GOVERNMENT ACTUARY'S DEPARTMENT

THE NATIONAL HEALTH SERVICE SUPERANNUATION SCHEME FOR SCOTLAND

ACTUARIAL INVESTIGATION AS AT 31 MARCH 2004

July 2008

GOVERNMENT ACTUARY'S DEPARTMENT

To*:* ***Scottish Ministers and***

The Rt Hon Alistair Darling MP, Chancellor of the Exchequer

I am pleased to present my report on the actuarial investigation of the National Health Service Superannuation Scheme for Scotland as at 31 March 2004. This is the tenth actuarial investigation of the scheme.

The report has been prepared in accordance with Regulation U3 of the National Health Service (Superannuation) (Scotland) Regulations 1995 (S.I. 1995 No 365).

Trevor Llanwarne
Fellow of the Institute of Actuaries
Government Actuary
10 July 2008

GOVERNMENT ACTUARY'S DEPARTMENT

The National Health Service Superannuation Scheme for Scotland

Actuarial Investigation as at 31 March 2004

Contents

1 Introduction

1.1 The scheme actuary has undertaken an actuarial investigation (or 'valuation') of the National Health Service Superannuation Scheme for Scotland ('the scheme' or 'the NHSSS') at regular intervals since the scheme was established in 1949. The last report, prepared by Chris Daykin, covered the five years to 31 March 1999 and was published in September 2006. The NHSSS Regulations (S.I. 1995 No. 365 as amended) have required such a report to be produced at five yearly intervals and this report covers the period from 1 April 1999 to 31 March 2004.

1.2 The principal purposes of the actuarial investigation are to assess the level of liability in respect of the benefits due under the scheme's regulations, taking into account the demographic experience of the scheme since the previous valuation, and to recommend the contribution rate to be paid by the employers who participate in the scheme.

1.3 I have prepared this report in accordance with the appropriate requirements of Guidance Note GN9 (version 8.1) issued by the Board for Actuarial Standards. GN9 (v8.1) sets out the requirements for actuarial reports on the funding of defined benefit pension arrangements, particularly those subject to Part 3 of the Pensions Act 2004. The NHSSS is an unfunded statutory public service pension scheme with the benefits guaranteed by the Government, and so is not subject to Part 3 of the Pensions Act 2004. This report has been prepared following the principles of GN9 (v8.1) except those which are not relevant for an unfunded public service pension scheme, including those relating to statutory funding requirements, solvency and investment risk. Analysis of the inter-valuation experience and of the change in the initial surplus over the inter-valuation period have been complicated by the decision to rebase the financing of the scheme and its notional fund (see Section 3) during that period, along with other associated changes such as the incorporation of the cost of pension increases into the scheme. Where relevant, the effects of these changes have been described in this report.

1.4 The NHSSS regulations have now been amended to require actuarial reports at four-yearly intervals so that the next report will have an effective date of 31 March 2008.

1.5 In summary this valuation shows a small deficit of £370m as at 31 March 2004 compared with a surplus of £450m as at 31 March 1999 and shows that employers can pay contributions, from 1 April 2009, of 13½% of pensionable pay. This is based on around 150,000 active members, a whole time equivalent pensionable payroll of around £3.4bn and a notional fund as at 31 March 2004 of £12.4bn.

1.6 The three biggest reasons for the shift to deficit are lower than expected investment returns on the notional fund, increased longevity and the impact of pay modernisation.

1.7 The method of financing the scheme has changed since the last valuation and the scheme now meets the cost of pension increases. These developments have also had an impact on the scheme's deficit and are described fully in this report.

2 Scheme provisions

2.1 The scheme benefit and contribution provisions taken into the investigation are set out in the NHSSS regulations as they applied at the effective date of the investigation (S.I. 1995 No. 365, as amended). Although there have been amendments to the Regulations since the previous report (and pensions for civil partners were introduced with effect from December 2005), these changes have not had a material effect on the value of benefits and contributions as assessed in this report as at 31 March 2004. The principal provisions of the scheme are summarised in Appendix A.

Review of the Scheme

2.2 Starting in 2003, a major Review of the scheme was undertaken by the Scottish Pensions Review Group (SPensiR), a partnership between employers, trade unions/professional organisations for the NHS in Scotland and the Scottish Executive. The Review was initiated following the publication by the Government of its Pensions Green Paper in December 2002, which included a proposal to increase the normal pension age in public service pension schemes from 60 to 65. This was to apply to all employees for their future service but with some protection for current employees up to 2013. Discussions during 2005 between the government and trade unions from across the public service (in the 'Public Services Forum', or PSF), resulted in an agreement which modified this proposal. Existing scheme members were to be protected from the higher pension age for the remainder of their employment, provided that new pension arrangements would result in at least the same long-term savings as envisaged in the Green Paper.

2.3 In September 2007, SPensiR made formal recommendations to Scottish Cabinet Secretaries for Finance and Sustainable Growth and Health and Wellbeing on the future of the scheme which have been accepted. These included major changes in the benefit, contribution and financing structure of the scheme in keeping with the PSF agreement. A summary of the key changes proposed is included in Appendix A. Details may be found in the final agreement between NHS Employers and NHS Trades Unions dated 12 September 2007 on the SPPA website at http://www.sppa.gov.uk/pension_reform/documents/NHSAgreement.pdf. These recommendations have been implemented with effect from 1 April 2008. The contribution rate recommended as a result of my investigation is affected by the outcome of this Review. The effects on the assessed liabilities and costs of these proposals for the scheme are therefore considered in Section 11 of this report.

3 Developments since the 1999 Report

3.1 Employees have been required to make contributions to the scheme at the rate of 6% of pensionable pay (or 5% for manual staff). They may also elect to pay additional contributions to purchase added years of service. Employers pay contributions to cover the balance of the cost of providing the benefits under the scheme. These were at the rate of 4% of pensionable pay between 1 April 1999 and 31 March 2002, increasing to 5.5% in April 2002. These contribution rates followed the recommendations made in reports on earlier actuarial investigations and excluded the cost of pension increases which, until April 2003, were not charged to scheme employers.

Pension increases

3.2 In the last valuation, it was noted that the Secretary of State for Scotland and the Chancellor of the Exchequer had agreed that, with effect from 1 April 2003, the scheme employers should assume responsibility for meeting the cost of all pension increases including those on pensions-in-payment, contingent pensions to dependants, deferred pensions and the benefits prospectively payable to contributors. The cost for accruing benefits would be met by employers paying a higher rate of contribution to the scheme. The cost of pension increases on accrued liabilities was to be met by rebasing the level of the notional fund with the corresponding resource increase effectively being met by a transfer from the Exchequer.

3.3 In the report on the 1999 valuation it was noted that 14% of pensionable pay was a reasonable assessment of the cost of providing benefits and pension increases after taking account of contributions by employees. In the absence of data as at April 2003 it was noted that this was consistent with the employer cost of benefits, including PI, accruing to member of the NHS Pension Scheme (England and Wales) - NHSPS (E&W). Employer contributions were increased to this level in April 2003.

Table 1 Employer contributions in inter-valuation period

Financial year	Employer contributions as a percentage of pensionable payroll
1999/2000	4.0%
2000/2001	4.0%
2001/2002	4.0%
2002/2003	5.5%
2003/2004	14.0%

Notional Fund

3.4 The NHSSS is an unfunded scheme under which contributions for employees and employers are paid to the Exchequer which in turn meets the cost of paying benefits as and when they fall due. In order to assess an appropriate contribution cost historically there has been an associated notional fund of assets theoretically invested in UK government stocks. Following on from the decision that employers should bear the cost of pension increases, it was necessary to rebase the level of notional assets to reflect the extent to which liabilities already falling on the scheme were increased by the transfer of the obligation to pay pension increases from the Consolidated Fund to the scheme. It was agreed by SPPA and HM Treasury that the effective date of this rebasing should coincide with the date on which employer contributions were increased to meet the cost of pension increases, namely 1 April 2003. The notional fund on 31 March 1999 was £5.8bn.

SCAPE

3.5 The date of 31 March 2003 was also chosen to change the financing of the scheme onto the new standard financing methodology for unfunded public service pension schemes known as SCAPE (Superannuation Contributions Adjusted for Past Experience). Under the SCAPE system, the notional assets of the scheme will be credited with interest at a long-term rate determined by HM Treasury from time to time after taking advice from the Government Actuary. The same real rate of return will be used to value the liabilities of the scheme and to determine the standard contribution rate. This means that the assessed costs of the scheme to be met by employees and employers will no longer depend upon the performance of a portfolio of notional investments. The assessed costs will continue to reflect all other significant aspects of the scheme's actual experience, such as rates of pay increases and other demographic factors.

Coverage of this report

3.6 In addition to assessing the scheme liabilities and prospective costs as at 31 March 2004, this report also covers the rebasing of the notional assets of the scheme as at 31 March 2003.

3.7 The rebasing takes account of the transfer of the obligation to pay pensions increases and the transition to SCAPE. Under the agreement between SPPA and HM Treasury the notional assets in the scheme as at 31 March 2003 were to be made equal to the value of liabilities then falling on the scheme as assessed under the SCAPE methodology. In this way the employers would become liable for the full cost of meeting pension increases going forwards without the need to revisit the actuarial condition of the scheme had the arrangements at 31 March 1999 continued to apply. This resulted, as described in paragraph 3.3, in a substantial increase in the contributions being paid into the scheme.

Scheme income and outgoings

3.8 Under the SCAPE methodology, no surplus or deficiency will arise as a result of interest credited to the notional fund (because interest is credited at the same real rate as the assumed valuation rate of interest net of assumed pension increases).

3.9 Under the system of notional funding applying up to 31 March 2003, credits were added and debits subtracted from the opening balance of notional assets each year to obtain the closing balance of notional assets. The credits included investment returns on a notional portfolio of UK Government stocks and contributions from employees and employers. The debits included benefit expenditure, but this expenditure excluded the effects of pension increases. These items formed the basis of the scheme accounts up to 31 March 2003. Given the decision that the scheme should recognise the full cost of benefits (including pension increases) from 1 April 2003, and that the notional fund should be rebased from that date, the amounts of these accounting items over the four years from 1 April 1999 to 31 March 2003 are no longer of direct relevance to the outcome of the valuation.

3.10 A summary of the income and expenditure of the scheme for the period from 1 April 2003 to 31 March 2004, as derived from the Scheme's resource accounts, is provided at Appendix B. This includes the impact of pension increases, but excludes any payments or receipts in respect of additional non-scheme liabilities arising as a result of premature retirements on grounds other than ill-health. Investment income has been credited to the rebased notional fund in accordance with the SCAPE methodology at a rate of 3.5% pa in excess of movements in the Retail Prices Index for the year. It should be borne in mind that the main purpose of maintaining a notional fund under the SCAPE methodology is to ensure that a realistic assessment of scheme costs, and changes in those costs, can be made and that these costs can then be recognised by stakeholders. As there are no actual scheme investments, the liability to pay scheme benefits ultimately falls to the Exchequer.

3.11 From Appendix B, it can be seen that, for 2003/04, contribution income exceeded benefit expenditure (although it should be noted that comparisons with the position as at the 1999 valuation are complicated by the considerable increase in the employer contribution rate during the inter-valuation period and the fact that benefit expenditure now includes the effects of pension increases). It is important to recognise that an excess of income over expenditure does not necessarily indicate that an actuarial investigation will result in a valuation surplus. The notional assets of the scheme can be considered as corresponding to the assets of a conventionally funded pension scheme, in which contributions must be accumulated during the working lifetime of members in order to provide benefits after retirement.

4 Membership data

4.1 The Scottish Public Pensions Agency (SPPA) supplied data on the current and former members of the pension scheme as at 31 March 2004.

4.2 For current (active) members accruing final salary benefits data has been provided grouped by age, gender and valuation group. For active members accruing career average benefits and members with preserved benefits individual data has been provided. For members with pension in payment data has been provided grouped by age, gender and cause of retirement.

4.3 Responsibility for the data ultimately rests with SPPA.

4.4 I have carried out reasonableness checks on the data provided and have had detailed discussions with SPPA. The data provided for the valuation as at 31 March 2004 does not appear to be entirely consistent with data provided for the valuation as at 31 March 1999 or with the data shown in the scheme's resource accounts.

4.5 It has not been possible to resolve all the concerns over the data that were raised. Following discussions with SPPA I have therefore made the assumptions set out in paragraphs 4.7 to 4.11 and, provided these are valid, I consider the data to be sufficient for the purposes of this funding valuation.

4.6 The number of active members appears to have increased slightly since 1999 to around 147,000. Given the continued growth in the NHS workforce since 1999 a figure of around 147,000 as at 31 March 2004 appears low compared to the figure of around 140,000 disclosed in the 1999 valuation report. However a figure of around 147,000 appears high relative to a count of just under 120,000 shown in the scheme's 2004 resource accounts. These discrepancies may arise because there are many different ways of counting the number of active members depending, for example, on how part time members and members with two or more employment contracts are counted. Such working arrangements are common in the NHS. We are also aware that the active member's data includes 23,000 records relating to preserved pensioners.

4.7 Although there is some uncertainty over the number of active members in the scheme the total pensionable payroll shown in the active members' data broadly reconciles with the contributions data shown in the scheme's 2004 resource accounts. Therefore I have assumed that using the active member data unadjusted will not have a material impact on my calculation of the scheme's liabilities.

4.8 Pensionable salary data for part time members was not available and so I have assumed that for each age, gender and valuation group, the average whole time equivalent pensionable pay for part time members is the same as the average whole time equivalent pensionable pay for whole time members.

4.9 I have assumed that the profile of the 23,000 preserved pensioners included in the actives data (see paragraph 4.6) is the same as the profile of the other preserved pensioners.

4.10 Some active members as at 31 March 2004, who have re-entered NHS employment, have their previous service included in the deferred member data. I have assumed that valuing preserved, rather than accruing, benefits for these members will not have a material impact on my calculation of the value of the scheme's liabilities.

4.11 The pensioner data provided includes some pensions that had come into payment through redundancy. It is not possible to separate the elements of these pensions which give rise to scheme liabilities from those which are funded separately by employers. I have therefore rated down the liabilities to bring total pensions in payment in the data provided into line with total pensions shown in the scheme's 2004 resource accounts. In doing so, I have made an assumption that the age/gender/pension profile of actual scheme pensioners is the same as the age/gender/pension profile of the pensioner data provided.

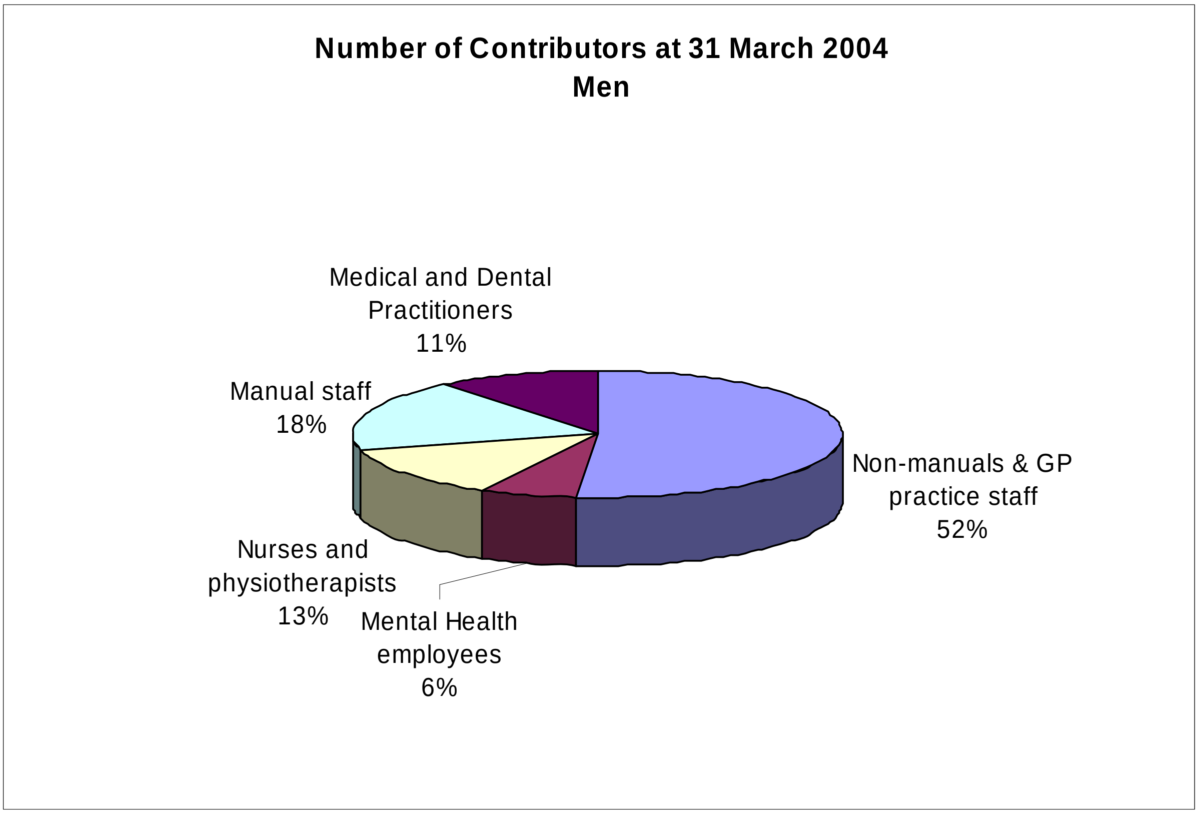
4.12 A summary of the data provided for the active members of the scheme at 31 March 2004, classified broadly by the type of benefits available, is given in Table 2 and illustrated in Figure 1. More detail is given in Appendix C. A breakdown of the contributors by age is given in Figure 2.

4.13 Data tabulations in this section of the report are based on rounded figures. In some instances, the totals shown may not correspond exactly with the sum of the rounded constituent elements.

Table 2 Number of contributors at 31 March 2004

Category of Members	Men	Women	Total ('000s)
Non-manuals, GP practice staff (excluding special classes and practitioners), hospital medical staff and part time specialists	16.7	45.5	62.2
Mental Health employees (officers and manual staff)	2.1	3.6	5.7
Nurses and physiotherapists	4.4	57.0	61.4
Manual staff (not mental health)	5.9	5.9	11.7
Medical and Dental Practitioners	3.5	2.6	6.1
Total	**32.5**	**114.6**	**147.1**

Figure 1


Number of Contributors at 31 March 2004
Men
Medical and Dental Practitioners 11%
Manual staff 18%
Non-manuals & GP practice staff 52%
Nurses and physiotherapists 13%
Mental Health employees 6%

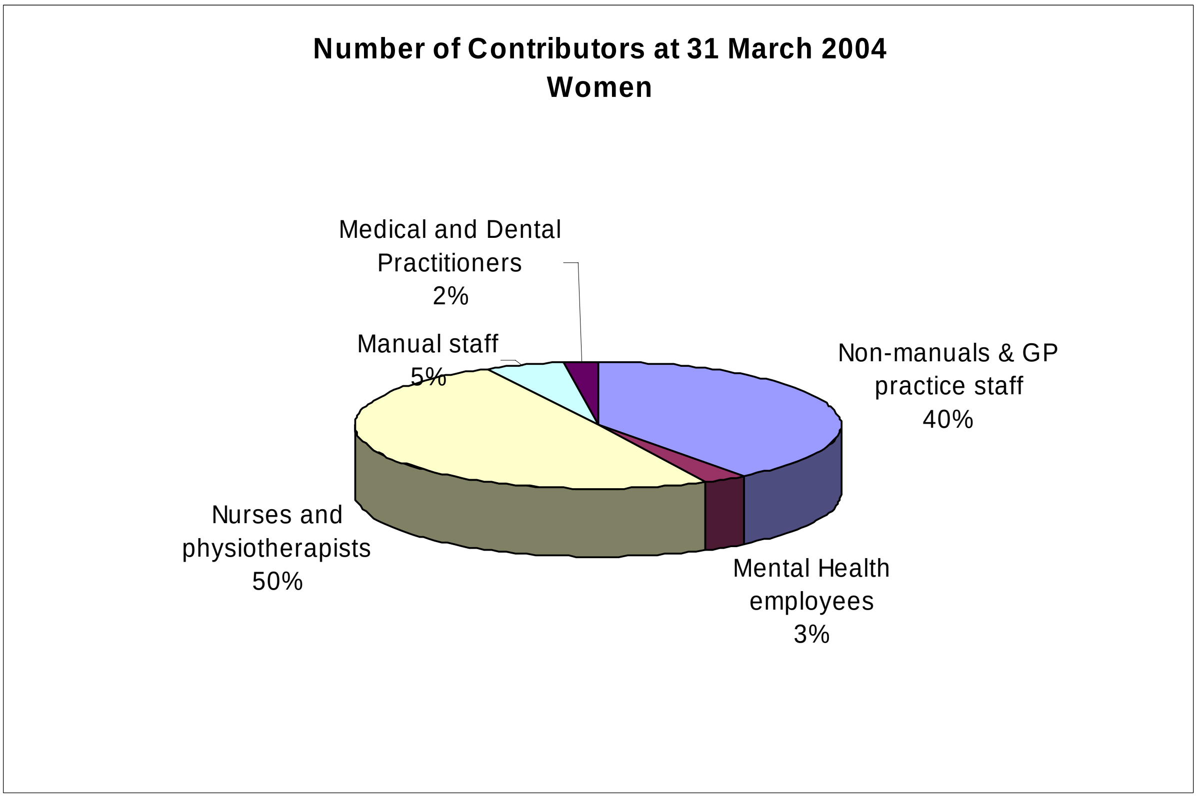
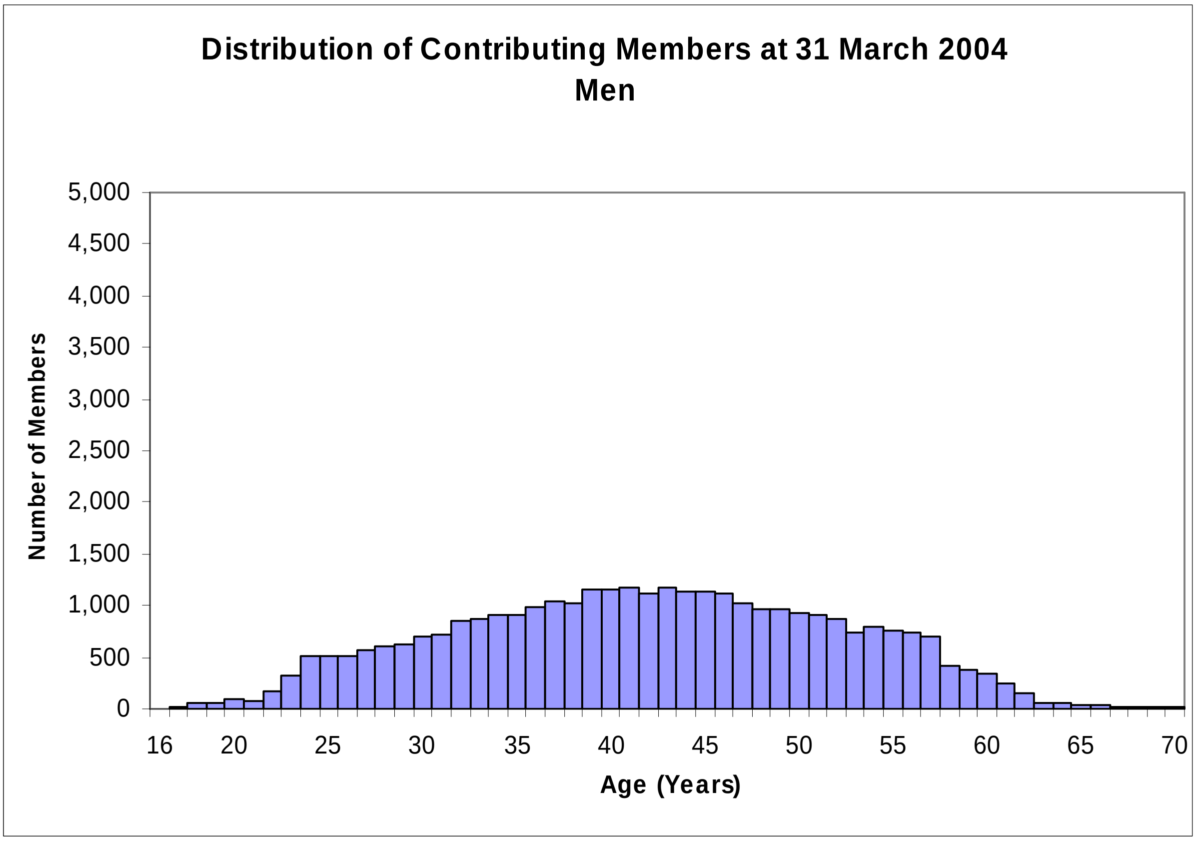
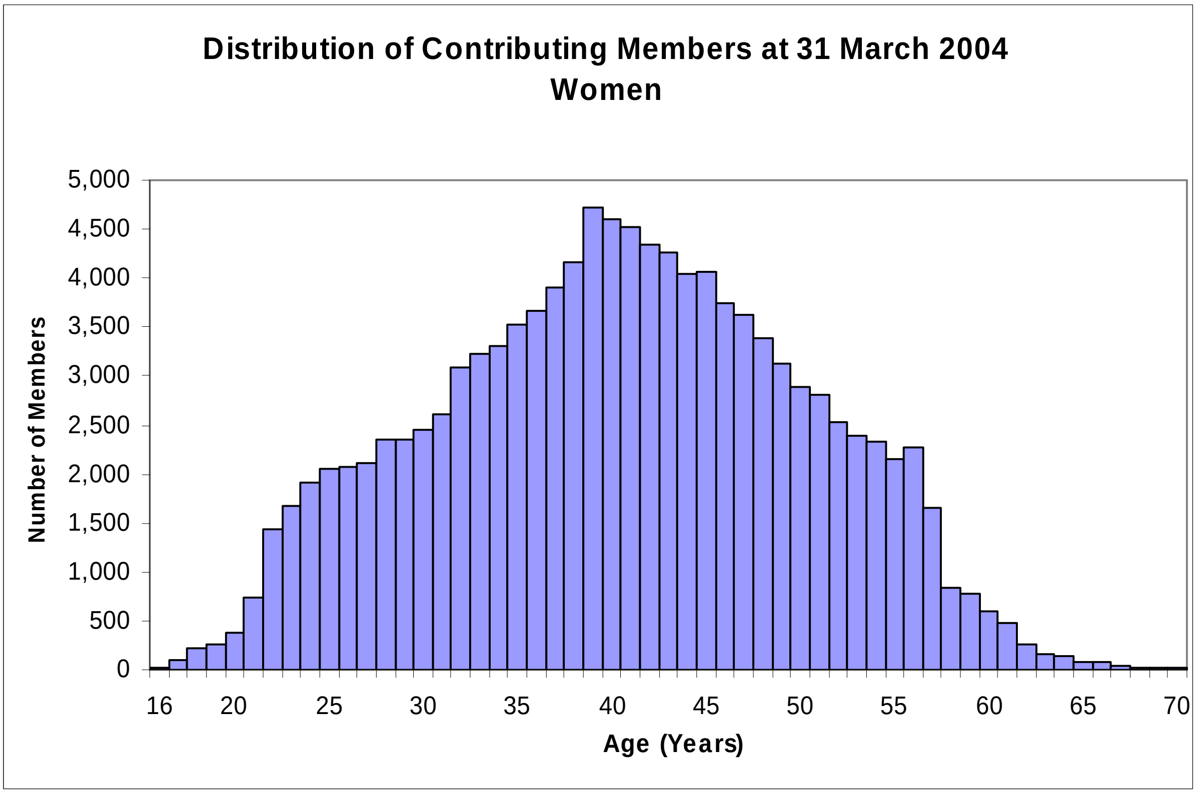

Number of Contributors at 31 March 2004
Women
Medical and Dental Practitioners 2%
Manual staff 5%
Non-manuals & GP practice staff 40%
Nurses and physiotherapists 50%
Mental Health employees 3%

Figure 2


Distribution of Contributing Members at 31 March 2004
Men
Number of Members
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
16
20
25
30
35
40
45
50
55
60
65
70
Age (Years)


Distribution of Contributing Members at 31 March 2004
Women
Number of Members
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
16
20
25
30
35
40
45
50
55
60
65
70
Age (Years)

4.14 Details of all recorded movements in the number of members in the scheme during the four years ending 31 March 2004 were supplied by the SPPA for each employee group. Movement data was not available for the year 31 March 1999 to 31 March 2000. It is inevitable in a scheme with so many new entrants and withdrawals each year that some movements will not have found their way onto the computer records in time for inclusion in the statistics for the investigation. These processing delays are not thought to have distorted the valuation results to any significant extent.

4.15 Changes in membership of the scheme during the five years since the previous investigation are summarised in Table 3. In calculating these figures I have assumed that the various rates of entry and exit during the year 1999/2000 were equal to the equivalent average rates of entry and exit indicated by the movement data provided for the four years ending 31 March 2004.

Table 3 Changes in contributing membership 1999-2004*

	Men	**Women**	**Total**
			('000s)
Numbers at 31 March 1999	**32.8**	**106.9**	**139.7**
New Entrants 1999-2004			
Total new entrants	13.5	50.6	64.1
Exits 1999-2004:			
Deaths	0.2	0.3	0.5
Age retirements	1.4	5.1	6.5
Ill-health retirements	0.5	1.8	2.3
Withdrawals (refund, preserved benefits or transfers)	11.6	35.8	47.4
Total exits	13.8	43.0	56.7
Numbers at 31 March 2004	**32.5**	**114.6**	**147.1**

* Movement numbers notified have been adjusted to ensure consistency with in-force data.

4.16 The total pensionable payroll of contributors at 31 March 2004 is 20% higher than the corresponding figure for 31 March 1999 and average pensionable pay is 14% higher. The difference between 14% and 20% is due to the increase in the number of contributors. The payroll figures and the average annual salaries in 1999 and 2004 are shown in Table 4 below. A breakdown of average annual pensionable earnings at 31 March 2004 by employment group is included in Appendix C.

Table 4 Payroll and average salaries

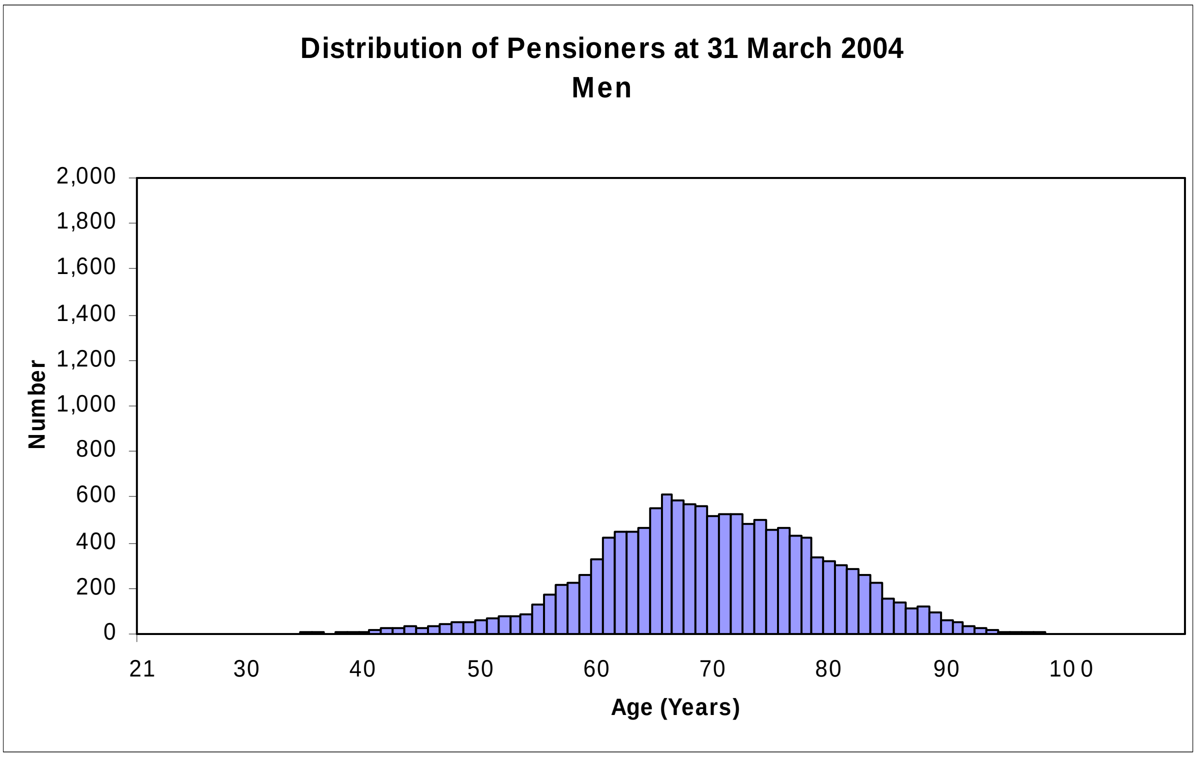
	Men	Women	Total
	(£ million per annum)		
1. Pensionable payroll at 31 March 1999	816	2,008	2,823
2. Pensionable payroll at 31 March 2004	979	2,401	3,380
	(£ per annum)		
3. Average pensionable pay at 31 March 1999	24,883	18,782	20,214
4. Average pensionable pay at 31 March 2004	30,134	20,960	22,987

4.17 The data on those receiving a pension as at 31 March 2004 are summarised in Appendix C and total figures are shown in Table 5 below. The figures include both children receiving allowances and those who have taken premature retirement on grounds other than ill-health but have not yet reached normal retirement age. In the case of the latter group, the scheme valuation liability is for the benefits due from normal retirement age excluding any element which arose from any enhancement to service granted at retirement. Figure 3 illustrates the distribution of pensioners by age.

Table 5 Summary of pensioners data at 1999 and 2004

	Men	Women	Widowers, Widows & Dependants	Total
	('000)			
Pensioners at 1 April 1999	13.6	39.6	7.4	60.6
Pensioners at 1 April 2004	13.6	43.0	9.0	65.6
	(£m)			
Annual Amounts at 1 April 1999	124.8	133.3	23.3	281.4
Annual Amounts at 1 April 2004	150.5	165.5	31.2	347.2

Figure 3


Distribution of Pensioners at 31 March 2004
Men
Number
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
21
30
40
50
60
70
80
90
100
Age (Years)

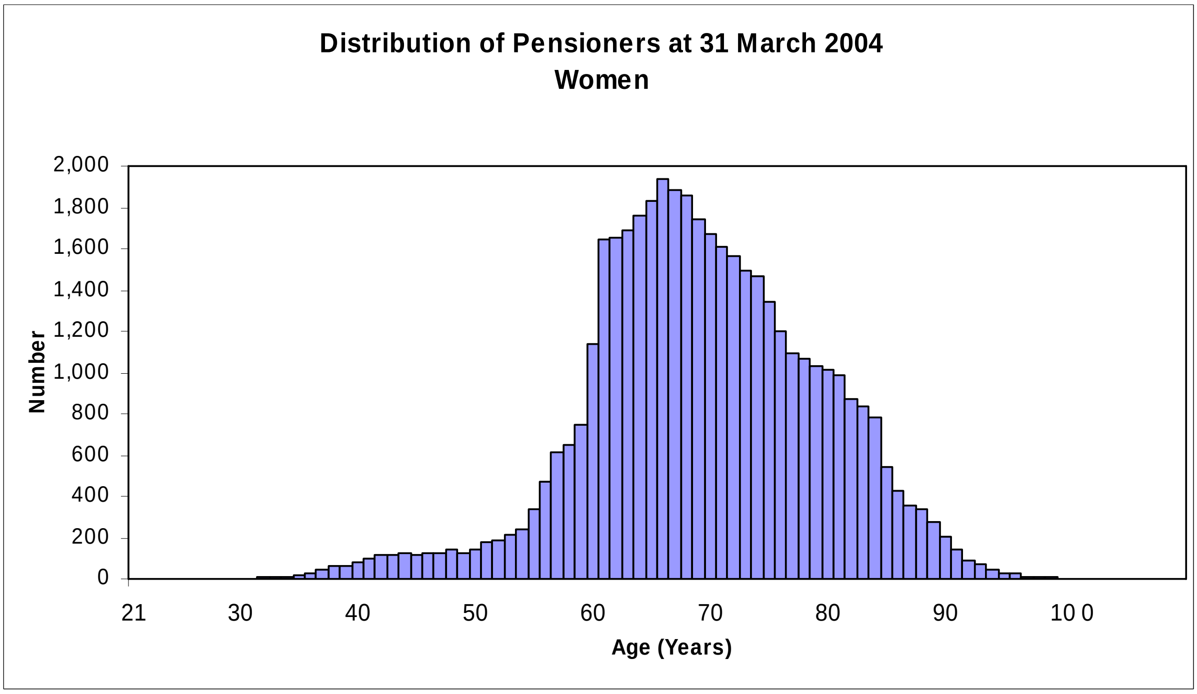
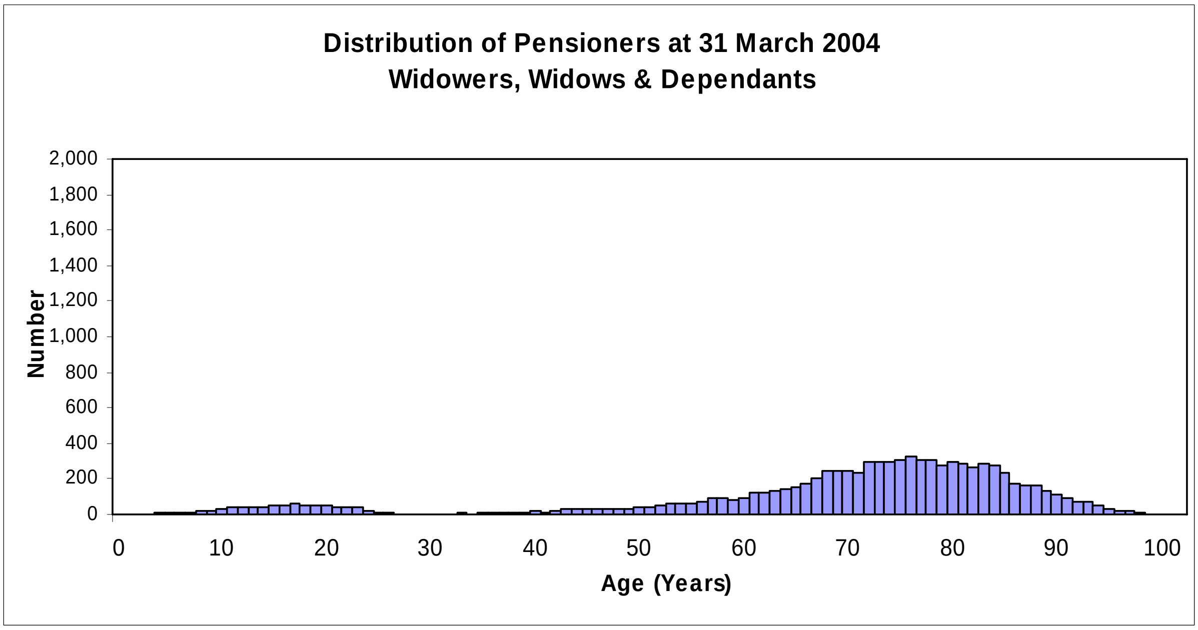

Distribution of Pensioners at 31 March 2004
Women
Number
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
21
30
40
50
60
70
80
90
100
Age (Years)

Figure 3 (continued)



4.18 The number of pensions in payment has increased by about 8% over the five years to the valuation date. This is a lower rate of increase than experienced in the previous five years. The change in the number of pensions in payment reflects a complex mix of factors including longevity, past workforce size and the age profile of current employees. Although the scheme has operated for over fifty years, the number of pensioners has not yet built up to a 'steady state' level, due mainly to the significant periods of expansion of the health service occurring since its inception. Consequently, the number of pensions in payment can be expected to continue to increase but at varying rates.

4.19 Total pensions in payment, including pension increases, have grown considerably over the five year period, from £281 million a year at 31 March 1999 to £347 million a year at the valuation date, an increase of about 23%. Average pensions in payment have increased by about 14% during the same period to stand at £5,300 a year, compared with a compound inter-valuation pensions increase factor of about 11½%. The difference is mainly due to new pensions during the inter-valuation period having come into payment at a higher average rate than that of pensions ceasing in the period.

4.20 Preserved benefits are awarded to those who leave the scheme with at least two years of service. They consist of a pension payable from age 60, a lump sum and, where applicable, a contingent spouse's (or from December 2005 civil partner's) pension. All preserved benefits attract pension increases from date of leaving, and these have been valued in full. The member may choose to transfer the value of those benefits into another pension arrangement. The data for preserved pensioners as at 31 March 2004 are summarised in Appendix C.

5 Valuation methodology and funding objective

5.1 The funding objective is to ensure that benefits are paid for as they accrue during active service, by means of a contribution of a level percentage of pensionable pay called the Standard Contribution Rate (SCR). The SCR in respect of a typical new member would be just sufficient, if paid throughout the whole of his or her service, to finance the benefits under the scheme, provided that experience is in accordance with the actuarial assumptions made. This method of determining the SCR, which was also adopted at the previous valuation, is known as the Entry Age Method and is applicable in respect of the bulk of the scheme membership. The Entry Age SCR is then adjusted to allow for those valuation groups, with reserved rights to certain additional benefits, which were closed to new entrants in 1995.

5.2 The employers' contribution rate for the scheme as a whole will remain stable provided that the actuarial assumptions are borne out and that the age, gender and pay distribution of new members does not change significantly. This remains the case if the overall number of new members shows significant variation as it has within the NHS. Depending on the actual experience of the scheme as disclosed at each successive actuarial valuation, larger or smaller contributions may have to be paid for a period in order to achieve the funding objective.

5.3 The liabilities under the scheme have been valued by a *'prospective benefits'* valuation method. Under this method, all prospective benefits in respect of members in post at the valuation date and of those former members with a remaining interest in the scheme at that date are taken into account. For former members, the value of the pensions in payment, preserved and contingent pensions as well as pension increases are included. For contributing members, benefits in respect of service both before and after the valuation date are valued, allowing for future increases in earnings up to the assumed exit date and for pension increases thereafter.

5.4 No detailed data as at 31 March 2003 was available with which to rebase the notional fund as at 31 March 2003. The notional fund at 31 March 2003 has therefore been estimated by rolling back for one year the present value of prospective benefits in respect of members and former members at the 31 March 2004 (as described in paragraph 5.3) less the present value of projected future contributions in respect of active members at the 31 March 2004 using the SCR described in paragraph 5.1.

5.5 For the valuation as at 31 March 2004, the value of the notional assets at that date and the value of active members' future contributions from that date are subtracted from the value of the prospective liabilities, leaving a balance to be met by future contributions from the employers.

5.6 However, for ease of understanding the valuation balance sheet in Table 9 (see Section 10 below) has been set out in a slightly different format from that described in paragraph 5.5, to enable the notional surplus/deficit to be explicitly identified. In particular, the liability for active members shown in the balance sheet is equivalent to the total expected liability for active members for both past and future service less expected future receipts of the Entry Age SCR (including employee contributions) in respect of those members. This net liability for active members is then added to the liability for deferred and pensioner members to give the total liability. The difference between the notional fund and this total liability then represents the notional surplus/deficit.

6 Financial assumptions

6.1 The liabilities of the scheme fall to be paid over long periods into the future. In assessing the value of the liabilities of the scheme it is necessary to make assumptions about discount rates for capitalising these future pension payments. Since 1 April 2003 the scheme has carried the liability for pension increases previously borne by the Consolidated Fund. The benefits to be valued are increased in line with changes in prices after leaving active membership. While contributing to the scheme, the benefits to be valued for most members are linked to their individual earnings, although the benefits for some members are linked to movements in average earnings. The key discount rates are therefore the rate of return to be assumed net of price increases and the rate of return to be assumed net of general increases in earnings.

6.2 For the purpose of crediting investment returns to the notional fund from 1 April 2003, HM Treasury have decided that the assumed real rate of return will be 3½% a year in excess of price increases. Under the SCAPE methodology (described in paragraph 3.5), this rate of return is to be used for valuing scheme liabilities. It has also been used for the calculations underlying the rebasing of the notional fund at 31 March 2003 and for those required for valuing/discounting the scheme's liabilities as at 31 March 2004.

6.3 Although the scheme liabilities after retirement are linked to price increases, the liabilities accruing during active service are related to general increases in earnings. Accordingly, it is also necessary to consider the rate of return in relation to earnings increases. Historically, there has been a reasonably close correlation between price increases and general earnings increases, and so real earnings growth (in excess of price increases) has remained relatively stable by comparison to the nominal rates of increase of prices and earnings. It has been assumed that the rate of investment return in excess of general earnings increases will be 2% a year, which is equivalent to assuming that real earnings growth will be about 1½% a year. (The effects of career increases in pensionable pay are considered separately in paragraphs 7.18 and 7.19.)

6.4 Pensions accrued during the period from 1978 to 1997 include an element of pension known as the Guaranteed Minimum Pension on which the State pays some (or all) pension increases. As no data on Guaranteed Minimum Pensions is available we have relied on results emerging from the 2004 valuation of the NHSPS (E&W) to value Guaranteed Minimum Pensions in the NHSSS. An assumed gross rate of return is required in order to value Guaranteed Minimum Pensions. For the purposes of this valuation, it has been assumed that the long-term gross rate of return will be 6½% a year. (This assumption has a relatively minor bearing on the outcome of the valuation.)

6.5 Table 6 summarises the financial assumptions adopted for the current valuation and, for comparison, those adopted for the 1999 valuation.

Table 6 Summary of financial assumptions

Assumption	2004 valuation	1999 valuation
Gross rate of return pa	6½%	8%
Real rate of return in excess of:		
Prices pa	3½%	3½%
Earnings	2%	2%
Rate of real earnings growth pa *	1½%	1½%

*in addition to increases arising from salary progression, promotion etc.

6.6 The assumed real rates of return (of 3½% in excess of prices and 2% in excess of earnings) are the same as were adopted at the 1999 valuation. However, the assumed gross rate of return of 6½% a year is lower than that assumed in 1999 (of 8% a year), reflecting the continuing fall in interest rates. Whilst these assumed rates of return may appear high in comparison with current market rates of interest, the liabilities of the scheme will not emerge for many years. The financial assumptions adopted for the valuation are based on long-term considerations.

7 Demographic assumptions

7.1 SPPA have provided some data on the inter-valuation experience of active members for each of the 16 different active membership categories which are included in Appendix C. No experience data was provided for former members.

7.2 In examining the inter-valuation experience of active members, tests were undertaken for each of the valuation groups against the expected out-turn based on the assumptions made at the previous valuation. However, where appropriate, a common set of assumptions has been adopted for more than one group. Where experience data was either not available or not sufficient to perform a robust analysis of scheme experience, assumptions made in the valuation of the NHSPS (E&W) as at 31 March 2004 were relied upon when setting the assumptions to be used for this assessment. The results of these investigations are described below.

Pensioner Mortality

7.3 I have not been able to consider the recent mortality experience of pensioners as no experience data for former members was available. I have therefore adopted the same assumptions as those used in the valuation of the NHSPS (E&W) as at 31 March 2004 but adjusted to allow for the differences in mortality between the general populations in Scotland and England & Wales as indicated by trends in UK 2004-based population projections.

7.4 Since the 1999 valuation, the actuarial profession and other bodies have continued to discuss and project future levels of mortality improvement. The broad consensus is that younger people will be subject to greater levels of future improvement than has previously been assumed, and than is incorporated in the standard PMA92 and PFA92 tables. I have therefore included allowances for future mortality improvement broadly based upon those included in the UK 2004-based population projections which, for future pensioners (from existing deferred and active members and new entrants) produces greater allowance for future mortality improvement than the standard tables.

7.5 For existing pensioners (other than ill-health pensioners), the assumed mortality rates are in accordance with the standard PMA92 and PFA92 tables. Table 7 shows the life expectancy of existing pensioners on this basis. This assumes longer life expectancy than that assumed at the previous valuation. For example the assumed life expectancy of a male pensioner aged 60 at the 1999 valuation was 22 years, 2 years less than the assumption used in this valuation.

Table 7 Life expectancy of existing pensioners

Age at valuation date	Men (years)	Women (years)
60	24	27
65	19	22
70	15	18
75	11	14
80	8	11

7.6 In respect of existing active and deferred members and future new entrants, the mortality rates in the standard tables have been projected to the calendar year 2044. The assumed life expectancy at age 60 for these groups is 26 years for men and 29 years for women. This assumes longer life expectancy than that assumed at the previous valuation. For example the assumed life expectancy of existing female active members at age 60 at the 1999 valuation was around 26.5 years 2.5 years less than the assumption used in this valuation.

Pensioner mortality after ill-health retirement

7.7 The average mortality of ill-health pensioners is expected to be heavier than that of age retirement pensioners (particularly in the early years after retirement). However no inter-valuation experience data was available to verify this and so I have assumed that the impact of ill health retirement on mortality rates is the same in Scotland as it is in England & Wales.

7.8 The assumed mortality rates for existing ill-health pensioners are based on the standard PMA92 and PFA92 tables with suitable adjustments. The assumed life expectancy at age 60 of existing ill-health pensioners is 21 years for men and 24 years for women. This assumes longer life expectancy than that assumed at the previous valuation.

7.9 The assumed mortality rates for future ill-health pensioners are similar although the rates include allowances for heavier mortality in the years immediately following retirement, but also for additional future mortality improvement (relative to existing pensioners). The assumed life expectancy of existing members retiring after the valuation date on ill-health grounds at age 55 is 26 years for men and 29 years for women. This assumes longer life expectancy than that assumed at the previous valuation.

Rates of retirement on grounds of age and ill-health

7.10 Contributors may retire on reaching the normal pension age of 60 (or 55 for members of those groups closed to new entrants in 1995, if they have completed the necessary period of service). Many employees remain in NHS employment beyond these ages, continuing to make contributions and accruing further benefits. The valuation assumptions have historically been set to be broadly consistent with the observed pattern of actual ages at which members retire.

7.11 Analysis of the inter-valuation experience showed that the assumptions for the probabilities of retiring on grounds of age made at the previous valuation remain appropriate for the valuation groups accruing career average benefits, but that for the valuation groups accruing final salary benefits there have been changes, with the average age at retirement in most cases reducing slightly. The rates adopted for this valuation reflect the observed changes, and are shown in Appendix D, together with the implied average age of retirement for each group.

7.12 The facility to take actuarially reduced early retirement benefits from age 50 was introduced to the scheme in March 1995. The reduction factors applied to the pension and lump sum of those who exercise the option were constructed with the aim of being broadly cost neutral to the scheme. No explicit allowance for such retirements has therefore been made in this investigation.

7.13 Scheme employers have the option to offer members early retirement without actuarial reduction on premature retirement or redundancy, in some cases with an explicit enhancement of pensionable service. However, the extra costs arising in such cases are met separately and wholly by the employers concerned, and so no explicit allowance has been made for the incidence of these early retirements in the valuation.

7.14 It was noted in the report on the previous valuation that the total number of observed ill-health retirements was less than that expected based on the 1994 assumptions, and the experience since that valuation once again shows significantly lower numbers of such cases than would be expected on the basis of the 1999 valuation assumptions. For most valuation groups, I have adopted significantly lower probabilities of ill-health retirement than at the 1999 valuation, taking account of the observed inter-valuation experience. The rates adopted at specimen ages are shown separately for men and women in Appendix D.

Other assumptions for active members

7.15 The mortality exhibited by contributors in the inter-valuation period was significantly lower than expected on the 1999 valuation assumptions, and the rates adopted for this valuation have been adjusted accordingly. Specimen rates are set out in Appendix D.

7.16 The experience in the NHS Schemes in Great Britain shows that the length of membership has a significant impact on the withdrawal rates. In general, the probability of leaving is highest in the first year of service, and decreases quite sharply with increasing service until reaching an "ultimate" level, which in this investigation has been taken to occur after completion of five years' scheme membership. I have continued to adopt a model under which the probability of withdrawal varies with both age and duration up to five years (except for the 1995 special class groups which have now been closed to new entrants for more than five years).

7.17 The inter-valuation withdrawal experience (relative to what would have been expected on the 1999 valuation assumptions) varied significantly between valuation groups. I have also compared the inter-valuation withdrawal experience with what would have been expected on the assumptions adopted in the valuation of the NHSPS (E&W) as at 31 March 2004. This comparison revealed that the England & Wales assumptions were a reasonable measure of recent experience in Scotland and so I have adopted assumptions based on the equivalent withdrawal assumptions used in England & Wales. Moving to withdrawal rates based on England and Wales assumptions has generally increased the withdrawal rates compared to the Scotland

1999 valuation, except for medical and dental practitioners where rates have generally decreased. The changes made at shorter durations also vary between valuation groups and with age. The assumed withdrawal rates for each valuation group at various specimen durations and ages are set out in Appendix D.

7.18 As an employee becomes more experienced, pay can be expected to increase as a result of promotion, performance-related pay increments, or in recognition of acquiring new skills, in addition to the results of general pay awards. No detailed experience data was available to investigate this effect but SPPA have confirmed that it is reasonable to use the equivalent salary scale assumptions used for the valuation groups in the NHSPS (E&W) valuation as at 31 March 2004. For each valuation group, this salary scale is intended to project the variation of average pensionable pay with age as a result of such career increases in pay. These scales incorporate no allowance for future changes in the general level of earnings, which are treated separately as described in paragraph 6.3.

7.19 The adoption of salary scales based on the assumptions used in England & Wales has led to significant changes to the salary scales assumed for the 1999 valuation, particularly for the valuation groups that accrue career average benefits. Index-values at various specimen ages for the salary-scales adopted at this valuation are set out at Appendix D.

7.20 Other assumptions required to value the liabilities have been adopted from either the 1999 valuation or the NHSPS (E&W) valuation as at 31 March 2004. This includes for example the assumptions required to value spouses' benefits, such as proportions married and age disparities.

8 Effects of pay modernisation

8.1 Where a known or partially known 'post-valuation' event increases the valuation liability, it is consistent with the requirement for a prudent approach to make some allowance for this in the valuation calculations. However, it is also the case that the effects of experience departing from assumptions during the four years 2004/2008 would normally be recognised at the next valuation (which has an effective valuation date of 31 March 2008). Thus a balance needs to be struck at the 2004 valuation between on the one hand making a prudent allowance for known or partially-known 'post-valuation' events, and on the other not anticipating the 2008 valuation results.

8.2 Starting in the second half of 2003, a major exercise commenced with the objective of modernising pay structures throughout the NHS. This exercise continued during the years immediately following the valuation date. A preponderance of NHSSS members were assimilated onto a series of new pay scales under the 'Agenda for Change' (or 'AfC') programme. In addition, new contracts were introduced for hospital doctors and General Medical Practitioners ('GMPs').

8.3 For GMPs, the new contracts caused significant step-changes in the level of NHSSS pensionable earnings to take place during the period April 2003 to March 2006. GMP pensions accrue on a career-average basis, but, under the NHSSS regulations, each year these accrued pensions have historically been up-rated by a factor (known as the Dynamisation Factor, or 'DF') reflecting increases in GMPs' average net remuneration. Pay modernisation had the potential to produce a series of larger than usual GMP DFs during the years following its implementation, which would lead in turn to increases in the accrued NHSSS past service liability in respect of GMPs.

8.4 For members accruing final salary benefits, SPensiR estimated that assimilation onto the new pay scales would lead to a one-off increase in their pensionable payroll of 3.5%, over and above that which would have been expected if the pay modernisation exercise had not taken place. This would also lead to a broadly proportionate increase in the accrued NHSSS past service liabilities in respect of these groups of members.

8.5 SPPA have requested that account should be taken in this valuation of the estimated effects of the pay modernisation exercise on the accrued and prospective liabilities of the scheme as follows:

(i) GMP DFs compounding to around 48% over the five years 2003/08[1] instead of around 24% as would have been expected under the valuation assumptions;

(ii) a one-off increase in the level of average pensionable pay for officers as a result of assimilating onto modernised pay-scales, which was anticipated to be 3.5%.

[1] This follows the Secretary of State's intervention in December 2006 to limit the level of GMP DFs in England & Wales emerging in the period and the subsequent over-ruling of this intervention following Judicial Review.

8.6 Notwithstanding that pay modernisation was a largely post-valuation event, the valuation results set out in Section 10 of this report include an allowance for the estimated effects of pay modernisation as described above. (These effects are included in the valuation data only to the extent that they had already emerged by the valuation date - but the calculations also incorporate assumptions for the effects emerging after that date.) Other aspects of scheme experience from April 2004 to March 2008 will be reflected in the results of the next valuation as at 31 March 2008.

9 Derivation of notional fund at 31 March 2004

9.1 In order to obtain a valuation result as at 31 March 2004, the value of the notional fund at that date needs to be determined in accordance with the SCAPE methodology. This in turn depends on the notional fund value at 31 March 2003 after it has been rebased to be equal to the actuarial liabilities (including the effects of pension increases) as at that date.

9.2 Based on the assumptions and methodology set out in Sections 5 to 7 above, the value of the scheme's liabilities and therefore also the value of the notional fund at 31 March 2003 was £11.5bn.

9.3 The starting point for the assessment of the financial position at 31 March 2004 is to roll forward the notional fund as at 31 March 2003 for one year in accordance with the SCAPE methodology. Interest is added to the opening balance of £11.5bn and to inward and outward cash-flows during the year at a rate based on movements in the Retail Price Index during the year plus an addition with an annual equivalent of the net valuation interest rate of 3.5%. The closing notional fund at 31 March 2004 is then equal to the opening balance at 31 March 2003 plus interest and contributions and inward transfer payments received during the year less expenditure on benefits and outward transfer payments. The details are set out at Appendix B.

9.4 The result of this calculation is a notional NHSSS fund as at 31 March 2004 amounting to £12.4bn, and this is carried forward into the valuation results set out in Sections 10 and 11 below.

10 Valuation results as at 31 March 2004 on existing Regulations

10.1 The outcome of the valuation of the assets and liabilities of the scheme, on the basis described in Sections 5 to 9 of this report, is set out in the valuation statement in Table 9 (based on the membership data summarised in Appendix C adjusted as discussed in Section 4). The liabilities valued include all benefits payable under the Regulations (as amended to the valuation date) in respect of pensioners, preserved pensioners and contributors as at 31 March 2004 for past service and assumed future service, including the effects of future and past payments under the Pensions (Increase) Acts now that the obligation for these payments has passed to the scheme.

10.2 As explained in Section 5, the joint Entry Age SCR is the combined member and employer cost of future benefit accrual under the Entry Age methodology (i.e. assuming no accrued surplus or deficit). The theoretical joint SCR determined under this methodology from 1 April 2004 is 19.7% of pensionable payroll (which may be compared with the current level of payments i.e. 20% - the sum of the employers' 'with pension increase' figure of 14% from paragraph 3.3 and the average member contribution rate of 6%). As described in paragraph 5.6, the active members' actuarial liability of £7.6bn shown in Table 9 is based on the combined projected liability in respect of past and future service of active members at the valuation date, less the present value of projected future contributions in respect of those members calculated at the valuation SCR of 19.7%.

Table 9 NHSSS valuation balance sheet at 31 March 2004

	£ billion
Active members	7.6
Deferred pensioners	0.8
Pensioners	4.4
TOTAL LIABILITY	12.8
Notional Fund As At 31 March 2004	12.4
DEFICIENCY AS AT 31 MARCH 2004	**0.4**

10.3 The estimated amount of the deficiency arising from the one-off effects of pay modernisation (see Section 8 above) is around £400m. Therefore aside from the impact of pay modernisation, there was no material net surplus or deficiency arising over 2003/2004.

Comparison with the previous valuation

10.4 A full analysis of the change in the overall valuation result between 1999 and 2004 is complicated by the rebasing of the notional fund during the inter-valuation period and the transfer of liability to pay pension increases from the Exchequer to the scheme. The results of the analysis undertaken are set out in Table 10.

Table 10 Comparison with previous valuation

	£ million
Surplus / (deficit) at 31 March 1999	**450**
Liability for introducing pensions increases as at 31 March 2003	(4,100)
Investment returns lower than expected between 1 April 1999 and 31 March 2003	(1,070)
Contributions being paid at a rate below the standard contribution rate in the inter-valuation period	(270)
Change in longevity assumption	(580)
Rebasing of notional fund	4,660
Other experience gains and losses and changes in assumption between 31 March 1999 and 31 March 2003	910
Surplus / (deficit) at 31 March 2003 (after re-basing the notional fund)	**0**
Assumed impact of pay modernisation	(360)
Other experience gains and losses between 31 March 2003 and 31 March 2004	(10)
Surplus / (deficit) at 31 March 2004	**(370)**
Overpayment of contributions 2004 -2009	70
Surplus / (deficit) to be spread	**(300)**

10.5 The most significant factors in the development of the scheme since 1999 have been:

> the assumption by the scheme of liability for pension increases;

> the change in the financial structure of the scheme with the change to SCAPE and rebasing of the notional assets as at 31 March 2003;

> pay modernisation; and

> changed assumptions for longevity

10.6 The changes in the financial structure of the scheme are described in sections 3 and 9. I discussed the demographic assumptions used for this valuation in section 7 and the impact of pay modernisation in section 8.

10.7 The liability falling on the scheme at 31 March 2004 after taking account of future contribution income is £12.8bn which compares with £5.4bn as at 31 March 1999. Of this increase of some £7bn, over one-half relates to the liability for pension increases now assumed by the scheme - including a change in the gross discount rate assumption used to place a value on non-increasing pensions. The majority of the remaining increase arises as a result of growth in the pensioner payroll, changes to the pensioner longevity assumption and the assumed effects of pay modernisation.

10.8 The scheme's experience has, in the case of some assumptions, varied significantly from the assumptions made at the previous valuation. One of the most material variations in experience was investment returns which were significantly lower than those assumed at the previous valuation - prior to 31 March 2003, the notional fund was assumed to be invested in a portfolio of government stocks, the return on which was less than expected. Other variations have been discussed in Section 7.

Employer contribution rate

10.9 After subtracting member contributions payable at the rate of 5% for manual members and 6% for non-manual members from the joint standard contribution rate of 19.7%, the standard employer contribution rate required to support the ongoing accrual of benefits on the existing benefit structure with effect from 1 April 2004 is 13.7% of pensionable payroll.

10.10 This compares with a rate of 14.0% which I understand has actually been paid by employers from 1 April 2004, and which continues to be paid. Any change in this rate following this valuation will take effect from 1 April 2009. The excess contributions paid from 1 April 2004 until 31 March 2009 will serve to reduce the scheme deficit. The present value at 1 April 2004 of these excess contributions between 1 April 2004 and 31 March 2009 amounts to around £70m and therefore serves to decrease the deficiency shown in Table 9 from £370m to £300m.

10.11 If this deficiency was to be made good by an addition to the employer contribution rate over 15 years commencing on 1 April 2009, then assuming that payroll was to remain constant in real terms from the valuation date to the end of that period, the addition would be 0.9% of pensionable payroll.

10.12 The total recommended contribution rate payable by employers from 1 April 2009 under the current regulations is 14.7% of pensionable payroll as set out in Table 11.

Table 11
Recommended employer contributions from April 2009 under existing structure

	% Pensionable Payroll
Employer standard contribution rate	13.7%
Deficit contribution (over 15 years from 1 April 2009)	0.9%
Employer contribution from 1 April 2009	**14.7%**

Sensitivity of results

10.13 If the real earnings growth assumption were increased or decreased by 0.5% pa, this would lead to an increase or decrease in the valuation SCR (19.7%) of about 1% of pensionable pay. After also taking account of past service effects and netting off member contributions, such an increase or decrease would lead to an increase or decrease in the valuation recommended employer rate (14.7%) of about 2½% of pensionable pay.

10.14 If the life expectancies of existing active members at the valuation date and future new entrants are longer than assumed for the valuation, so that each beneficiary experiences the mortality of an individual two years younger than assumed, this would add about ½% of pensionable pay to the SCR. After also taking account of past service effects and netting off member contributions, such a change would lead to an increase in the valuation recommended employer rate of about 1½% of pensionable pay. Life expectancies shorter than those assumed by an equivalent upward margin would lead to corresponding decreases in the valuation contribution rates of broadly equal orders of magnitude.

11 Effect of SPensiR's proposals for changes from 1 April 2008

11.1 SPensiR have now published their recommendations to Scottish Cabinet Secretaries for Finance and Sustainable Growth and Health and Wellbeing, including modifications to the existing arrangements (which they propose should be closed to new entrants from April 2008), and new arrangements for new entrants starting simultaneously. A summary of the key changes is included in Appendix A. Details may be found in the final agreement between NHS Employers and NHS Trade Unions dated 12 September 2007 on the SPPA website at http://www.sppa.gov.uk/pension_reform/documents/NHSAgreement.pdf.

11.2 These changes have been implemented with effect from 1 April 2008, and the recommended employer contributions from 1 April 2009 as set out in Table 11 can be reduced to allow for:

a) i) the estimated reduction in the cost of ongoing accruals of benefits from 1 April 2008 in the modified existing arrangements (savings mainly arising from the commutation of pensions for larger lump sums net of the cost of partner pensions) and

ii) the estimated reduction in the cost of ongoing accruals of benefits from 1 April 2008 for incoming new NHSSS members to the new arrangements (savings mainly arising from the increased pension age of 65 net of the cost of the higher accrual rate and partner pensions), plus

b) the estimated additional member contribution yield arising as a result of the introduction of the new tiered member contribution structure from 1 April 2008, plus

c) the estimated past service savings arising from the modifications of the existing arrangements expected to apply in respect of members of that scheme at 31 March 2008 (mainly from lump sum commutation savings net of costs of partner pensions).

11.3 Some additional assumptions are required to assess the financial impact of these elements. In particular I have assumed that where current and future members have an option on their eventual retirement to commute pension for lump sum, the average amount commuted will be equivalent to that which would be required if one-half of them took a lump sum equal to that applicable under the current regulations and one-half took the increased maximum lump sum permissible under the new HMRC limits introduced from April 2006. If take up of the option to commute pension for lump sum proves to be lower than my assumption then, all other things being equal, scheme costs in the future will increase. Conversely, if take up of this option to proves to be greater than my assumption then, all other things being equal, scheme costs in the future will decrease.

11.4 After allowing for the effects described in paragraph 11.2 contributions at the rate of 13½% may be paid from 1 April 2009.

12 Summary

12.1 This actuarial investigation as at 31 March 2004 covers the 5 years from 31 March 1999. This has been a period of significant change for the NHSSS:

a) the scheme has assumed responsibility for paying pensions increases which were previously met from the Consolidated Fund

b) the financial arrangements for the scheme have moved to the SCAPE methodology

c) the nature of the assets attributed to the notional fund of the scheme has been changed and their amount has been reassessed to take account of a) and b) above

d) Ministers have agreed changes in the structure of the scheme's benefits which have taken effect from 1 April 2008.

12.2 This report covers the impact of each of these changes as well as the analysis I have undertaken of the factors affecting the amount of the liabilities and contributions required to cover their cost based on the experience of the scheme since 1 April 1999.

12.3 Average pensionable pay has increased by 14% since the last investigation with further increases expected as the full effects of pay modernisation continue to emerge after 31 March 2004.

12.4 Notional investments on 31 March 1999 were £5.8bn. The rebasing of the notional fund to take account of pension increases and SCAPE resulted in notional assets of £11.5bn at 31 March 2003 increasing to £12.4bn by 31 March 2004. Employer's contributions were payable at 4% of pensionable pay in 1999/2000 and had increased to 14% of pensionable pay by 2003/2004, largely as a result of having to meet the cost of pension increases.

12.5 In making my assessment I have made a number of assumptions of a financial or demographic nature. The rate of return net of price increases is that set for the SCAPE basis of 3.5% a year. This coincides with the assumption adopted for the last actuarial investigation of the scheme.

12.6 I have reviewed the information provided on the scheme's experience and wider evidence as appropriate. A number of changes have been made to the assumptions adopted for the 1999 investigation. In addition I have:

> assumed an increase in the allowance for future mortality improvement broadly in line with that adopted for the 2004-based UK national population projections;

> allowed for the expected impact of the pay modernisation flowing from the new contracts for general medical practitioners and the assimilation of staff onto new pay arrangements;

> adopted supplementary assumptions required to assess the impact of the new benefit and contribution arrangements that came into effect on 1 April 2008.

12.7 On the basis of the assumptions made and the data provided to me, my assessment of the total liabilities of the scheme (net of expected future contributions) at 31 March 2004 is £12.8bn compared with £5.4bn at 31 March 1999. The largest element of the increase in liability over inter-valuation period arises from the transfer of liability for pension increases which was previously met by the Exchequer - now, instead, being met by the scheme.

12.8 Before taking account of the proposed changes to the scheme from 1 April 2008, I recommend that employers should make a contribution of 14.7% of pensionable pay from 1 April 2009. This figure includes 0.9% of pensionable pay to make good the deficit in the scheme if spread over a period of 15 years and on the basis that my assumptions are borne out in practice.

12.9 The changes to the scheme, effective from 1 April 2008, are expected to reduce both the value of accrued liabilities and the build up of future liabilities. Accordingly the employer contribution can be reduced to 13½% of pensionable pay rather than rising to 14.7%.

12.10 These recommendations will be reviewed at the next actuarial investigation of the scheme which will take place with an effective date of 31 March 2008.

Appendix A Summary of principal provisions under current Regulations and those proposed by SPensiR

The summary provided here describes the principal elements of the scheme benefit and member contribution structure provided for under the Regulations currently governing the scheme. For a complete description of the benefit and contribution provisions, reference should be made to the National Health Service Superannuation Scheme Regulations 1995, and subsequent amendments. Sections in blue italics provide a brief summary of SPensiR's principal proposals for change (these proposals have now been implemented). Full details of these proposals can be found in the final agreement between NHS Employers and NHS Trade Unions dated 12 September 2007 on the SPPA website found at http://www.sppa.gov.uk/pension_reform/documents/NHSAgreement.pdf.

Eligibility for Membership

A1. All NHS employees are eligible for membership of the scheme. Part time members have been eligible to join the scheme from 1 April 1991.

Contributions

A2. Members contribute at the rate of 6% (5% for manual staff) of pensionable pay. Pensionable pay includes basic pay and some allowances. *SPensiR have proposed a tiered member contribution structure based on the whole of pensionable pay with four tiers of 5%, 6.5%, 7.5% and 8.5%.*

Normal Pension Age (NPA)

A3. The NPA for most members is age 60. Mental health officers, nurses, physiotherapists, midwives and health visitors who joined the scheme before 1 April 1995 may retire at age 55 with an immediate pension provided they have completed the necessary service in relevant employment (20 years for mental health officers, 5 years for the other categories). On retirement before 60, benefits in respect of service before 17 May 1990 for male nurses will be either actuarially reduced for early payment, or deferred until age 60. *No change for members of the existing arrangements at 1 April 2008. New entrants from that date will have an NPA of 65.*

Pension on Retirement at or after Normal Pension Age

A4. The standard benefit for officers is an annual pension of 1/80th of final pay per year of service, where final pay is the best year's pay in the last three years of service. For any service as a mental health officer in excess of 20 years, pension accrues at double rate. (This only applies to those who joined the scheme before 1 April 1995). Pensions for practitioners are calculated as 1.4 % of total career pay up-rated with Dynamisation Factors to the earnings levels at retirement. *No change for members of the existing arrangements at 1 April 2008, but for new entrants to the new arrangements from that date, the standard benefit will be an annual pension of 1/60th of final pay per year of service, where final pay is the best average three years' adjusted pay in the last ten years of service (where adjustment is by reference to movements in the Retail Price Index). Pensions for new practitioners joining from 1 April 2008 will be calculated as 1.87% of total career pay up-rated with Dynamisation Factors to the earnings levels at retirement. The benefits of new entrants joining from 1 April 2008 accrued before NPA but taken after NPA will be subject to actuarial increase.*

Pension on Retirement due to Ill-Health

A5. Members with more than two years' service receive an immediate pension if they retire due to ill-health. The pension is calculated using specially enhanced service, with a maximum enhancement of 10 years. *SPensiR have proposed a switch to a two-tier system for determining enhancements, those who are capable of undertaking employment elsewhere will receive lower tier benefits with no enhancement while those not capable of undertaking employment elsewhere will receive higher tier benefits with a service enhancement calculated on a new formula based on their prospective service. Changes apply for both existing members and new entrants.*

Pension increases

A6. Pensions in payment and preserved benefits are subject to the provisions of the Pensions (Increase) Act 1971, and so, in general, are increased in line with price increases. *No change.*

Lump Sum Benefit on Retirement

A7. A lump sum of 3 times the annual rate of pension is payable. For service before 1972, the lump sum for married men is only equal to one year's pension, unless the member has paid additional contributions for an unreduced lump sum. *For active members of the existing arrangements at 31 March 2008, the SPensiR have proposed that members should be able to opt to give up some of their 1/80th pension to increase the lump sum up to the maximum permissible under HMRC rules at the rate of £12 of lump sum for each £1 pa of pension given up. Members of the new arrangements will have no automatic retirement lump sum, but may give up some of their 1/60th pension to take a lump sum up to the maximum permissible with the same 12 for 1 conversion rate.*

Lump Sum Benefit on Death in Service

A8. The lump sum on death in service is twice pensionable pay. *No change.*

Benefits on Withdrawal

A9. Members who leave with less than 2 years' service receive a refund of their own contributions. A deduction is made for those who are contracted-out of S2P to provide the member's share of the contributions equivalent premium payable to the National Insurance Fund.

Members with more than 2 years' service are entitled to a deferred pension payable from age 60. A lump sum of three times the annual rate of pension will be payable in addition at age 60.

Transfer values are available in either case.

No change for existing members (except a facility to give up pension for extra lump sum) but new entrants to the scheme from 1 April 2008 can only access unreduced deferred benefits from age 65, and this is a 1/60th pension with lump sum by commutation.

Spouse's, Partner's and Children's Benefits

A10. A spouse's (or from December 2005 a surviving civil partner's) pension is paid if a member dies after retirement at the rate of one-half of the former member's pension or, if he or she dies in service, at the rate of one-half of the pension he or she would have received if ill-health retirement had taken place on the date of death. In the case of widowers' and civil partners' pensions, only service from 6 April 1988 is taken into account. A survivor's pension at a higher rate is payable for the first three or six months of payment. Children's pensions are payable in respect of dependent children. Spouses' pensions cease on the remarriage of the recipient. *The accrual rate for survivor's pensions is unchanged from its current effective rate of 1/160ths (0.7% for practitioners) for members of the existing arrangements at 1 April 2008 and new entrants after that date (although for new entrants there is a change in the final pay definition – see A4 above). Survivor pensions at the same rate are extended to eligible partners who are unmarried and have no civilly-registered partner provided the eligibility conditions are met (although for existing members, service for such benefits is only backdated to 6 April 1988). All pensions of survivors of active members on or after 1 April 2008 who die on or after that date will be payable for life.*

Early Retirement

A11. Members aged 50 or above may take voluntary early retirement on leaving pensionable service. The pension and lump sum paid are calculated as for normal retirement, but actuarially reduced for early payment. With the consent of the employer, no actuarial reduction will be made, provided the employer meets the additional costs. *The minimum pension age increases to 55 for those who are not subject to transitional protection. Actuarial reduction for new entrants from 1 April 2008 retiring before age 65 will be relative to the value of age 65 benefits and will be applied to their 1/60th pensions before any commutation*.

Appendix B SCAPE account for year to 31 March 2004

	£ millions
Opening balance at 31 March 2003*	11,476
Contribution income and transfers-in**	658
SCAPE returns on notional investments***	705
Total income	1,366
Benefit expenditure and transfers out**	-437
Closing balance at 31 March 2004	12,405

* Calculated as described in Sections 5 to 7
** As shown in the scheme's resource accounts
*** Calculated in accordance with SCAPE methodology

Appendix C Membership data summaries as at 31 March 2004

CONTRIBUTORS AT 31 MARCH 2004

Group Number	Description of Employment Group		Number of Contributors ('000)	Total annual pensionable earnings £ million	Average annual pensionable earnings £
1	Non-manuals administrative, executive and clerical officers, including hospital medical and dental officers and male nurses	Men	16.7	540	32,418
		Women	45.5	963	21,162
2 (SC)	Nurses and physiotherapists with special class status	Men	1.8	40	22,785
		Women	31.7	758	23,927
2 (Not SC)	Nurses and physiotherapists without special class status	Men	2.6	39	15,096
		Women	25.3	411	16,230
3 & 4	Mental Health Officers	Men	2.1	62	30,218
		Women	3.6	89	24,794
5	Medical practitioners	Men	2.3	150	64,924
		Women	1.9	83	43,688
6	Dental practitioners	Men	1.2	57	47,440
		Women	0.7	24	33,599
7	Manual Staff (not mental health)	Men	5.9	90	15,296
		Women	5.9	74	12,551
	Totals	**Men**	**32.5**	**979**	**30,134**
		Women	**114.6**	**2,401**	**20,960**
		All	**147.1**	**3,380**	**22,987**

Notes: 1. The pensionable earnings shown is whole time equivalent (WTE).
2. WTE pensionable pay for part time members has been estimated.
3. Members with two or more employment contracts may be included more than once in this data.
4. This data includes around 23,000 records for members who have left active membership of the scheme.

PENSIONERS WITH PENSIONS IN PAYMENT AT 31 MARCH 2004

		Number (,000)	Total Pension (£ millions)	Average Pension £
Age Retirement	Men	12.4	142	11,469
	Women	38.7	152	3,921
	Total	51.1	294	5,753
Ill-health retirement	Men	1.2	8	6,771
	Women	4.2	14	3,232
	Total	5.4	22	4,010
Spouses and other dependants	Men	1.8	2	1,226
	Women	7.2	29	4,008
	Total	9.0	31	3,465
All	**Men**	**15.4**	**153**	**9,932**
	Women	**50.2**	**195**	**3,875**
	Total	**65.6**	**347**	**5,295**

Note: Data includes redundancy pensions which are funded by employers.

PRESERVED PENSIONERS WITH BENEFITS NOT YET IN PAYMENT AS AT 31 MARCH 2004

	Number (,000)	Total Pension (£ million)	Average Pension £
Men	11.8	8.5	717
Women	49.8	35.5	712
Total	**61.7**	**44.0**	**713**

Notes: 1. Members with two or more deferred pensions from different NHS employments may be included more that once in this data.

2. This data excludes about 23,000 records for members who have deferred pensions but are included in the contributors' data above.

3. This data includes some preserved pensions of members who have re-entered NHS employment.

Appendix D Assumed probabilities of exit by mode and salary scales

PROBABILITY OF RETIREMENT - MEN

Probability of retirement from service with pension or other benefit in the year following the age stated:

Age at beginning of year	Group							
	1	**2 (SC)**	**2 (Not SC)**	**3**	**4**	**5**	**6**	**7**
Ill-heath retirement								
27	0.0002	0.0005	0.0002	0.0007	0.0007	0.0001	0.0001	0.0010
32	0.0003	0.0008	0.0003	0.0014	0.0014	0.0001	0.0002	0.0016
37	0.0006	0.0017	0.0006	0.0020	0.0020	0.0002	0.0004	0.0024
42	0.0011	0.0025	0.0011	0.0048	0.0048	0.0004	0.0011	0.0039
47	0.0021	0.0050	0.0021	0.0084	0.0084	0.0013	0.0022	0.0052
52	0.0046	0.0106	0.0046	0.0157	0.0157	0.0036	0.0052	0.0084
57	0.0154	0.0371	0.0154	0.0372	0.0372	0.0155	0.0157	0.0275
62	0.0180	0.0428	0.0180	0.0506	0.0506	0.0053	0.0053	0.0492
Age retirement								
55	-	0.05	-	0.20	0.20	-	-	-
56	-	0.03	-	0.09	0.09	-	-	-
57	-	0.03	-	0.09	0.09	-	-	-
58	-	0.03	-	0.09	0.09	-	-	-
59	-	0.03	-	0.09	0.09	-	-	-
60	0.14	0.08	0.08	0.15	0.15	0.25	0.40	0.09
61	0.12	0.06	0.06	0.08	0.08	0.13	0.22	0.09
62	0.12	0.06	0.06	0.08	0.08	0.13	0.22	0.09
63	0.12	0.06	0.06	0.08	0.08	0.16	0.22	0.09
64	0.14	0.08	0.08	0.08	0.08	0.20	0.22	0.09
65	0.60	1.00	0.60	1.00	1.00	0.55	0.70	0.85
66	0.50	-	0.50	-	-	0.20	0.30	0.50
67	0.40	-	0.40	-	-	0.20	0.30	0.50
68	1.00	-	1.00	-	-	1.00	1.00	1.00
Approximate average age on retirement assumed for those retiring on age grounds	**63.6**	**62.4**	**64.5**	**59.5**	**59.5**	**63.2**	**62.0**	**63.8**

Note: *Retirement on age grounds is assumed to occur on a birthday.*

PROBABILITY OF RETIREMENT - WOMEN

Probability of retirement from service with pension or other benefit in the year following the age stated:

Age at beginning of year	Group							
	1	**2 (SC)**	**2 (Not SC)**	**3**	**4**	**5**	**6**	**7**
Ill-heath retirement								
27	0.0003	0.0004	0.0003	0.0011	0.0011	0.0003	0.0003	0.0008
32	0.0004	0.0007	0.0004	0.0017	0.0017	0.0003	0.0003	0.0013
37	0.0006	0.0011	0.0006	0.0026	0.0026	0.0004	0.0004	0.0020
42	0.0008	0.0017	0.0008	0.0042	0.0042	0.0006	0.0006	0.0028
47	0.0013	0.0032	0.0013	0.0075	0.0075	0.0011	0.0015	0.0039
52	0.0039	0.0117	0.0039	0.0228	0.0228	0.0040	0.0051	0.0112
57	0.0176	0.0339	0.0176	0.0598	0.0598	0.0181	0.0181	0.0345
62	0.0113	0.0207	0.0113	0.0277	0.0277	0.0075	0.0075	0.0428
Age retirement								
55	-	0.07	-	0.09	0.09	-	-	-
56	-	0.07	-	0.06	0.06	-	-	-
57	-	0.07	-	0.06	0.06	-	-	-
58	-	0.07	-	0.06	0.06	-	-	-
59	-	0.07	-	0.06	0.06	-	-	-
60	0.35	0.50	0.35	0.30	0.30	0.35	0.40	0.40
61	0.23	0.25	0.23	0.23	0.23	0.15	0.20	0.23
62	0.23	0.25	0.23	0.23	0.23	0.15	0.20	0.23
63	0.23	0.25	0.23	0.23	0.23	0.15	0.20	0.23
64	0.23	0.25	0.23	0.23	0.23	0.15	0.20	0.23
65	0.65	1.00	0.65	1.00	1.00	0.45	0.85	0.65
66	0.45	-	0.45	-	-	0.40	0.30	0.50
67	0.40	-	0.40	-	-	0.40	0.30	0.50
68	1.00	-	1.00	-	-	1.00	1.00	1.00
Approximate average age on retirement assumed for those retiring on age grounds	**62.1**	**59.9**	**62.1**	**60.1**	**60.1**	**62.7**	**62.0**	**61.8**

Note: *Retirement on age grounds is assumed to occur on a birthday.*

PROBABILITY OF DEATH IN SERVICE

Probability of dying while a contributor to the scheme in the year following the age stated:

Age at beginning of year	Males	Females
22	0.0004	0.0003
27	0.0004	0.0003
32	0.0006	0.0003
37	0.0008	0.0004
42	0.0012	0.0006
47	0.0017	0.0009
52	0.0024	0.0014
57	0.0040	0.0021
62	0.0063	0.0031
67	0.0102	0.0046

PROBABILITY OF WITHDRAWAL FROM SERVICE - MEN

The rates shown are for withdrawal in the year following the age stated, according to the duration of service since date of entry to the scheme:

Age at the beginning of year of withdrawal	Group 1			Group 2 (SC)	Group 2 (Not SC)		
	First Year	Third Year	After 5 years	After 5 years	First Year	Third Year	After 5 years
22	0.241	0.173	0.114	0.106	0.281	0.185	0.094
32	0.219	0.147	0.075	0.053	0.242	0.163	0.067
42	0.195	0.122	0.040	0.028	0.191	0.121	0.038
52	0.113	0.071	0.015	0.000	0.113	0.064	0.010

Age at the beginning of year of withdrawal	Groups 3 and 4	Group 5			Group 6		
	After 5 years	First Year	Third Year	After 5 years	First Year	Third Year	After 5 years
22	0.084	0.018	0.013	0.000	0.075	0.039	0.015
32	0.056	0.018	0.014	0.000	0.075	0.039	0.014
42	0.027	0.030	0.019	0.000	0.075	0.039	0.007
52	0.000	0.035	0.024	0.000	0.075	0.039	0.000

Age at the beginning of year of withdrawal	Group 7		
	First Year	Third Year	After 5 years
22	0.340	0.196	0.090
32	0.258	0.154	0.057
42	0.258	0.141	0.033
52	0.190	0.107	0.022

Note: *The withdrawal rates for the second, fourth and fifth years of duration of service are intermediate between the rates shown above.*

PROBABILITY OF WITHDRAWAL FROM SERVICE – WOMEN

The rates shown are for withdrawal in the year following the age stated, according to the duration of service since date of entry to the scheme:

Age at the beginning of year of withdrawal	Group 1			Group 2 (SC)	Group 2 (Not SC)		
	First Year	Third Year	After 5 years	After 5 years	First Year	Third Year	After 5 years
22	0.205	0.146	0.095	0.083	0.240	0.159	0.083
32	0.182	0.119	0.060	0.044	0.208	0.138	0.061
42	0.168	0.094	0.037	0.022	0.183	0.102	0.037
52	0.128	0.070	0.024	0.000	0.167	0.086	0.024

Age at the beginning of year of withdrawal	Groups 3 and 4	Group 5			Group 6		
	After 5 years	First Year	Third Year	After 5 years	First Year	Third Year	After 5 years
22	0.118	0.020	0.013	0.000	0.050	0.044	0.030
32	0.041	0.020	0.013	0.000	0.050	0.038	0.019
42	0.024	0.025	0.016	0.000	0.050	0.038	0.008
52	0.000	0.030	0.019	0.000	0.050	0.038	0.000

Age at the beginning of year of withdrawal	Group 7		
	First Year	Third Year	After 5 years
22	0.381	0.230	0.116
32	0.369	0.219	0.079
42	0.272	0.154	0.050
52	0.212	0.123	0.025

Note: *The withdrawal rates for the second, fourth and fifth years of duration of service are intermediate between the rates shown above.*

CAREER SALARY-SCALES

(i) **Men**
related to an index of 100 at age 25

Age	Group						
	1	**2 (SC)**	**2 (Not SC)**	**3 and 4**	**5**	**6**	**7**
20	72	77	74	74	77	77	83
25	100	100	100	100	100	100	100
30	133	125	130	125	130	140	120
35	166	140	163	150	176	161	136
40	195	153	195	173	211	177	146
45	216	160	213	190	242	186	155
50	231	167	225	209	262	192	161
55	238	172	232	219	282	192	165
60	243	177	239	230	302	192	165

(ii) **Women**
related to an index of 100 at age 25

Age	Group						
	1	**2 (SC)**	**2 (Not SC)**	**3 and 4**	**5**	**6**	**7**
20	76	77	77	77	77	80	83
25	100	100	100	100	100	100	100
30	125	125	125	125	130	130	120
35	141	140	140	144	176	146	132
40	150	151	151	157	211	160	140
45	156	159	157	171	242	168	144
50	160	164	162	176	262	173	147
55	164	168	165	179	282	173	148
60	166	172	169	183	302	173	148