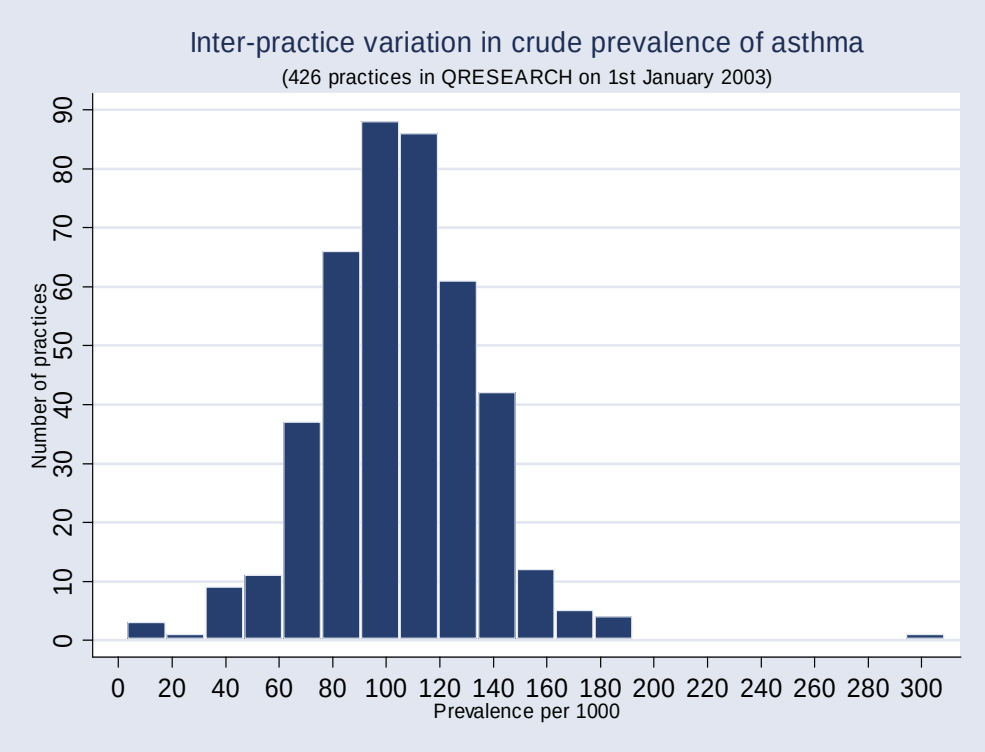


7.15 Inter-practice variation in crude prevalence of asthma

The graph below shows trends in the median practice crude prevalence rate of asthma over the last 10 years.



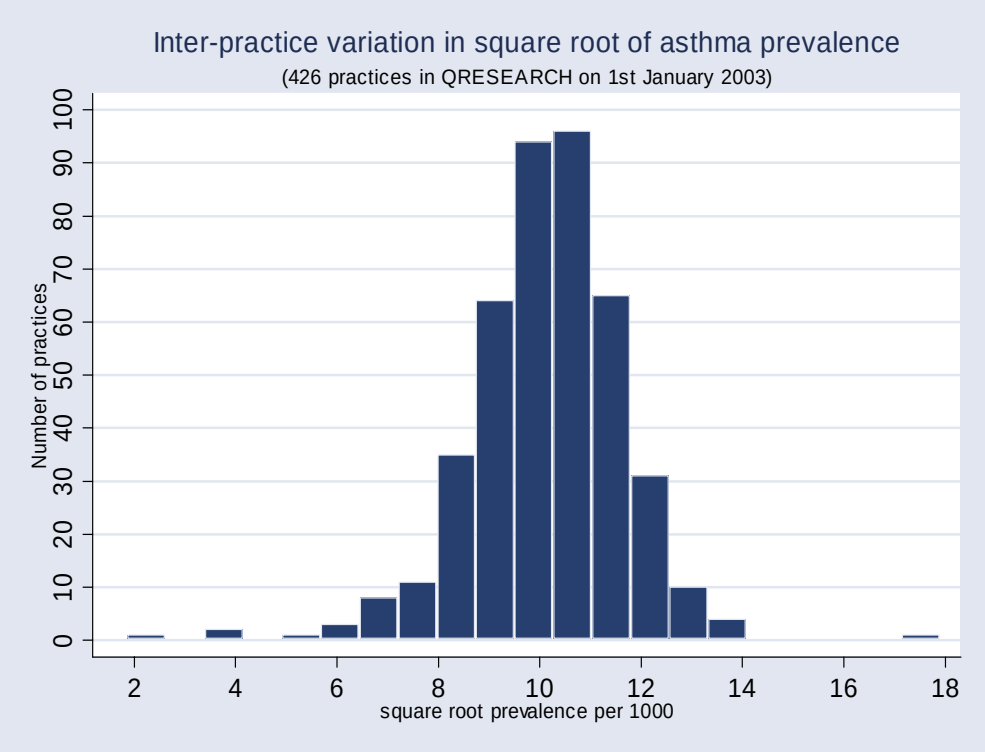
The next chart is a histogram showing the spread of crude prevalence rate of asthma in 426 practices in 2003. There is a small inter-practice variation in crude prevalence rates.



In 2003 the median rate across all the practices was 104.8 per 1,000 (inter-quartile range 86.8 to 123.0).

7.16 Square root of the median prevalence rate of asthma

The next chart shows the distribution of the crude prevalence rate of asthma after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



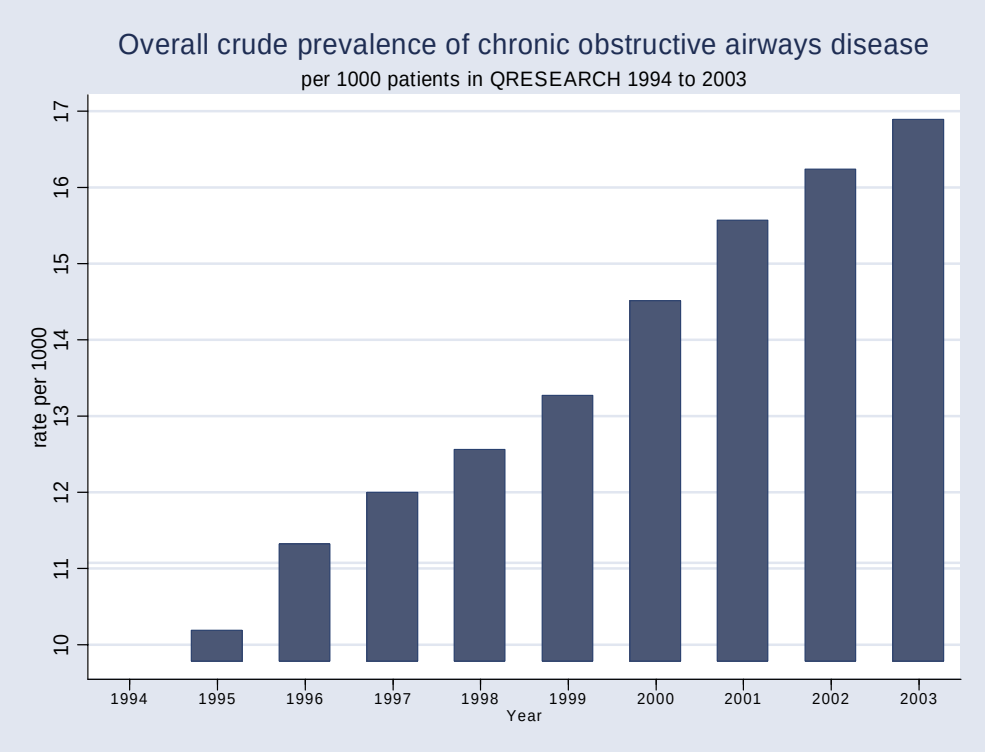
7.17 Trends in overall crude prevalence of chronic obstructive pulmonary disease

In 1994 there were just under 6,000 patients with chronic obstructive pulmonary disease from a population of 0.6 million patients giving an overall crude rate of 9.8 per 1,000 (95% CI 9.5 to 10.0).

In 2003, there were just under 50,000 patients with chronic obstructive pulmonary disease from a population of 2.9 million patients giving a crude prevalence rate of 16.9 per 1,000 (95% CI 16.7 to 17.0).

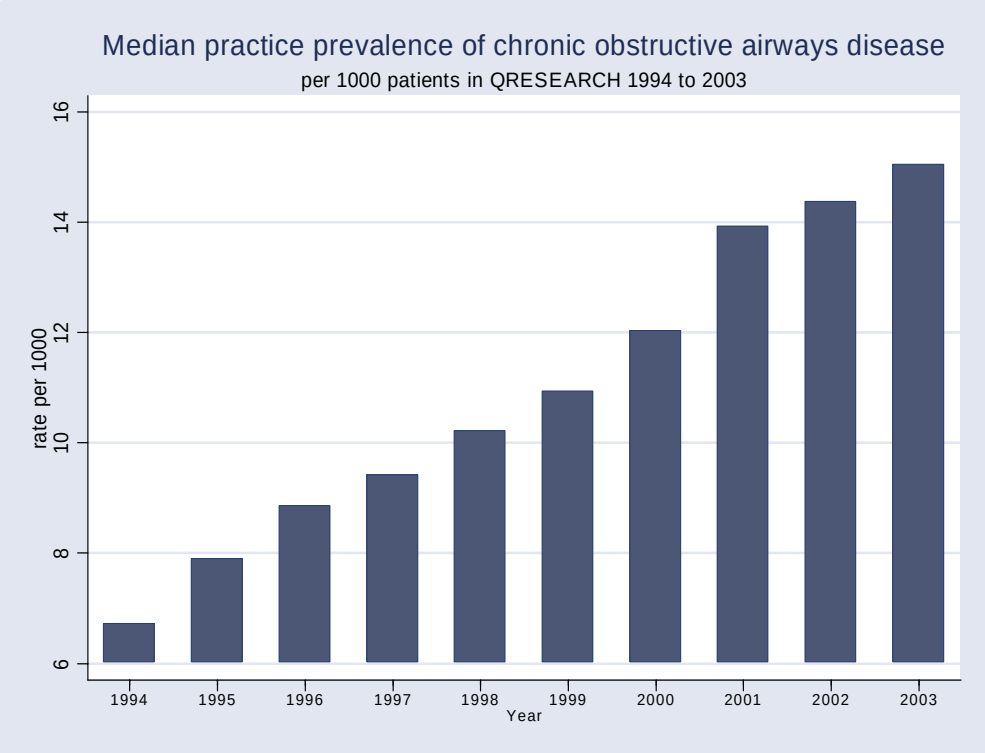
The full data are shown in table 6 (appendix, page 52).

The graph below shows trends in the overall crude prevalence rate of chronic obstructive pulmonary disease over the last 10 years.

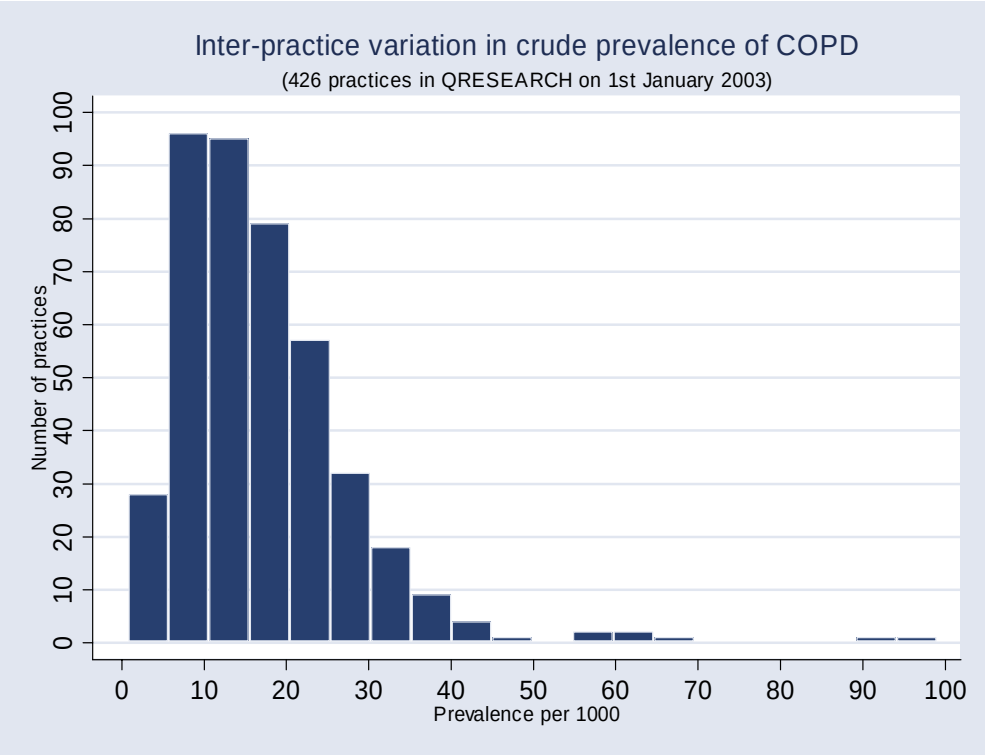


7.18 Inter-practice variation in crude prevalence of chronic obstructive pulmonary disease

The graph below shows trends in the median practice crude prevalence rate of chronic obstructive pulmonary disease over the last 10 years.



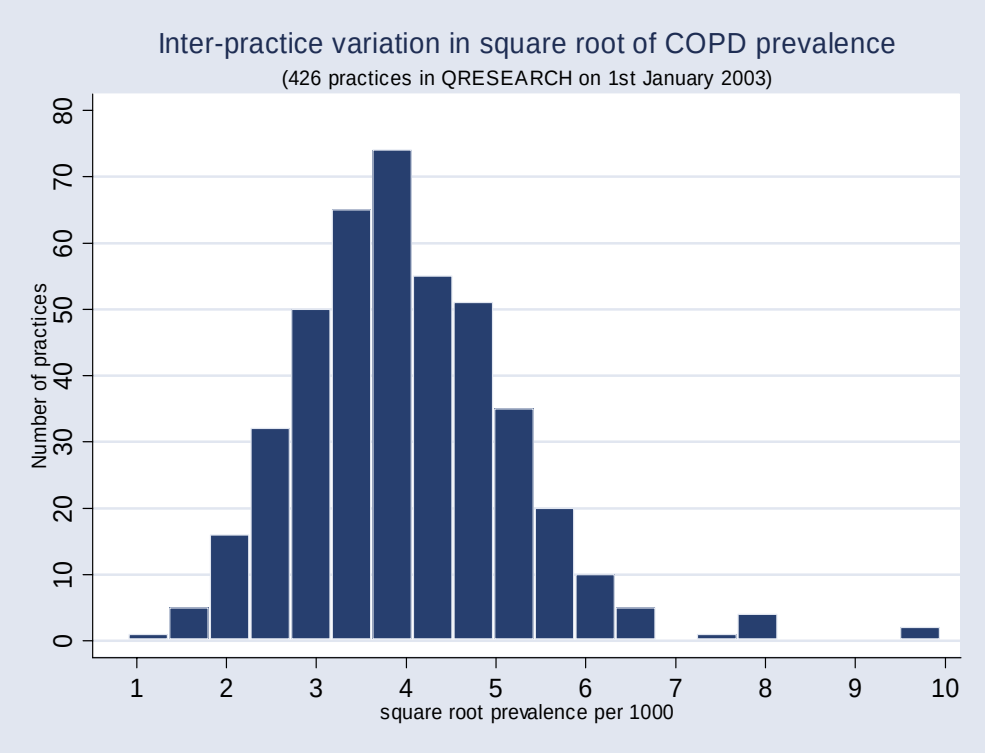
The next chart is a histogram showing the spread of crude prevalence rate of chronic obstructive pulmonary disease in 426 practices in 2003. There is a large inter-practice variation in crude prevalence rates.



In 2003 the median rate across all the practices was 15.0 per 1,000 (inter-quartile range 10.2 to 22.5).

7.19 Square root of the median prevalence rate of chronic obstructive pulmonary disease

The next chart shows the distribution of the crude prevalence rate of chronic obstructive pulmonary disease after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



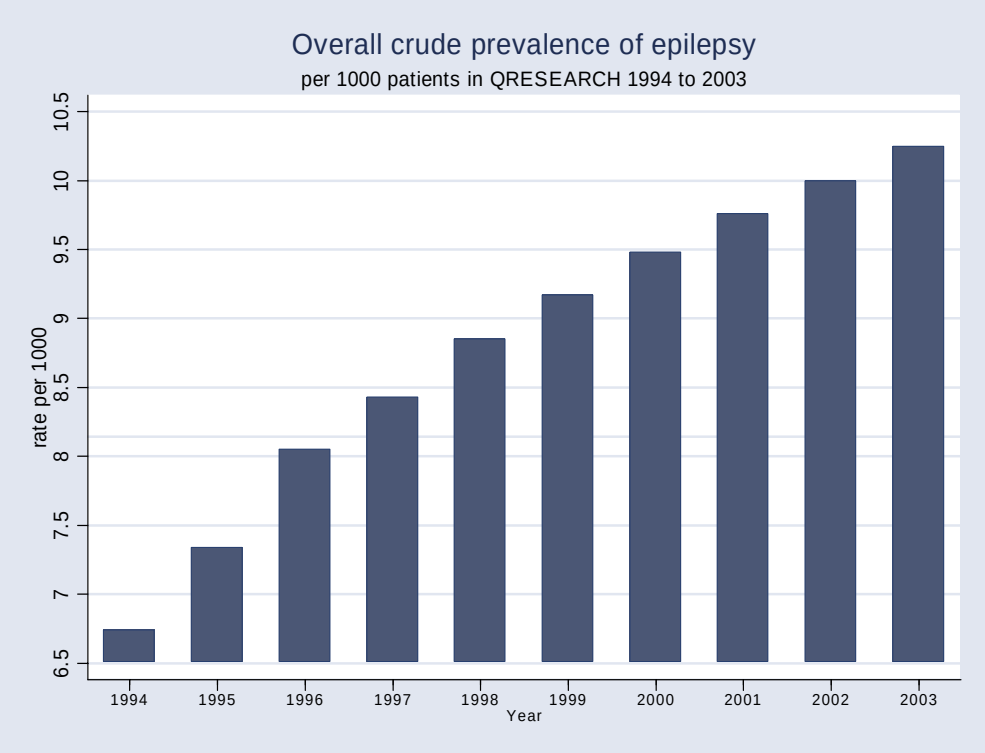
7.20 Trends in overall prevalence of epilepsy

In 1994 there were just under 4,000 patients with epilepsy from a population of 0.6 million patients giving an overall crude rate of 6.7 per 1,000 (95% CI 6.5 to 6.9).

In 2003, there were just over 30,000 patients with epilepsy from a population of 2.9 million patients giving a crude prevalence rate of 10.2 per 1,000 (95% CI 10.1 to 10.4).

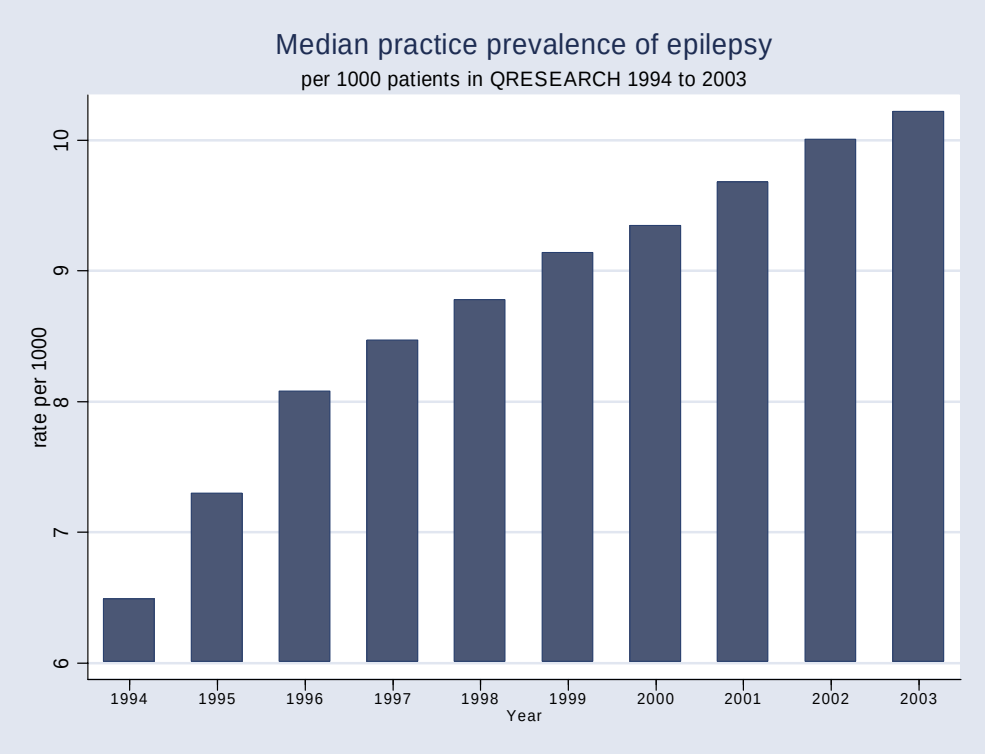
The full data are shown in table 7 (appendix, page 53).

The graph below shows trends in the overall crude prevalence rate of epilepsy over the last 10 years.



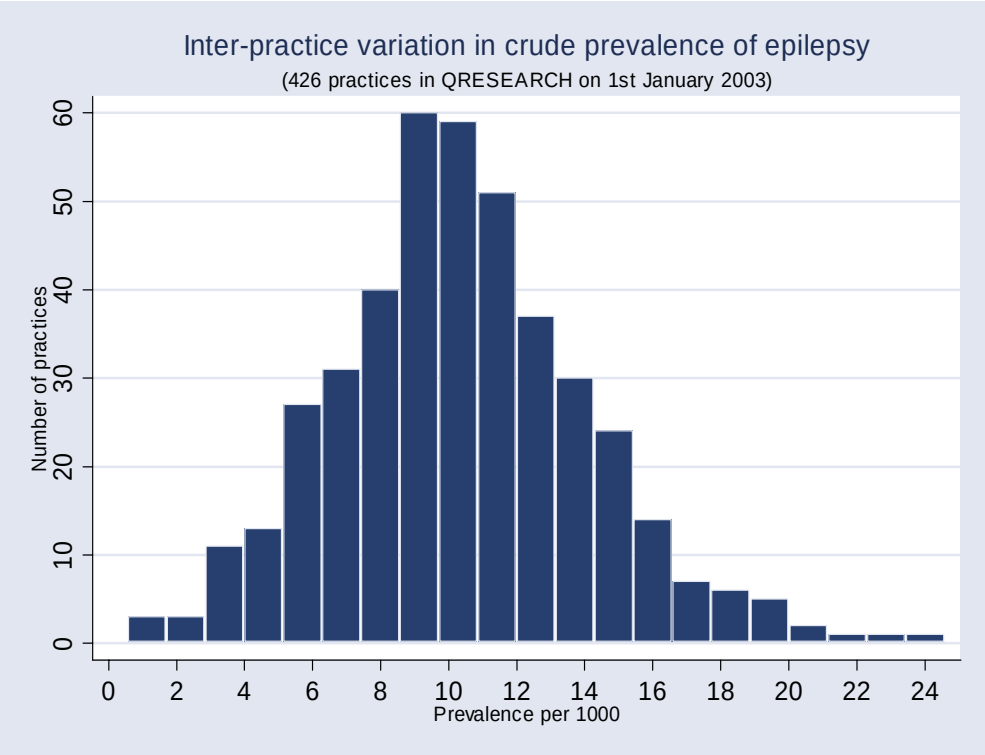
7.21 Trends in inter-practice variation in crude prevalence of epilepsy

The graph below shows trends in the median crude prevalence rate of epilepsy over the last 10 years.



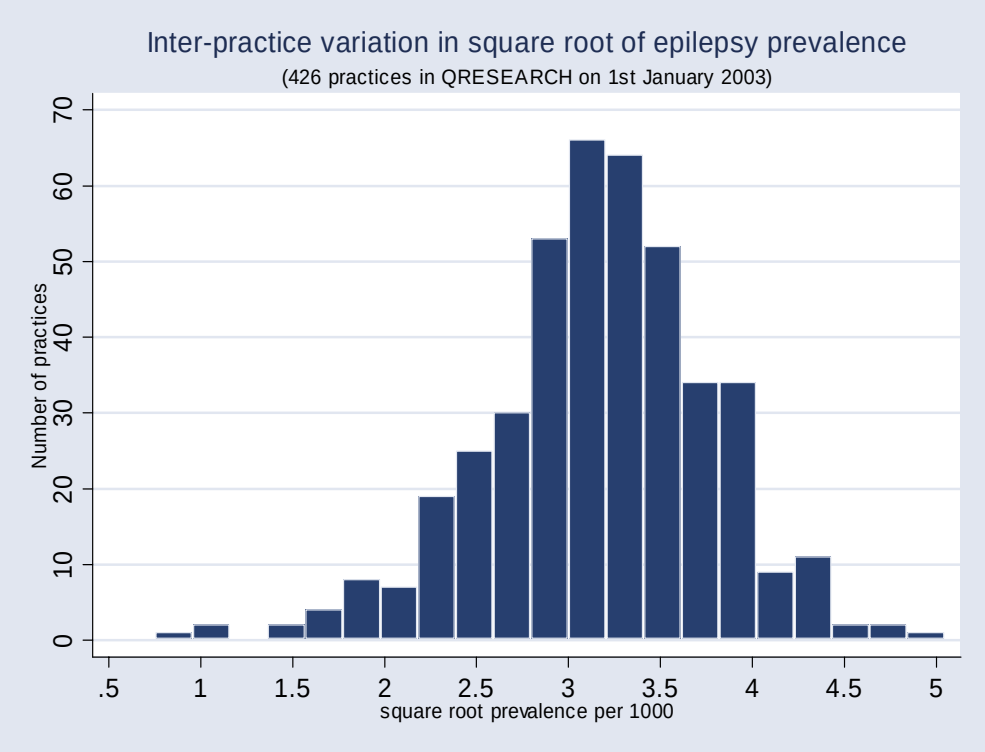
The next chart is a histogram showing the spread of crude prevalence rate of epilepsy in 426 practices in 2003. There is a large inter-practice variation in crude prevalence rates.

In 2003 the median rate across all the practices was 10.2 per 1,000 (inter-quartile range 7.9 to 12.7).



7.22 Square root of the median prevalence rate of epilepsy

The next chart shows the distribution of the crude prevalence rate of epilepsy after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



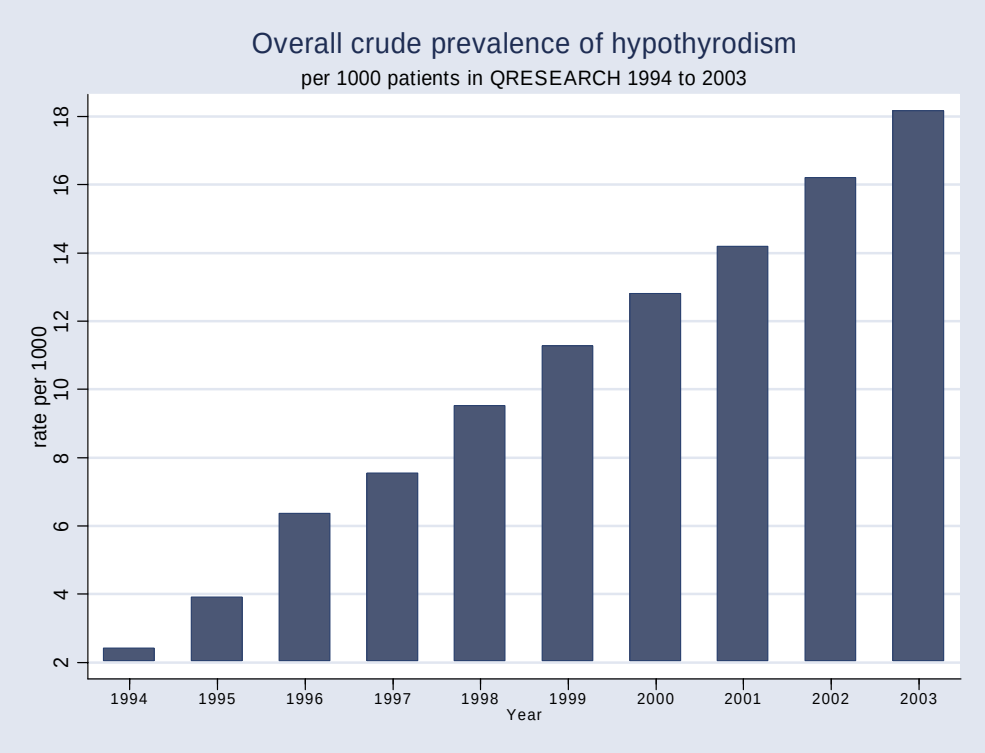
7.23 Trends in overall crude prevalence of hypothyroidism

In 1994 there were just over 1,000 patients with hypothyroidism from a population of 0.6 million patients giving an overall crude rate of 2.4 per 1,000 (95% CI 2.2 to 2.5).

In 2003, there were just over 53,000 patients with hypothyroidism from a population of 2.9 million patients giving a crude prevalence rate of 18.1 per 1,000 (95% CI 18.0 to 18.3).

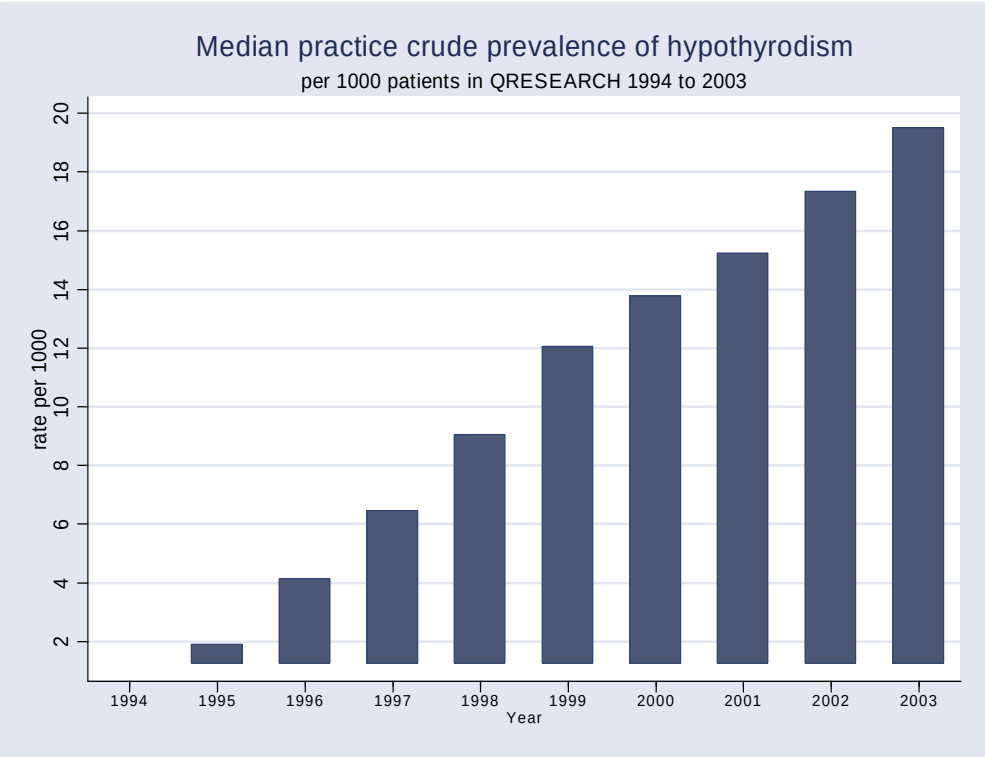
The full data are shown in table 8 (appendix, page 54).

The graph below shows trends in the overall crude prevalence rate over the last 10 years.



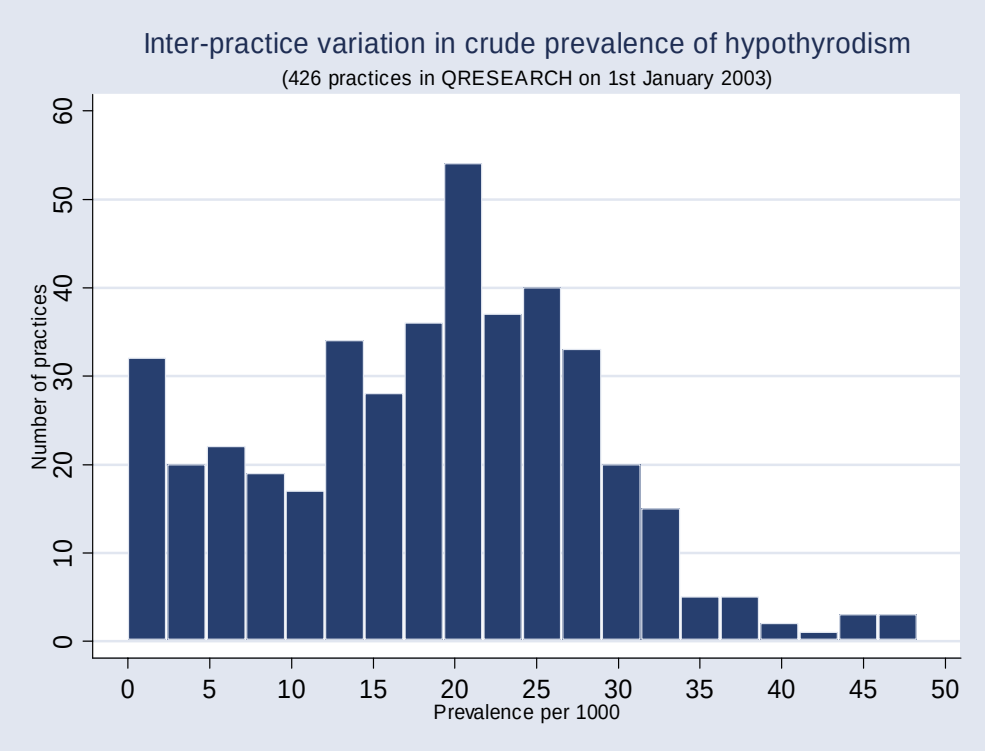
7.24 Inter-practice variation in crude prevalence of hypothyroidism

The graph below shows trends in the median crude prevalence rate of hypothyroidism over the last 10 years.



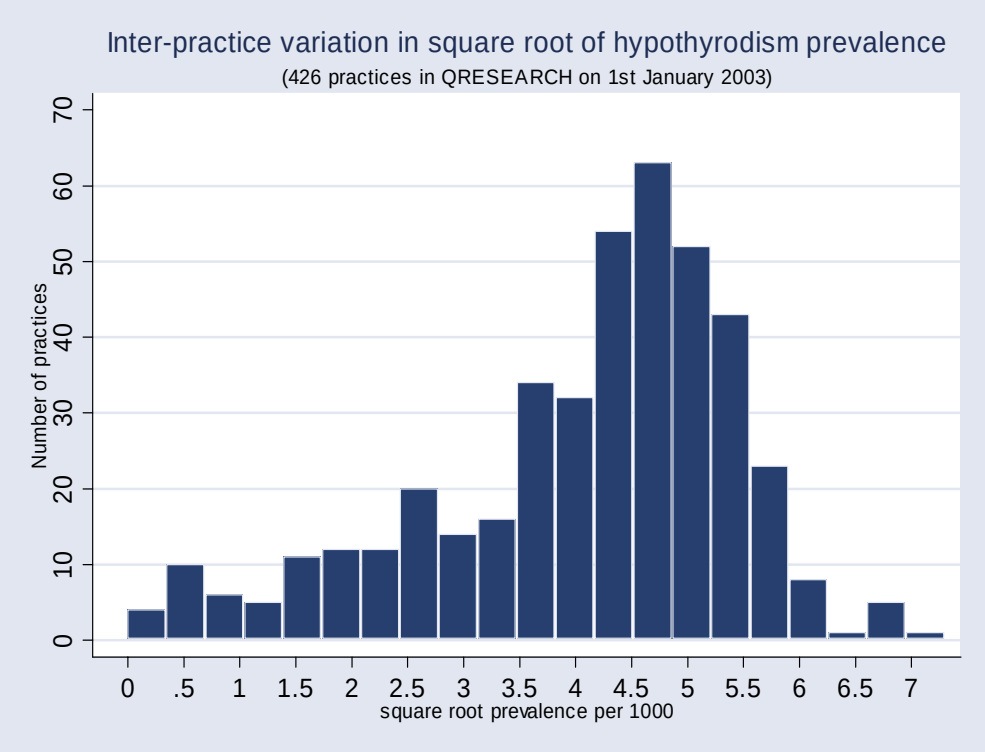
The next chart is a histogram showing the spread of crude prevalence rate of hypothyroidism in 426 practices in 2003. There is a large inter-practice variation in crude prevalence rates.

In 2003 the median rate across all the practices was 19.5 per 1,000 (inter-quartile range 11.6 to 25.0).



7.25 Square root of the median prevalence rate of hypothyroidism

The next chart shows the distribution of the crude prevalence rate of y after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



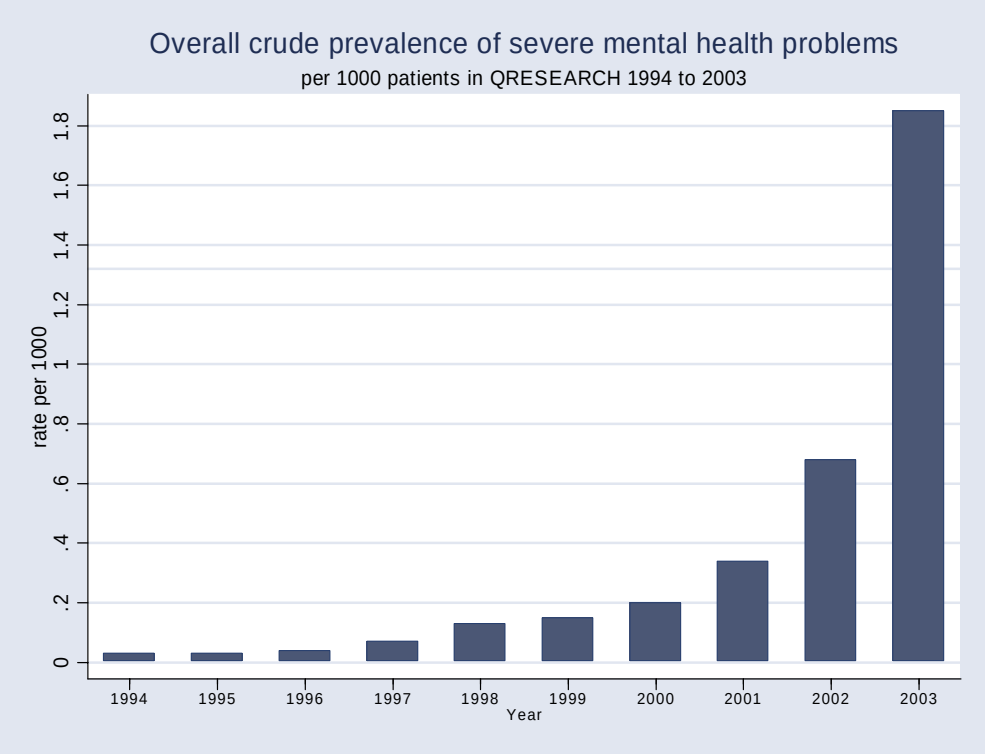
7.26 Trends in crude prevalence of severe mental health problems

In 1994 there were just 17 patients with the very specific nGMS Read codes for severe mental health problems from a population of 0.6 million patients giving an unrecordably low prevalence rate.

By 2003, there were over 5,000 patients with severe mental health problems from a population of 2.9 million patients giving a crude prevalence rate of 1.8 per 1,000 (95% CI 1.8 to 1.8).

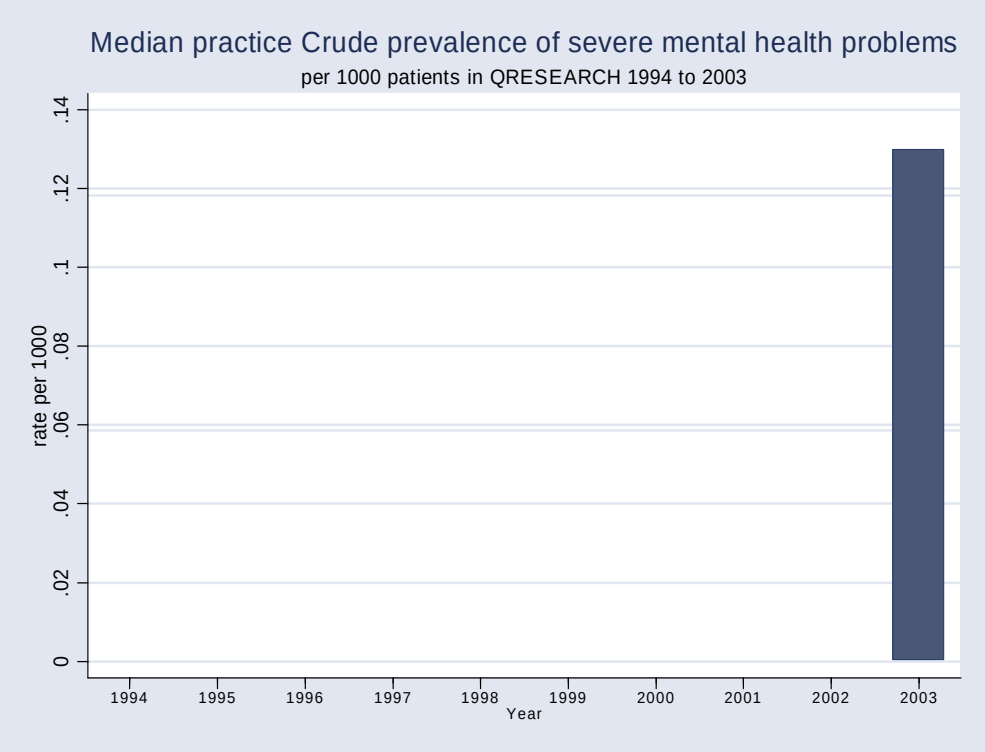
The full data are shown in table 9 (appendix, 55).

The graph below shows trends in the overall crude prevalence rate of severe mental health problems over the last 10 years. This bizarre shape suggesting a very rapid rise is almost certainly due to the requirement to use different new Read codes for mental health problems than the more conventional codes which have been in routine use.



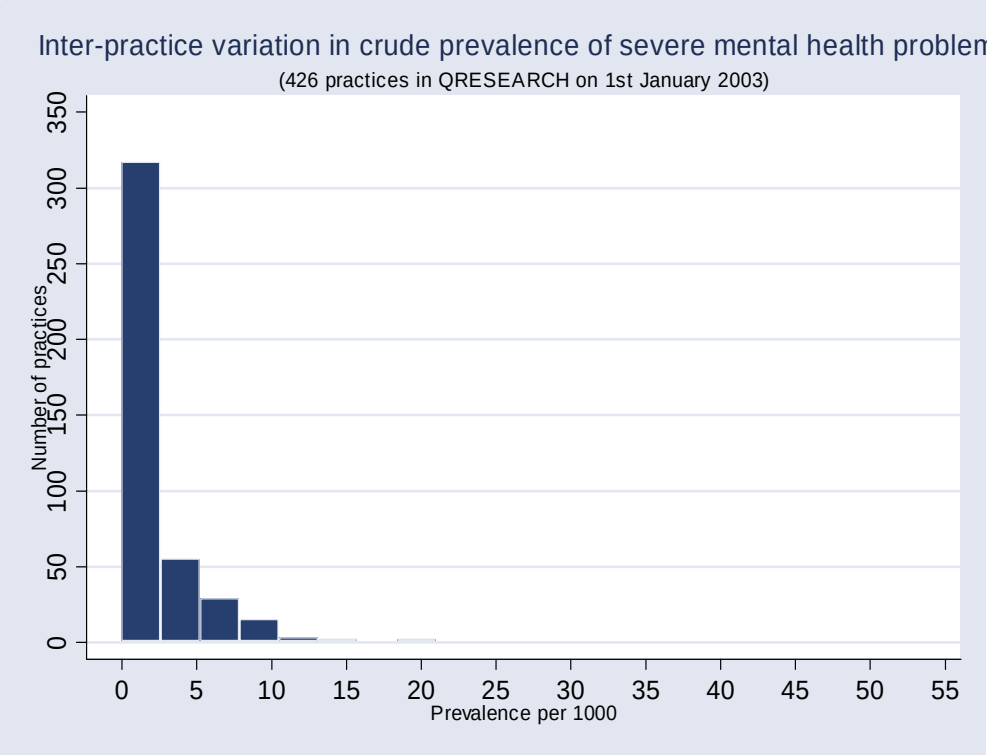
7.27 Inter-practice variation in crude prevalence of severe mental health in 2003

The graph below shows trends in the median practice crude prevalence rate of severe mental health problems over the last 10 years. It looks very odd since the codes for mental health were not used until very recently so many practices had no patients with these codes at all.



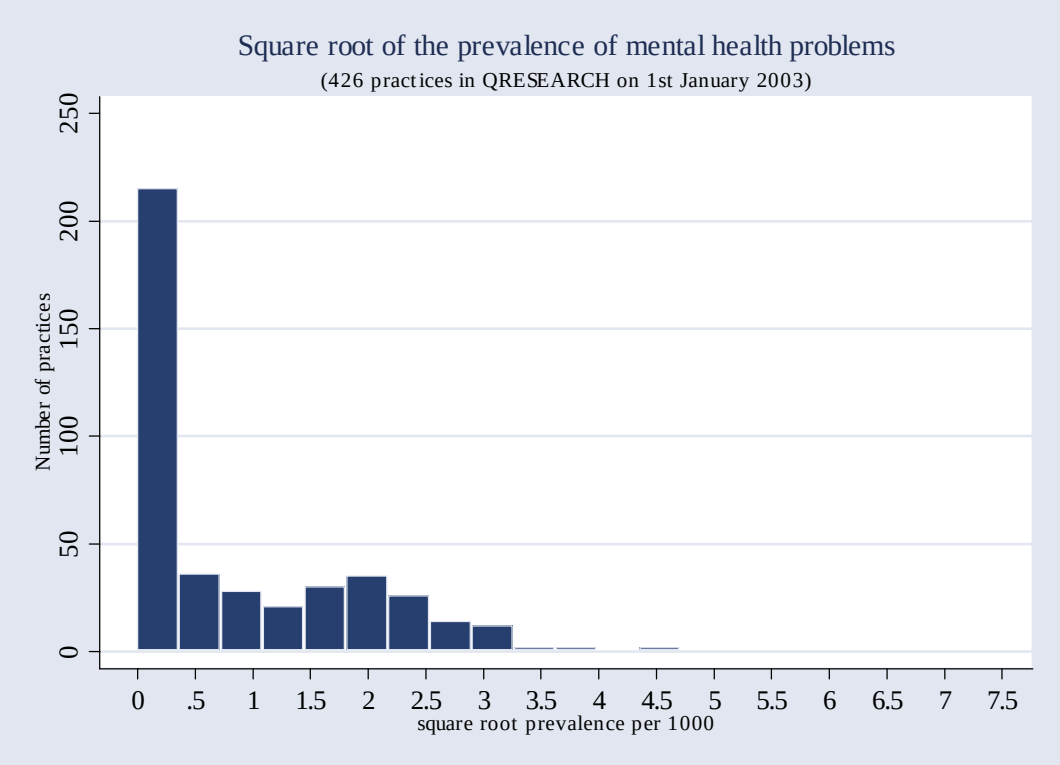
The next chart is a histogram showing the spread of crude prevalence rate of severe mental health problems in 426 practices in 2003. There is a large inter-practice variation in crude prevalence rates.

In 2003 the median rate across all the practices was 1.75 per 1,000 (interquartile range 0 to 2.6). This is almost certainly going to rise over the next few years. The ONS Psychiatric Morbidity Survey (2000) reported an annual prevalence of 5 patients per 1,000 with a psychotic illness.



7.28 Square root of the median prevalence rate of severe mental health problems

The next chart shows the distribution of the crude prevalence rate of severe mental health problems after the data have been transformed by taking the square root. This transformation will be done as part of the GMS calculations but it is important to note that we have not up-rated the rates for the lowest 5% of practices as will be done in the ADPF calculations.



8 DISCUSSION

This report has presented 10 year trends of the recorded prevalence of diseases contained within the new GMS contract. It has also presented trends in the median prevalence rate across all the practices for each year as well as measures of the spread of variation observed between practices.

This is the very first time these data have been reported and the information contained within this report represented a very substantial body of work. We think the epidemiology of each disease (including incidence and mortality) really deserves further investigation in its own right including detailed comparisons with published data.

There are some important factors to consider when interpreting these data as discussed below:

8.1 Deprivation

There are other issues which are outside the scope of this report but which should be considered in due course. This report has not considered how deprivation affected the prevalence of each disease – this is something which would be entirely possible to analyse using QRESEARCH and we would strongly recommend that analyses of this sort are considered.

8.2 Regional variations

This report has not considered geographical variations. QRESEARCH is able to report variations in prevalence of disease by government office region or by Strategic Health Authority.

8.3 Case definition used

It should be noted that the definitions presented here are largely but not entirely consistent with nGMS. We have used the same diagnostic codes as specified in the nGMS queries but have not applied the age or other restrictions.

For example, the nGMS definition for cancer only includes patients diagnosed after April 2003 – this is clearly not a practical definition for an analysis of trends over the past ten years. Therefore, in this report we have included all prevalent cases of cancer in each of the analysis years. Whilst this is probably an over-estimate for the first year of the contract, it should be a reasonable estimate of the expected number of patients likely to fall within the cancer review targets as the years advance.

Similarly, the analysis of epilepsy includes all patients with a Read code for epilepsy regardless of their age or use of prescribed medication whereas in the nGMS contract the population of interest is patients aged over 16 years and on anticonvulsant treatment in the last 15 month.

8.4 Comparison with other data

Table 10 in the appendix (page 56) shows the comparison between the QRESEARCH national database, the QRSEARCH pilot database (as presented in DoH Report 1, 2003), Key Health Statistics (General Practice Research Database, 1998) and data from 28 practices in Northern Ireland.

Although the prevalence rates found in the QRESEARCH national database are very similar to the QRESEARCH pilot database (which was just 10% of the size of the full database) and reasonably similar to the data from Northern Ireland, the prevalence rates of most diseases (coronary heart disease, diabetes, hypertension, epilepsy, asthma, chronic obstructive airways disease and hypothyroidism) are substantially higher that those derived from the General Practice Research Database. There are a number of possible explanations:

- The case definitions are not directly comparable with those used in the GPRD analysis– many of the GPRD definitions also included use of prescribed medication in the preceding year whereas the data from QRESEARCH considered in this report are based on recorded diagnoses without age or treatment restrictions. The more restrictive GPRD definition would tend to under-estimate the true prevalence rate and this may be one reason why the QRESEARCH rates tend to be higher than the corresponding GPRD rates.

- QRESEARCH rates are current for 2003 and where as GPRD rates were based historical data from 1994 to 1998. Over the last 5-10 years, there may have been genuine increases in the prevalence of disease, improved disease recognition or improved quality of clinical computer recording.

- The QRESEARCH population may be atypical in its prevalence rates. We believe that this is not likely to be a significant factor since the population in a similar mix of research practices in Trent was representative for age distribution, gender and deprivation. Also previous reports to the DoH have shown comparable figures to other data sources for a whole range of measures.

- These practices may be atypical in the populations they attract to registration. We do know that these practices are larger, less likely to be single-handed, more likely to be a teaching practice and more likely to have a female partner than the overall practices in Trent and nationally. However, we do not believe that patients with major

diagnoses differentially register with practices with these characteristics, so again we believe that this explanation is unlikely.

The prevalence of mental health is a special case since the new Read codes specified in nGMS are not the ones which have been in regular use in general practice and hence the prevalence rates are probably still unstable as discussed above. The prevalence rate in QRESARCH is lower than that reported in General Practice Research Database but the latter used a very much wider range of codes than the nGMS definition making the comparison less helpful.

8.5 Inter-practice variation

The inter-practice variations found in this database confirm the distributions found by others, for example PRIMIS. Some of this variation will be due to the same factors outlines for the overall picture. Some practices will have a genuinely different disease prevalence derived from differences in population characteristics such as age-gender and deprivation. For other practices, the differences in prevalence reflect differences in disease recognition or computer recording. Certainly some differences derive from the use of Read codes outside those specified in the New GMS Contract dataset (which we have used in this work). For good financial reasons, it is expected that practices will migrate to the specified codes in the next few months (and they will put effort into case finding), with a consequent fall in inter-practice variation.

9.6 Trends in prevalence over 10 years

With the exception of severe mental illness, all these conditions show a similar pattern of consistent annual increase in prevalence year on year. The age standardised rates for each year for each disease are shown in the tables in the appendix and these also show a year on year rise in prevalence which implies that the main effect is not simply due to the ageing population. There are several explanations for this:

- There is a true increase in prevalence for these diseases over the country. There are good reasons for expecting a rising prevalence as survival improves, but this is less likely to explain the increase in, say, myxoedema.

- There is improved case finding. Again this may explain some conditions but not all.

- The completeness of data recording is improving. This is certainly likely to be a key factor, with the numbers of outlier practices (especially those with abnormally low prevalence rates) declining with time.

We believe that all these factors contribute to the apparent and real increase in prevalence with time.

9 APPENDIX 1

Disease	included codes	time criteria used in the report	Difference from nGMS target
Coronary Heart Disease	G3 to G3401; G342-G366; G38 to G3z	Ever before reference date	None
Stroke and TIA	G61% (excluding 617); G63y0-G63y1; G64%; G66%; G6760; G6W; G6X; G65-G654; G65y-G65zz	Ever before reference date	None
Established hypertension	G2; G20%; G24-G2z	Ever before reference date	None
Chronic Obstructive Pulmonary Disease	H3; H31% (excluding H3101, H31y0), H32%, H36-H3z	Ever before reference date	None
Epilepsy	F25-F2515; F251y-F25z; F1321; SC200	Ever before reference date	Only patients >16 years and on treatment in last 6/12 included in nGMS
Hypothyrodism	C03%; C04%	Ever before reference date	Only patients on drug treatment included in nGMS
Cancer	B0-B32z; B34-B6z0; Byu-Byu41; Byu5-ByuE0	Ever before reference date	Only patients diagnosed after 01/04/03 included in nGMS
Mental Health Problems	9H6, 9H8 (excluding 9H7)	Ever before reference date	None
Asthma	H33%	Ever before reference date	Asthma treatment also required in last 12/12 in nGMS

10 APPENDIX 2

Table 1: Prevalence of coronary heart disease per 1,000 patients in QRESEARCH 1994-2003

year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	17,584	30.8	30.3	31.2	27.9	30.6	23.8	38.9
1995	106	768,102	24,813	32.3	31.9	32.7	29.1	31.9	22.3	40.7
1996	154	1,066,011	36,075	33.8	33.5	34.1	30.3	33.8	24.9	41.7
1997	183	1,268,780	43,548	34.3	34.0	34.6	31.1	33.7	23.7	42.4
1998	225	1,570,367	55,149	35.1	34.8	35.4	31.7	34.6	25.9	43.5
1999	274	1,918,571	70,337	36.7	36.4	36.9	32.7	36.4	27.3	44.5
2000	309	2,164,407	82,807	38.3	38.0	38.5	34.1	37.9	29.6	46.9
2001	336	2,360,984	92,716	39.3	39.0	39.5	35.1	40.0	30.3	48.6
2002	401	2,781,948	111,340	40.0	39.8	40.3	35.9	40.3	30.7	50.4
2003	426	2,932,780	118,980	40.6	40.3	40.8	36.4	40.7	31.1	50.7

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 2: Prevalence of hypertension per 1,000 patients in QRESEARCH 1994-2003

year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	36,446	63.8	63.1	64.5	59.1	66.3	47.7	78.8
1995	106	768,102	53,353	69.5	68.9	70.0	63.9	70.1	54.4	87.4
1996	154	1,066,011	77,132	72.4	71.8	72.9	66.3	74.3	55.0	90.1
1997	183	1,268,780	96,600	76.1	75.7	76.6	70.2	78.3	57.1	94.8
1998	225	1,570,367	127,094	80.9	80.5	81.4	74.5	83.9	62.6	101.2
1999	274	1,918,571	168,726	87.9	87.5	88.4	79.9	89.9	69.3	110.2
2000	309	2,164,407	207,126	95.7	95.3	96.1	86.9	97.0	77.8	117.7
2001	336	2,360,984	243,340	103.1	102.7	103.5	93.8	104.8	85.0	125.8
2002	401	2,781,948	306,891	110.3	109.9	110.7	100.8	112.3	92.7	133.2
2003	426	2,932,780	345,487	117.8	117.4	118.2	107.1	119.5	97.3	142.4

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 3: Prevalence of stroke per 1,000 patients in QRESEARCH 1994-2003

year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	3,752	6.6	6.4	6.8	5.8	5.5	3.4	10.1
1995	106	768,102	6,708	8.7	8.5	8.9	7.7	6.8	4.0	11.8
1996	154	1,066,011	11,534	10.8	10.6	11.0	9.5	9.5	5.9	15.3
1997	183	1,268,780	15,298	12.1	11.9	12.2	10.7	10.2	6.8	17.1
1998	225	1,570,367	20,681	13.1	12.9	13.3	11.7	11.9	7.9	18.3
1999	274	1,918,571	27,778	14.5	14.3	14.6	12.6	13.7	8.9	19.4
2000	309	2,164,407	33,720	15.6	15.4	15.7	13.6	15.3	10.2	20.5
2001	336	2,360,984	39,337	16.7	16.5	16.8	14.5	16.6	11.1	22.5
2002	401	2,781,948	48,496	17.4	17.3	17.6	15.3	17.6	11.9	23.1
2003	426	2,932,780	52,671	17.9	17.8	18.1	15.8	18.0	12.6	23.5

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 4: Prevalence of cancer per 1,000 patients in QRESEARCH 1994 -2003

year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	3,774	6.6	6.4	6.8	6.0	6.2	4.5	8.3
1995	106	768,102	6,538	8.5	8.3	8.7	7.8	7.2	5.1	9.8
1996	154	1,066,011	11,394	10.7	10.5	10.9	9.7	9.3	6.2	14.2
1997	183	1,268,780	15,233	12.0	11.8	12.2	11.0	10.1	7.1	17.5
1998	225	1,570,367	21,451	13.7	13.5	13.8	12.5	11.5	8.0	19.7
1999	274	1,918,571	29,137	15.2	15.0	15.4	13.7	13.8	8.9	21.7
2000	309	2,164,407	35,683	16.5	16.3	16.7	14.9	15.2	9.8	22.7
2001	336	2,360,984	42,173	17.9	17.7	18.0	16.1	16.6	11.2	23.9
2002	401	2,781,948	53,327	19.2	19.0	19.3	17.4	18.2	12.5	25.8
2003	426	2,932,780	59,823	20.4	20.2	20.6	18.8	19.3	13.9	27.4

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 5: Prevalence of diagnosed asthma per 1,000 patients in QRESEARCH 1994-2003

year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	41,288	72.3	71.6	72.9	73.6	69.5	57.4	88.1
1995	106	768,102	60,289	78.5	77.9	79.1	79.9	77.5	59.5	95.4
1996	154	1,066,011	86,844	81.8	80.9	82.0	83.0	81.3	64.1	99.9
1997	183	1,268,780	107,126	84.4	83.9	84.9	85.9	82.8	63.9	104.0
1998	225	1,570,367	135,677	86.4	85.9	86.9	87.9	87.7	66.7	108.7
1999	274	1,918,571	172,594	89.9	89.5	90.4	91.5	91.4	71.0	110.6
2000	309	2,164,407	205,057	94.7	94.3	95.1	96.3	96.5	76.3	115.4
2001	336	2,360,984	231,539	98.1	97.7	98.5	99.4	99.1	78.8	118.5
2002	401	2,781,948	282,008	101.4	101.0	101.7	102.4	102.6	82.3	120.2
2003	426	2,932,780	305,475	104.2	103.8	104.5	104.9	104.8	86.8	123.0

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 6: Prevalence of COPD per 1,000 patients in QRESEARCH 1994-2003

year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	5,574	9.8	9.5	10.0	8.9	6.7	4.8	15.2
1995	106	768,102	7,830	10.2	9.9	10.4	9.2	7.9	4.5	14.3
1996	154	1,066,011	12,064	11.3	11.1	11.5	10.3	8.9	5.2	14.9
1997	183	1,268,780	15,223	12.0	11.8	12.2	10.9	9.4	5.3	15.9
1998	225	1,570,367	19,729	12.6	12.4	12.7	11.5	10.2	6.1	17.1
1999	274	1,918,571	25,469	13.3	13.1	13.4	11.9	10.9	6.9	17.7
2000	309	2,164,407	31,405	14.5	14.3	14.7	13.1	12.0	8.1	19.1
2001	336	2,360,984	36,761	15.6	15.4	15.7	14.1	13.9	8.7	20.3
2002	401	2,781,948	45,184	16.2	16.1	16.4	14.8	14.4	9.5	21.4
2003	426	2,932,780	49,538	16.9	16.7	17.0	15.3	15.0	10.2	22.5

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 7: Prevalence of epilepsy per 1,000 patients in QRESEARCH 1994-2003

year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	3,853	6.7	6.5	6.9	6.6	6.5	4.3	8.9
1995	106	768,102	5,636	7.3	7.1	7.5	7.2	7.3	4.6	9.4
1996	154	1,066,011	8,578	8.0	7.9	8.2	7.9	8.1	5.6	10.4
1997	183	1,268,780	10,696	8.4	8.3	8.6	8.3	8.5	5.9	10.9
1998	225	1,570,367	13,898	8.8	8.7	9.0	8.7	8.8	6.2	11.2
1999	274	1,918,571	17,598	9.2	9.0	9.3	8.97	9.1	6.6	11.5
2000	309	2,164,407	20,516	9.5	9.3	9.6	9.3	9.3	7.1	11.8
2001	336	2,360,984	23,043	9.8	9.6	9.9	9.5	9.7	7.4	12.4
2002	401	2,781,948	27,817	10.0	9.9	10.1	9.7	10.0	7.8	12.6
2003	426	2,932,780	30,075	10.2	10.1	10.4	9.9	10.2	7.9	12.7

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 8: Prevalence of hypothyroidism per 1,000 patients in QRESEARCH 1994-2003

year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	1,382	2.4	2.3	2.5	2.3	1.2	0.5	2.4
1995	106	768,102	3,008	3.9	3.8	4.0	3.7	1.9	0.7	4.7
1996	154	1,066,011	6,778	6.4	6.2	6.5	5.9	4.1	0.9	12.0
1997	183	1,268,780	9,577	7.5	7.4	7.7	7.0	6.4	1.3	13.1
1998	225	1,570,367	14,970	9.5	9.4	9.7	8.9	9.1	2.4	15.7
1999	274	1,918,571	21,623	11.3	11.1	11.4	10.4	12.1	3.3	18.1
2000	309	2,164,407	27,734	12.8	12.7	12.9	11.8	13.8	4.6	19.5
2001	336	2,360,984	33,524	14.2	14.0	14.3	13.0	15.2	6.6	21.5
2002	401	2,781,948	45,066	16.2	16.0	16.3	14.9	17.3	9.4	23.4
2003	426	2,932,780	53,259	18.2	18.0	18.3	16.7	19.5	11.6	25.0

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 9: Prevalence of mental health problems per 1,000 patients in QRESEARCH 1994-2003

Year	No. practices	Registered population on 1st Jan and previous 6 months	Total no. patients	crude rate per 1,000	LCL	UCL	Age standardised rate per 1,000	Median practice rate per 1,000	25th percentile	75th percentile
1994	71	571,281	17	0.0	0.0	0.0	0.0	0	0	0
1995	106	768,102	20	0.0	0.0	0.0	0.	0	0	0
1996	154	1,066,011	41	0.0	0.0	0.0	0.0	0	0	0
1997	183	1,268,780	95	0.1	0.1	0.1	0.1	0	0	0
1998	225	1,570,367	207	0.1	0.1	0.1	0.1	0	0	0
1999	274	1,918,571	286	0.1	0.1	0.2	0.1	0	0	0
2000	309	2,164,407	435	0.2	0.2	0.2	0.2	0	0	0
2001	336	2,360,984	800	0.3	0.3	0.4	0.3	0	0	0
2002	401	2,781,948	1,905	0.7	0.6	0.7	0.6	0	0	0.1
2003	426	2,932,780	5,411	1.8	1.8	1.9	1.7	0.1	0	2.7

*Practices had to be using EMIS for at least 2 years prior to the start of the analysis year to be included in each year

Table 10: Comparison of crude prevalence rates between different data sources

Comparison between

(a) QRESEARCH national database (426 practices) 2003
(b) QRESEARCH pilot database (43 practices) 2003
(c) Key Health Statistics (derived from the General Practice Research Database), 1998
(d) Northern Ireland (38 practices), 2003

	QRESEARCH National Database (426 practices) 2003	LCL	UCL	QRESEARCH pilot (43 practices) Dec 2003	GPRD (211 practices) 1998	Northern Ireland (38 practices) 2003
Coronary heart disease	40.6	40.3	40.8	39.5	37.6	41.5
Diabetes	32.0	31.8	32.2	31.8	17.0	24.8
Hypertension	117.8	117.4	118.2	115.3	81.8	73.4
Stroke or TIA	17.9	17.8	18.1	16.6	2.2	4.4
Epilepsy	10.2	10.1	10.4	10.4	7.7	11.2
Hypothyroidism	18.2	18.0	18.3	15.7	5.0	17.3
Asthma*	104.2	103.8	104.5	107	73.2	63.4
Chronic obstructive airways disease	16.9	16.7	17.0	18.2	12.8	n/a
Cancer prevalence	20.4	20.3	20.6	17	??	n/a
Severe mental health problems	1.8	1.8	1.9	n/a	15.0	26.6

* QRESEARCH national and pilot database prevalence rates are the prevalence of diagnosed asthma without taking medication into account. In GPRD, it is patients with asthma and with treatment in the last 18 months (the new GMS contract requires treatment in the last 12 months).
**GPRD rates are based on 1998 prevalence rates and there has been an upward trend in all rates generally over the last 5 years.