



Australian Government

Australian Government Actuary

Report on the costs of the Australian Government's Run-Off Cover Scheme for medical indemnity insurers

2004-05 financial year

© Commonwealth of Australia 2006
ISBN 0 642 74332 0

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from the Commonwealth. Requests and inquiries concerning reproduction and rights should be addressed to:

Commonwealth Copyright Administration
Attorney General's Department
Robert Garran Offices
National Circuit
CANBERRA ACT 2600

Or posted at:

<http://www.ag.gov.au/cca>

Printed by CanPrint Communications Pty Ltd

TABLE OF CONTENTS

1. INTRODUCTION.....	1
2. BACKGROUND	1
2.1 Medical indemnity insurance	1
2.2 Brief history of private medical indemnity insurance in Australia — the lead-up to the ROC Scheme.....	3
2.3 What is the ROC Scheme?.....	4
3. DATA.....	5
3.1 Data collection	5
3.2 Data verification	6
3.3 Eligible practitioners.....	7
3.4 Eligible claims	8
3.5 ROC indemnity payments.....	9
3.6 ROC support payments	10
4. FINANCIAL MANAGEMENT OF THE ROC SCHEME.....	13
4.1 Future liabilities of the ROC Scheme.....	13
4.2 Notional Account.....	14
4.3 Actuarial management.....	19
APPENDICES	
Appendix 1: ROC support payments	21
Appendix 2: Eligible practitioners and ROC Scheme contracts.....	23
Appendix 3: ROC Scheme eligible claims	25
Appendix 4: Methodology, assumptions and uncertainty	26

1. INTRODUCTION

1.1 This report has been prepared to comply with certain requirements of the *Medical Indemnity Act 2002* (Medical Indemnity Act). Section 34ZW of the Medical Indemnity Act provides for a report on aspects of the Run-Off Cover Scheme to be tabled each year in Parliament. The report is required to contain a statement of the:

- number of persons eligible for membership of the Run-Off Cover Scheme (ROC Scheme);
- total ROC indemnity payments paid by the Commonwealth during the financial year, including claims handling and administration expenses;
- total ROC support payments paid to the Commonwealth during the financial year; and
- projected liabilities of the ROC Scheme in future financial years.

1.2 This is the first report that has been prepared under section 34ZW of the Medical Indemnity Act. It relates to financial year 2004-05.

2. BACKGROUND

2.1 Medical indemnity insurance

2.1.1 Medical indemnity insurance is a form of professional indemnity insurance. It covers doctors for their professional negligence.¹

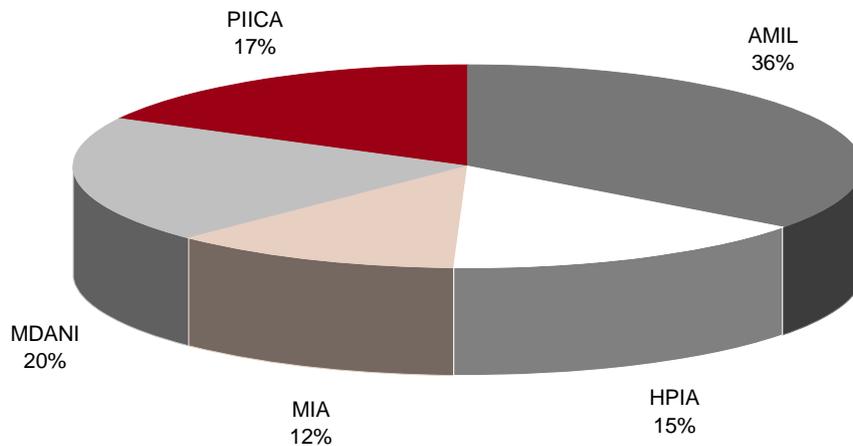
2.1.2 Doctors who undertake private medical practice in Australia generally purchase medical indemnity insurance from private sector underwriters.² This report considers the five private sector underwriters operating in Australia during 2004-05. Since then, another organisation, Invivo, has entered the market. Figure 1 below illustrates the market shares of the five private underwriters.³ The five private underwriters are Australasian Medical Insurance Limited (AMIL), Health Professional Insurance Australia (HPIA), MDA National Insurance (MDANI), Medical Insurance Australia (MIA) and Professional Indemnity Insurance Company of Australia (PIICA).

1 Medical indemnity insurance can also cover other costs such as those associated with appearing at coronial inquiries.

2 On the other hand, many employed doctors such as doctors practicing solely in a public hospital will be indemnified against negligence by their employer.

3 Based on information provided by the MIIs.

Figure 1: Market share of medical indemnity insurers



2.1.3 Medical negligence claims are initiated by, or on behalf of, patients against doctors. Roughly 2,000 claims of negligence might be expected each year in relation to private medical practice in Australia. However, there can be substantial variation from one year to the next. It is difficult to project the number of medical indemnity claims with any precision. A significant number of claims will be successfully defended.

2.1.4 The cost of medical negligence claims is highly variable since the claims relate to bodily injury. The cost of a medical indemnity claim to the insurer is made up of damages which are payable to the plaintiff, any of the plaintiff's legal costs which the insurer is obliged to pay, and the insurer's own costs of defending and managing the claim. While most claims are finalised for less than \$100,000, a small number of claims are large. Perhaps 5 per cent of claims cost more than \$500,000. These large claims have a significant impact on the overall cost of medical indemnity insurance. At least 40 per cent of the cost of all medical indemnity claims relates to claims which are larger than \$500,000.

2.1.5 The medical indemnity claim process can be long. Years can elapse between the date of a negligent medical incident and the date that legal action against the doctor is initiated. It is not unusual for claims to take a number of years to finalise after they have been initiated. It is common for the whole process to take more than five years for a single claim. The cost of a claim depends significantly on economic and judicial conditions prevailing at the time the claim is finalised (paid), rather than at the time of the medical incident or the time that the claim is made.

2.1.6 All of these factors make medical indemnity insurance difficult for an insurer to underwrite. It is hard to forecast claim numbers and claim sizes reliably. Moreover, most of the cost is likely to relate to a small minority of the claims, which adds further

uncertainty. As a result, it is difficult to know how much premium to charge and how much money to hold in reserve to pay claims. For these reasons a robust private market in medical indemnity insurance requires professional and disciplined underwriting and management.

2.2 Brief history of private medical indemnity insurance in Australia — the lead-up to the ROC Scheme

2.2.1 Historically, medical indemnity cover was provided to Australian doctors in private practice by medical defence organisations (MDOs). MDOs were not licensed insurers and were therefore not subject to prudential regulation.

2.2.2 Medical indemnity cover was originally provided to doctors on a so-called 'claims-occurring' basis. Doctors were protected against claims that might be made in relation to the medicine that they had practised while members of the MDO. Thus, doctors who had claims made against them after retirement could seek assistance from their MDO as long they were members at the time of the medical incident. Medical indemnity is very difficult to underwrite on a 'claims-occurring' basis, partly due to the often long delay between the date of medical incident and the time at which legal action is initiated.

2.2.3 During the 1990s most MDOs came under financial pressure as a result of increasing levels of claim payments and were forced to make calls on their members for additional funds.

2.2.4 At the same time, most MDOs progressively changed the basis of their cover from 'claims-occurring' to 'claims-made'. In simple terms, claims-made cover provided protection for the doctor against claims that were made during the period of membership. Thus, in order to continue to be covered against claims that might emerge in relation to past medical practice, a doctor had to continue his MDO membership. Professional indemnity insurance is generally provided on a 'claims-made' basis.

2.2.5 In 2002, Australia's largest MDO, United Medical Protection, collapsed. Following this, the Government took steps to stabilise the medical indemnity industry.

2.2.6 Since 1 July 2003, medical indemnity insurance has been required to be provided to Australian doctors by insurers licensed under the *Insurance Act 1973* and prudentially supervised by APRA.

2.2.7 This has ensured a more disciplined approach to underwriting and has reduced the risk of failure of a medical indemnity provider.

2.2.8 Consistent with more disciplined underwriting, all medical indemnity insurance is now provided on a 'claims-made' basis. Consequently, doctors have to continue to

buy insurance in order to remain covered against claims that might emerge, even if they are no longer practising. This form of insurance cover is known as run-off cover. Put simply, run-off cover provides insurance protection for doctors who have ceased medical practice. The potential delay between a medical incident and the commencement of legal action highlights the need for doctors to maintain run-off cover after ceasing practice.

2.2.9 For some doctors the annual cost of medical indemnity insurance runs into the tens of thousands of dollars. In order to address problems associated with the cost of run-off cover, including the potential threat to the provision of medical services, the Government imposed a requirement on medical indemnity insurers that they provide free run-off cover to certain groups of doctors who have ceased private practice. The Government simultaneously established a scheme to facilitate this without threatening the viability of the insurance companies and which was intended to be largely cost neutral to taxpayers. This scheme is known as the Run-Off Cover Scheme or the ROC Scheme.

2.3 What is the ROC Scheme?

2.3.1 The ROC Scheme facilitates the provision of free medical indemnity insurance cover to particular groups of doctors who have ceased private medical practice.

2.3.2 The rules for the ROC Scheme appear in the Medical Indemnity (Prudential Supervision and Product Standards) Act 2003 (PSPS Act), the Medical Indemnity (Run-off Cover Support Payment) Act 2004 (ROCSPA) and the Medical Indemnity Act. The principal elements of the ROC Scheme are as follows.

- The PSPS Act imposes an obligation on insurers to provide free run-off cover to particular groups of doctors who have ceased private practice.
- The Medical Indemnity Act provides for the Commonwealth to make payments to the insurers so that they can meet the costs of eligible run-off claims. These payments are known as ROC indemnity payments.
- The Medical Indemnity Act also provides for the Commonwealth to make other payments to insurers to offset the relevant costs of administering the ROC Scheme that are incurred by insurers.
- The Medical Indemnity Act also provides for the insurers to make payments to the Commonwealth to ensure that the ROC Scheme is largely cost-neutral to taxpayers. In practice, these payments are funded by a loading on practising doctors' medical indemnity insurance premiums. These payments are known as ROC support payments. The ROCSPA sets out the rules for calculating ROC support payments.

2.3.3 An important financial dynamic of the ROC Scheme is the timing mismatch between the payment of ROC support payments by practising doctors and the emergence, payment and reimbursement of medical indemnity claims of eligible doctors who are no longer practising. The first ROC support payments were paid on 30 June 2005. The ROC Scheme applies to medical indemnity claims that are first notified to medical indemnity insurers (MIIs) or MDOs on or after 1 July 2004. As a result of inherent delays in the medical claims process, ROC support payments are made well in advance of ROC indemnity payments.

2.3.4 In a cashflow sense, the ROC Scheme is a very immature arrangement. It will probably take about 20 years to reach maturity when income from ROC support payments and expenditure on ROC indemnity payments are of a similar order of size. To preserve the financial integrity of the ROC Scheme, a system of notional accounting is established in section 4 of this report.

2.3.5 The ROC Scheme provides for ROC support payments to be made by medical indemnity insurers to the Commonwealth and for ROC indemnity payments to be made by the Commonwealth to MIIs and MDOs. Ancillary arrangements provide for claim payments to be made to plaintiffs, ROC support payments to be recovered from practising doctors and other costs such as administrative costs to be incurred and reimbursed.

2.3.6 Each set of payment arrangements requires cohesive governing rules and protocols. Although the primary rules are in place, the development of subordinate protocols is complicated by the variety of practices in the medical indemnity insurance industry. For example, each of the five medical indemnity insurers in the Australian market has its own policy wordings, premium rating structures and claim management practices. As a result, the development of detailed protocols will take some time. Given the financial and administrative immaturity of the ROC Scheme, relevant systems continue to be developed.

3. DATA

3.1 Data collection

3.1.1 For the purpose of preparing this report, certain data were collected from the MIIs and MDOs by Medicare Australia including:

- details of practitioners eligible for membership of the ROC Scheme;
- details of claims notified to MIIs and MDOs by 30 June 2005 which might lead to recoveries under the ROC Scheme;
- details of ROC support payments;

- an estimate of that part of the cost of claims which were notified to MIIs and MDOs by 30 June 2005 which is expected to be recoverable under the ROC Scheme;
- an estimate of the part of the cost of claims which were incurred but not reported to MIIs and MDOs as at 30 June 2005 which is expected to be recoverable under the ROC Scheme; and
- an estimate of that part of the future claims cost of medical incidents during 2005-06 which is expected to be recoverable under the ROC Scheme.

3.2 Data verification

3.2.1 The results in this report rely on information provided by MIIs and MDOs. This information is regarded as the most suitable information available for the current purpose.

3.2.2 Steps were taken to ensure, as far as practicable, that the information provided was prepared on a basis suitable for the purpose. Despite this, it is not possible to guarantee that the information provided is free from material error. It is important to note that there was a deal of inconsistency in the information provided, some of which could not be readily explained.

3.2.3 Historically, MDOs have not maintained data in a form which is directly amenable to ROC analysis. For example, it has not been possible to establish a comprehensive list of doctors who were eligible for the ROC Scheme on 1 July 2004. This is not a criticism of the MDOs. It simply reflects that their business and information systems were not developed with a scheme like the ROC Scheme in mind.

3.2.4 Certain information was also sought from industry actuaries. Guidance was provided as to the nature of the data, calculations and information required. Follow up discussions with industry actuaries were held to try to understand the reasons for a number of apparent inconsistencies in the data provided.

3.2.5 It is to be expected that many of the data problems encountered will diminish in time. This is likely to take a few years. Until data problems subside, scheme projections will be subject not only to the considerable inherent uncertainty which surrounds medical indemnity insurance business, but also to additional uncertainty associated with the amount and quality of the available data.

3.2.6 In general, the results in this report blend estimates provided by industry actuaries with other estimates based on data provided by the MIIs and assumptions and models developed within this office.

3.3 Eligible practitioners

3.3.1 Doctors can become eligible for the ROC Scheme by means of retirement at age 65 years or older, cessation of private medical practice for three years, death, permanent disability, maternity leave or satisfaction of other eligibility criteria specified in the regulations. Practitioners who hold a subclass 422 (Medical Practitioner) or 457 (Business (Long Stay)) visa under the *Migration Regulations 1994* become eligible for the ROC Scheme when they cease to reside in Australia.

3.3.2 Eligible practitioners are entitled to receive notification of the terms and conditions of compulsory run-off cover from their MII.

3.3.3 Appendix 2 describes the test of eligibility for the ROC Scheme and the process of issuing and notifying compulsory run-off cover to eligible practitioners.

3.3.4 Individual records of eligible practitioners were provided by two MIIs, with the remaining MIIs providing estimated numbers of eligible practitioners in each speciality.

3.3.5 Table 1 below divides eligible ROC Scheme members into those eligible at the commencement of the scheme on 1 July 2004 and those who became eligible for membership of the ROC Scheme during the 2004-05 financial year. The numbers specified are the sum of the numbers of eligible practitioners provided by the each of the MIIs, some of which are estimates.

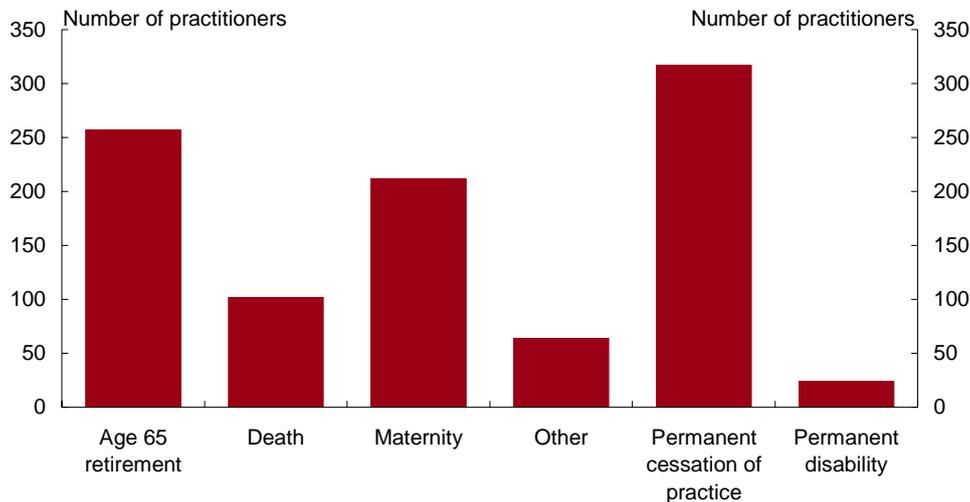
Table 1: ROC Scheme eligible practitioners

Practitioners eligible for the ROC Scheme as at 1 July 2004	2,112
Practitioners who became eligible for the ROC Scheme during the 2004-05 financial year	976
Total number of practitioners eligible for the ROC Scheme at 30 June 2005	3,088

3.3.6 Based on data provided by the medical indemnity industry, just over 3,000 doctors were eligible for cover under the ROC Scheme as at 30 June 2005. Over 2,000 of these were estimated to have been eligible for the ROC Scheme at its commencement. This estimate is subject to considerable uncertainty, and may not represent the entire group of eligible practitioners at that date. According to data provided by the industry, almost 1,000 doctors became eligible for cover under the ROC Scheme during 2004-05.

3.3.7 Figure 2 below illustrates the break-up of the 2004-05 new entrants by reason of eligibility.

Figure 2: ROC Scheme new entrants by reason of eligibility



3.3.8 According to the data provided, 26 per cent of new entrants were age retirements, while 22 per cent were practitioners on maternity leave and 12 per cent were practitioners who died or became permanently disabled. The number of age retirement new entrants reported by MIIs is lower than we would have expected. This may be due to some under-reporting and/or it may point to some lack of clarity around the definition and concept of retirement for private medical practitioners. The number of maternity leave new entrants is also lower than we would have expected. This may be due to under-reporting or may reflect relatively low fertility levels among doctors or that relatively few doctors tend to take maternity leave.

3.3.9 Based on the data provided, 32 per cent of new entrants were practitioners who became eligible for the ROC Scheme three years after permanently ceasing private practice (resigning). The distribution of the number of resignations observed across the five insurers was very uneven. This suggests that the number should be treated with some caution.

3.4 Eligible claims

3.4.1 MIIs and MDOs are entitled to reimbursement from the Australian Government for the costs of eligible claims. An eligible claim is one which:

- is first notified to the MII or MDO on or after 1 July 2004; and which

- relates to a doctor who is eligible for cover under the ROC Scheme at the time the claim is notified.

3.4.2 As at 30 June 2005, 75 medical incidents had been notified to MIIIs and MDOs, some of which may convert into formal medical indemnity claims which will be eligible for reimbursement under the ROC Scheme. Of these, 16 incidents relate to the 2004-05 new entrants to the ROC Scheme. The other 59 incidents relate to those doctors who were eligible for the ROC Scheme at the commencement of the scheme on 1 July 2004.

3.4.3 The number of medical incidents notified to MIIIs and MDOs which appear eligible for a ROC indemnity payment is lower than perhaps might have been expected. There are a number of possible reasons for this:

- The medical indemnity insurance industry experienced high levels of claim activity prior to the commencement of the ROC Scheme. High levels of claim activity prior to the commencement of the ROC Scheme may have included claims that were 'brought forward' (that is, made earlier than they otherwise would have been), resulting in a lower than normal level of general claim activity during 2004-05.
- It is possible that not all ROC Scheme eligible claims have been identified. MIIIs are likely to pursue ROC Scheme recoveries diligently at a late stage in the claim process. Thus at this early stage (first twelve months) some claims which will actually turn out to be eligible ROC claims may not yet have been identified as such. Similarly, MIIIs might have adopted a cautious approach to identifying as eligible claims which were not clearly eligible at the time that the data was provided.
- It is possible that doctors approaching retirement might cut down on their practice hours and possibly engage in less 'risky' practice (for example, less surgery). This would be expected to lead to a lower level of claim activity among retired ROC Scheme members.
- Only a small number of claims is expected in any one year. Random variation in the actual number of claims from year to year could be substantial.

3.5 ROC indemnity payments

3.5.1 ROC indemnity payments are the payments made by the Australian Government to MDOs and MIIIs as reimbursement of the costs of eligible claims.

3.5.2 No ROC indemnity payments had been made by 30 June 2005. This is not surprising because of the length of time involved in the claim process. ROC indemnity

payments will generally be made close to or after the time when an MDO/MII has finalised a claim.

3.5.3 The ROC scheme also provides for reimbursement of administrative and internal claims handling costs under the ROC Claims and Administration Protocol (section 34ZN of the Medical Indemnity Act). No payments had been made to MIIs by 30 June 2005 in reimbursement of administrative costs. These payments may begin to emerge during 2005-06 as administrative arrangements are bedded down.

3.5.4 The Commonwealth's own administrative costs are Budget-funded and so are not considered in this report.

3.6 ROC support payments

3.6.1 ROC support payments are paid to Medicare Australia (formerly the Health Insurance Commission) in the form of an annual lump sum imposed as a tax on each MII from 1 July 2004 under *the Medical Indemnity (Run-Off Cover Support Payment) Act 2004* (MI ROCSPA).

3.6.2 The amount of ROC support payments is calculated using a method set out in the MI ROCSPA. Appendix 1 describes the calculation in detail. Very briefly, it is based on:

$$\text{Applicable rate} \times (\text{premium income less taxes and charges}) \div (1 + \text{applicable rate}).$$

3.6.3 For most MIIs the applicable rate is currently 8.5 per cent. A slightly higher percentage applies to one insurer, Australasian Medical Insurance Limited, whose policy year is a calendar year and which remits its ROC support payment six months after the other MIIs. Since AMIL pays its ROC support payment six months later than the other MIIS, a slightly higher applicable rate is required in order to provide equivalence on a present value basis.

3.6.4 In order to provide full transparency for doctors, MIIs are required to attribute ROC support payments to individual policyholders. Each premium notice specifies the amount that has been included in the policyholder's invoice to meet the MII's ROC support payment obligations. All amounts are reported to Medicare Australia, which maintains a record of each doctor's individual run-off cover credit balance. Interest is applied to this balance annually at the short-term bond rate.

3.6.5 Subdivision E of Part 2 of the Medical Indemnity Act provides for repayment of each doctor's run-off cover credit balance, should the ROC Scheme ever be wound up without alternative arrangements being put in place. Thus, doctors who were still practising at the time of the wind-up of the ROC Scheme would be entitled to have this amount paid to their nominated medical indemnity provider. Doctors who were eligible

for the ROC Scheme at the time of its wind-up would not be entitled to any refund but would continue to be covered for any future claims that might emerge.

3.6.6 Table 2 below summarises the first round of ROC support payments.

Table 2: ROC support payments

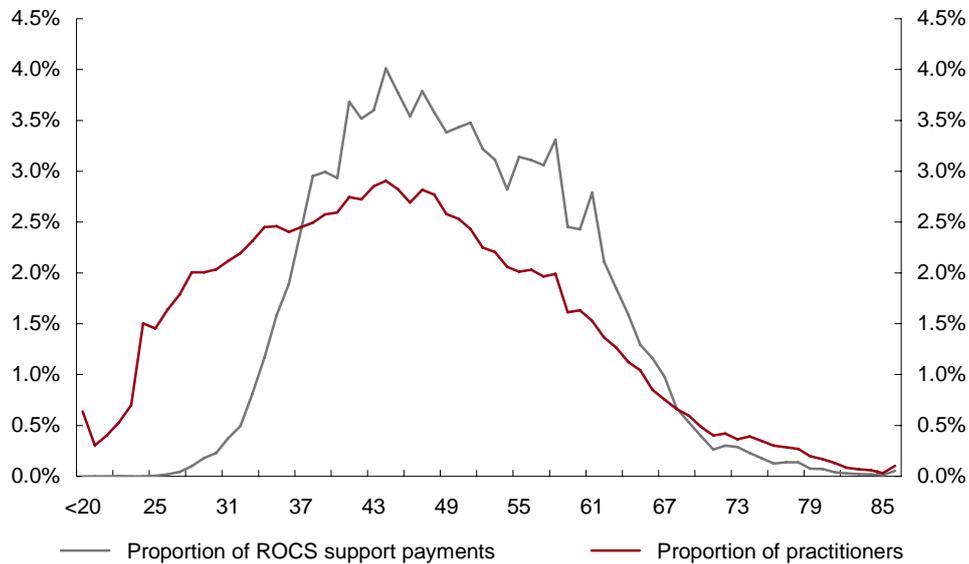
		ROC support payments (\$million)
Payable 31 December 2005	AMIL	9.630 ⁴
Payable 30 June 2005	MIA	2.770
	PIICA	3.579
	HPIA	3.477
	MICWA	4.172
	Total	23.627*

* Numbers do not add exactly due to rounding.

3.6.7 Figure 3 below summarises the contribution to ROC support payments by age. The proportion of ROC support payments is greater than the proportion of practitioners for ages 37 to 68. This reflects the low level of premiums for student, intern, trainee and hospital indemnified doctors aged in their 20s and 30s. The proportion of ROC support payments tends to diminish at higher ages. This provides some support for the suggestion that doctors tend to wind down their practice hours and possibly perform fewer risky medical procedures (for example, surgery) as they approach retirement, resulting in lower premiums.

4 Or \$9.389 million discounted to 30 June 2005.

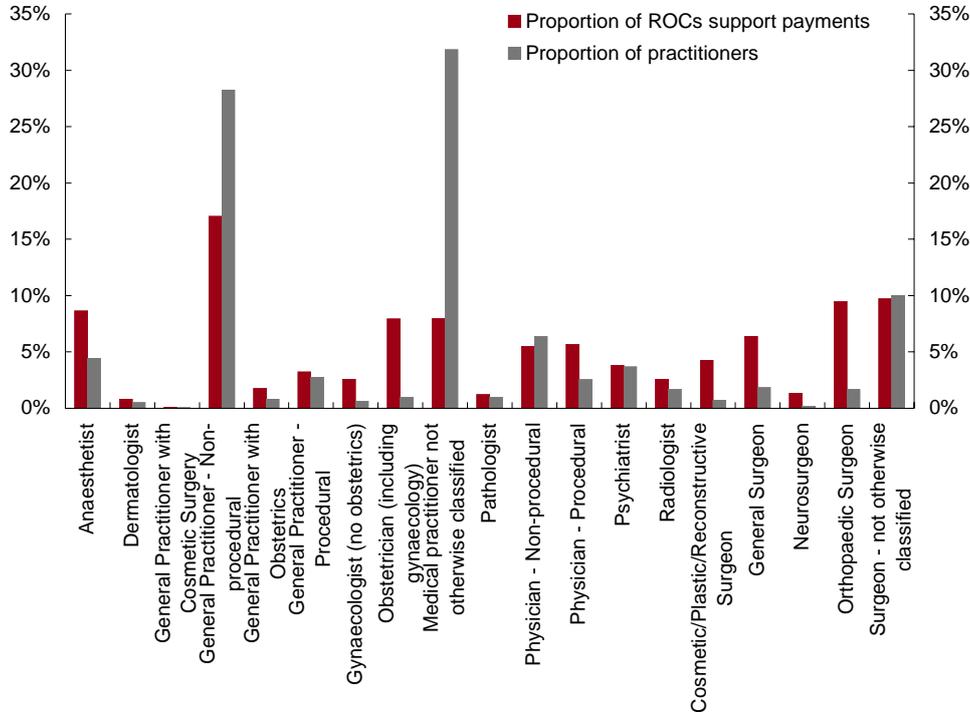
Figure 3: Contribution to ROC support payments by age



3.6.8 Figure 4 below summarises the contribution to ROC support payments by area of specialisation for all MIIs except AMIL. The specialty classifications provided by AMIL were not compatible with the standard ISA specialty codes.

3.6.9 Medical indemnity insurance premiums tend to be risk-based. Thus, doctors operating in risky areas of specialisation are likely to incur the highest premiums and, accordingly, the highest ROC support payment liabilities. Obstetricians (including gynaecology), cosmetic/plastic/ reconstructive surgeons, general surgeons, neurosurgeons and orthopaedic surgeons contribute the largest ROC support payments. Medical practitioners not otherwise classified include students, interns, trainees and hospital indemnified doctors who contribute the smallest ROC support payments.

Figure 4: Contribution to ROC support payments by specialization



Note: The specialty classifications used by AMIL are not the standard ISA specialty codes.

4. FINANCIAL MANAGEMENT OF THE ROC SCHEME

4.1 Future liabilities of the ROC Scheme

4.1.1 The estimation of the Commonwealth's liabilities under the ROC Scheme in future years is an inherently imprecise process. The operation of the ROC scheme is likely to be characterised by a small number of claims of highly variable size. It is not possible to predict the costs of the scheme with a high level of confidence. For example, the presence of a single very large claim in any given year could have a substantial effect on the total amount of ROC indemnity payments for that year.

4.1.2 This section sets out projections of ROC indemnity payments for the next 10 financial years. For the reasons given above, the projections should be regarded as indicative rather than definitive. In addition, the data problems referred to earlier in this report add to the uncertainty. The underlying assumptions and methodology are described in Appendix 4, with the calculations summarised in Table 13. Table 3 below sets out the projections, which are illustrated in Figure 5. The ROC Scheme is not expected to become mature in a cashflow sense for many years. The payments

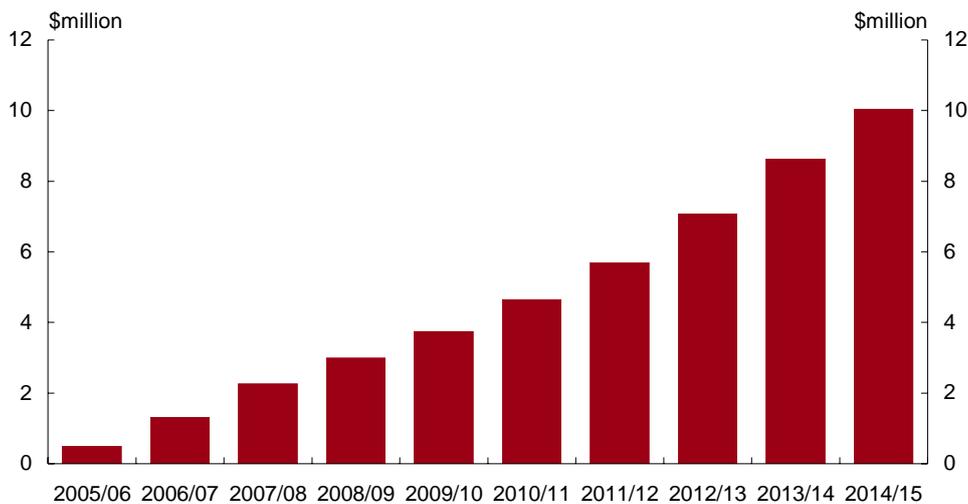
projected below are in nominal dollars and have not been discounted to current dollar values.

Table 3: Projected ROC indemnity payments

Year ending 30 June	Projected ROC indemnity payments \$'000*
2006	500
2007	1,306
2008	2,261
2009	2,992
2010	3,754
2011	4,644
2012	5,692
2013	7,087
2014	8,628
2015	10,039

* These projected payments do not include amounts payable under the ROC Claims and Administration Protocol.

Figure 5: Projected ROC indemnity payments



4.2 Notional Account

4.2.1 As noted above, it will take a number of years before the ROC Scheme matures and the payment patterns stabilise. Accordingly, this section of the report establishes a financial reporting framework and mechanism to ensure that the financial integrity of the ROC Scheme is maintained.

4.2.2 The ROC Scheme must be managed over a long time frame. As discussed previously, ROC indemnity payments are likely to be 'lumpy' in nature and immature in size for some years. ROC support payments will be received well in advance of ROC indemnity payments. As a result of the payment timing mismatch and the expected volatility in the ROC indemnity payment pattern, it is appropriate to have a system which enables proper tracking of the financial flows over time. Accordingly, this section establishes a ROC Scheme notional account (the Notional Account).

4.2.3 It is important to appreciate that the Notional Account is not an official Government account. Rather, it is a device established for the sole purpose of facilitating equity between doctors and taxpayers.

4.2.4 The Notional Account is credited with:

- ROC support payments; and
- notional interest.

Notional interest is credited to the Notional Account to ensure that doctors derive the proper benefit of the time value of money since ROC support payments are made well in advance of ROC indemnity payments. Notional interest is applied at the short-term bond rate for consistency with section 34ZS of the Medical Indemnity Act which requires interest at the short-term bond rate to be applied to the run-off cover credit balances of individual doctors.

4.2.5 On establishment of the ROC Scheme, the Government announced that it would fund the opening liability that was attributable to doctors who were already eligible for cover under the scheme at the time of its commencement. Accordingly, this obligation represents an asset of the Notional Account.

4.2.6 The Notional Account is charged with:

- ROC indemnity payments; and
- payments made under the ROC Claims and Administration Protocol.

4.2.7 The ROC Scheme 'operates after' the High Cost Claims Scheme (HCCS). The HCCS meets 50 per cent of the excess above \$300,000 of the cost of individual large claims. For example, for a claim which costs \$1 million, the HCCS will pick up:

$$50 \text{ per cent} \times (\$1,000,000 - \$300,000) = \$350,000$$

4.2.8 The ROC Scheme will also pay an amount to a MII or MDO to cover the indirect costs associated with handling claims. For the purposes of this report, it has been assumed that the ROC Scheme pays 5 per cent of the cost of each claim to cover indirect claims handling costs. The HCCS does not pay for indirect claims

handling costs. Table 4 below describes how an eligible \$1 million claim would be funded. The total amount paid of \$1,050,000 includes claim costs of \$1 million and indirect claims handling expenses of \$50,000.

Table 4: Funding sources for a \$1 million claim which is eligible for the ROC Scheme

Funding source	Amount
HCCS	\$350,000
ROC Scheme (direct claim costs)	\$650,000
ROC Scheme indirect claims handling expenses (5 per cent x \$1 million)	\$50,000
ROC Scheme (Total)	\$700,000

4.2.9 Appendix 3 provides more detail on claim amounts eligible under the ROC Scheme.

4.2.10 The liabilities of the ROC Scheme could be measured in a number of ways. It is normal for insurance-type liabilities to be measured on either a 'notified' or an 'occurrence' basis. On a notified basis, new liabilities would accrue to the ROC Scheme as new claims were notified. On an occurrence basis, new liabilities would accrue to the ROC Scheme at the time of the occurrence of the medical incidents which were expected to give rise to medical indemnity claims which would attract a ROC indemnity payment.

4.2.11 Under the occurrence model, liabilities are recognised more quickly than under the notified model. The occurrence model is more consistent with the notion that the ROC Scheme is ongoing. Accordingly, the occurrence model has been adopted for this report. The liabilities of the ROC Scheme are therefore taken as the present value of future ROC indemnity payments which relate to medical incidents which occurred before the balance date.

4.2.12 As noted earlier, subdivision E of Part 2 of the Medical Indemnity Act provides for repayment of ROC credit balance, should the ROC Scheme ever be wound up without alternative arrangements being put in place. Thus, should the ROC Scheme be wound up without alternative arrangements being put in place, a large part of the accumulated ROC support payment balance would become a liability of the ROC scheme. At the same time, since the ROC Scheme liabilities are being measured on an occurrence basis, some of the liabilities of the scheme would be released, partially offsetting this impact. However, for the purpose of this report, the ROC Scheme has been assumed to be ongoing and the whole amount of the accumulated ROC support payments has been taken to be available to meet ROC indemnity payments.

4.2.13 The liability estimates given in this report are central estimates. In broad terms, this means that they are intended to be equally likely to be too high or too low. In

particular, it is not intended that the liability estimates contain any margin for risk or prudence. Funding considerations for the ROC Scheme are not the same as for private sector insurance arrangements. The objective here is to manage the funding over the long-term. Since substantial volatility in the liability estimates is likely from time to time, periods of surplus and periods of deficit in the Notional Account might be expected. However, given the long funding time horizon that is appropriate for the scheme, a short-term deficit in the Notional Account is not a cause for concern. As a result of this, there is no strong reason to maintain a risk margin in the liability estimates.

4.2.14 Appendix 4 sets out the main assumptions and describes the methodology that was used to estimate the liabilities.

4.2.15 Table 5 below sets out the cashflow statement of the Notional Account for 2004-05.

Table 5: Cashflow statement of the Notional Account 2004-05

Cashflows — ROC Scheme Notional Account 2004-05	
Income	\$'000
ROC support payments (received 30 June 2005)	13,998
Notional interest	0
Expenses	
ROC indemnity payments	0
Administration cost payments to MIIs	0
Net cashflow	13,998

4.2.16 Table 6 below sets out the balance sheet of the Notional Account as at 30 June 2005.

Table 6: Balance sheet of the Notional Account as at 30 June 2005

Balance sheet — ROC Scheme Notional Account as at 30 June 2005	
Assets	\$'000
Net cashflow	13,998 ⁵
ROC support payments (receivable 31 December 2005)	9,389 ⁶
Government commitment to fund opening liability	9,000 ⁷
Total	<u>32,387</u>
Liabilities	
ROC indemnity payments related to medical incidents prior to 30 June 2005	30,325 ⁸
Claims handling expenses	2,049 ⁹
Total	<u>32,374¹⁰</u>

4.2.17 The Notional Account at 30 June 2005 is effectively in balance. However, no allowance has been made for accrued administrative cost liability which has accrued under the ROC Claims and Administration Protocol in the balance sheet since the amounts involved are subject to ongoing negotiation. Moreover, the balance sheet estimates are subject to high levels of uncertainty.

4.2.18 The estimated liability of the ROC Scheme at 30 June 2005 is based directly on estimates provided by industry actuaries. The liability to make ROC indemnity payments will be partly funded by the Government. As noted above, the Government will fund the costs of claims made by those practitioners who were eligible for cover at the commencement of the Scheme. It is not possible to estimate this component of the liability with any precision. However, for the purpose of this report, the overall liability (\$30.325 million) has been assumed to be split in the following way to give broad consistency with the results of our own model.

- \$9 million in respect of doctors eligible for the ROC Scheme as at 1 July 2004.

5 Received 30 June 2005.

6 AMIL payment received 31 December 2005 discounted to 30 June 2005.

7 Discussed in paragraph 4.2.17.

8 Based on estimates provided by industry actuaries.

9 Based on 5 per cent of 'grossed up' ROC indemnity payments (to allow for the impact of the HCCS).

10 Does not include an amount for administrative support payable under the ROC Claims and Administration Protocol.

Report on the costs of the Australian Government's ROC Scheme for medical indemnity insurers

- \$9 million in respect of doctors who became eligible for the ROC Scheme during the 2004-05 financial year.
- \$12 million in respect of practising doctors who were not eligible for the ROC Scheme as at 30 June 2005.

4.2.19 The actual value of the Government obligation will not be known for a number of years. Estimates will become more reliable with time. The apportionment of the liability is very subjective. However, we regard the approach taken as satisfactory for the current purpose.

4.2.20 As actual experience unfolds and ROC indemnity payments are made, it will be necessary to attribute these payments accurately to either the opening liability (Government funded) or the new liability (doctor funded). Indeed, at future reviews, separate accounting of the Government funded and doctor funded components of the ROC Scheme is likely to be appropriate. Both components have been combined at this first review to give an overall picture of the scheme.

4.2.21 Finally, it is appropriate to provide a benchmark projection of the liabilities of the ROC Scheme. Table 7 below sets out estimates of the liabilities of the Notional Account at the end of each of the next five financial years. The purpose is to illustrate the short-term development of the Scheme. There is very substantial uncertainty in these estimates. The numbers shown are in nominal dollars and have not been discounted to give values in today's terms.

Table 7: Projected balance sheet liabilities of the Notional Account

Year ending 30 June	Liability (\$'000)	New accrual (\$'000)	Interest cost (\$'000)	Payments (\$'000)
2005	30,325	-	-	-
2006	46,025	14,623	1,577	500
2007	62,686	15,574	2,393	1,306
2008	80,271	16,586	3,260	2,261
2009	99,117	17,664	4,174	2,992
2010	119,329	18,812	5,154	3,754

4.3 Actuarial management

4.3.1 It is appropriate that the ROC Scheme be subject to ongoing actuarial management.

4.3.2 Regular review of the costs and notional assets of the scheme will allow the ROC support payment rate to be adjusted from time to time, if necessary. This report has described a framework for the valuation of ROC Scheme liabilities and established

Report on the costs of the Australian Government's ROC Scheme for medical indemnity insurers

the Notional Account. It is intended that the valuation and accounting framework be applied at each future annual review of the ROC Scheme.

A handwritten signature in black ink, appearing to read 'Peter Martin', with a stylized flourish extending to the right.

Peter Martin FIAA
Australian Government Actuary

14 February 2006

APPENDIX 1: ROC SUPPORT PAYMENTS

A.1.1 ROC support payments are paid to Medicare Australia (formerly the Health Insurance Commission) in the form of an annual lump sum imposed as a tax on each MII from 1 July 2004. The lump sum is intended to cover the cost of claims and the MII's administration costs.

A.1.2 The amount of support payments is calculated as a percentage of premium income received from contributing doctors. The calculation rules are set out in the ROCSPA and regulations. The tax imposed on each MII is the applicable percentage of the insurer's premium income (section 6) for the applicable contribution year ending on 30 June or an alternative date specified in the regulations (section 5).

A.1.3 All MIIs except for AMIL were required to remit their first ROC support payments on 30 June 2005. Since AMIL's policy year is a calendar year, it was not required to remit ROC support payments until 31 December 2005.

A.1.4 Under section 7, a MII's premium income for the purpose is the sum of all of the premiums paid to the insurer for medical indemnity cover provided for medical practitioners, reduced according to the formula:

Premium income equals

Net premium minus Net premium × Applicable percentage ÷ (1 + Applicable percentage)

A.1.5 Net premium is calculated according to section 7 as follows:

- sum of all premiums paid to the insurer during the operation of the ROC Scheme for medical indemnity cover provided for medical practitioners (including subsidy payments made to the insurer on behalf of medical practitioners to assist with the cost of purchasing medical indemnity cover under s 43(1) Medical Indemnity Act) (sub-s (1));
- minus the amount of GST payable (sub-s (2)(a)) and the amount of stamp duty payable (sub-s (2)(b)) in relation to the premiums;
- plus/minus other payments specified in the regulations.

A.1.6 The applicable percentage is specified in the regulations as 8.5 per cent for all insurers except AMIL who has a higher percentage of 9.5625 per cent in place for the next four years.

Report on the costs of the Australian Government's ROC Scheme for medical indemnity insurers

A.1.7 The effect of all of this is that the ROC support payment is currently calculated as:

Net premium × 8.5 per cent ÷ 1.085 for all MIIIs except AMIL, and

Net premium × 9.5625 per cent ÷ 1.095625 for AMIL.

APPENDIX 2: ELIGIBLE PRACTITIONERS AND ROC SCHEME CONTRACTS

Eligible practitioners

A.2.1 Eligible doctors are medical practitioners who satisfy one or more of the following eligibility criteria at the time the claim (or medical incident) is first notified to the MII or MDO (section 34ZB(2) of the Medical Indemnity Act):

- 65 years or older and permanently retired from private medical practice;
- has not engaged in private medical practice during the preceding three years and states that he/she will not return to medical practice;
- dead (provided that a claim can be made against the deceased's estate through a legal representative);
- ceased practice due to permanent disability (subsection (4B));
- ceased practice because of maternity (subsection (4A));
- is specified in the *Medical Indemnity Regulations 2003* (regulation 12) to be eligible:
 - overseas trained doctors who held a 422 or 457 visa and who have ceased medical practice and do not reside in Australia;
 - doctors who only provide gratuitous services and who are 65 or older, or have not been in paid practice for the previous three years, or are on maternity leave or are permanently disabled; and
 - public sector doctors who are 65 or older and have retired permanently from medical practice, or have not engaged in medical practice for the previous three years.

Provision and notification of compulsory run-off cover

A.2.2 The last medical indemnity insurer is required to provide run-off cover to an eligible doctor under section 26A of the PSPS Act.

A.2.3 The compulsory run-off cover must encompass the same nature and range of incidents as the last medical indemnity cover held by the eligible doctor (subsection 26A(4)(b)).

A.2.4 Section 26D compels MIIIs to notify eligible practitioners of:

(i) the nature and range of incidents encompassed by the compulsory run-off cover; and

(ii) the terms and conditions on which it is provided.

The compulsory run-off cover is taken to be a contract of insurance between the MII and the eligible practitioner for the purposes of the PSPS Act (section 26E).

APPENDIX 3: ROC SCHEME ELIGIBLE CLAIMS

A.3.1 The legislation defines claims broadly. Claims need not involve legal proceedings. Claims may include civil claims for negligence, administrative proceedings, disciplinary proceedings (including those performed by a professional body) and inquiries or investigations into conduct (subsection 4(1) of the Medical Indemnity Act).

A.3.2 The ROC Scheme applies to claims notified to the MII on or after 1 July 2004 by eligible doctors. It indemnifies MIIs and MDOs in relation to eligible claims made against eligible medical practitioners. The Commonwealth is liable to pay run-off cover indemnities in relation to eligible claims (section 34ZC) regardless of whether the MII or MDO has sought private reinsurance (section 34ZF).

A.3.3 A run-off claim is eligible under subsection 34ZB(1) if

- it is made by an eligible practitioner under subsection 34ZB(2) (see Appendix 2);
- it relates to incident(s) occurring in connection with a person's practice as a medical practitioner (see paragraph 34ZB(1)(b));
- at the time of the incident a contract of insurance or an arrangement with an MDO provided medical indemnity cover in accordance with the *Medical Indemnity (Prudential Supervision and Product Standards) Act 2003* (PSPS Act) for the person (see paragraph 34ZB(1)(c)); and
- the person is indemnified for the claim in accordance with section 26A of the PSPS Act or incident-occurring based cover provided by an MDO (paragraph 34ZB(1)(e)).

A.3.4 The practical implementation of these eligibility rules will be refined and further codified as they are applied over time.

A.3.5 Applications for ROC indemnity payments must be notified to Medicare Australia (section 36 of the Medical Indemnity Act). They are paid by the CEO of Medicare Australia before the end of the month that immediately follows the month in which the MII applies for the indemnity (section 37).

A.3.6 The ROC Scheme operates after the High Cost Claims Scheme (HCCS). Thus, part of the cost of eligible large claims is first met by the HCCS with the rest being picked up by the ROC Scheme (subsection 34ZH(2)). The HCCS meets 50 per cent of total costs incurred in relation to an eligible ROC claim exceeding \$300,000.

APPENDIX 4: METHODOLOGY, ASSUMPTIONS AND UNCERTAINTY

Components of the ROC Scheme costs

A.4.1 It is helpful to consider two relevant pools of practitioners:

- doctors eligible for the ROC Scheme as at 30 June 2005; and
- doctors practising as at 30 June 2005.

A.4.2 ROC Scheme liabilities for the first group relate solely to medical incidents occurring prior to 30 June 2005. We have relied directly on information provided by actuaries of the MIIs to estimate these liabilities.

A.4.3 ROC Scheme liabilities for the second group relate to both:

- medical incidents occurring prior to 30 June 2005. We have relied directly on information provided by actuaries of the MIIs to estimate these liabilities; and
- medical incidents occurring after 30 June 2005. These new liabilities were projected using a model developed for the purpose within this office.

Information provided by the MIIs

A.4.4 We have relied directly on information provided by actuaries of the MIIs to estimate the ROC Scheme liabilities related to all medical incidents occurring prior to 30 June 2005.

A.4.5 Information was provided by the MIIs and MDOs in relation to projected future payments for:

- ROC claims notified as at 30 June 2005; and
- ROC incurred-but-not-reported (IBNR) claims as at 30 June 2005.

A.4.6 Table 8 below summarises the estimated accrued ROC Scheme liabilities as at 30 June 2005. The liabilities are divided into those attributable to claims notified as at 30 June 2005 and those attributable to IBNR claims as at 30 June 2005.

Table 8: ROC Scheme liabilities related to medical incidents prior to 30 June 2005

Estimated liabilities for future ROC indemnity payments made by MIIIs in relation to claims notified as at 30 June 2005.	\$1.5 million
Estimated future ROC indemnity payments in relation to IBNR claims as at 30 June 2005.	\$28.9 million
Total ROC Scheme liabilities.	\$30.3 million*

* Numbers do not add due to rounding.

A.4.7 The Government will fund the ROC claims cost of those practitioners who were eligible for cover at the commencement of the scheme. It is not possible to estimate this component of the liability with any precision. However, for the purpose of this report, the 30 June 2005 liability has been assumed to be split in the following way to give broad consistency with the results of our own model.

- \$9 million in respect of doctors eligible for the ROC Scheme as at 1 July 2004.
- \$9 million in respect of doctors who became eligible for the ROC Scheme during the 2004-05 financial year.
- \$12 million in respect of practising doctors who were not eligible for the ROC Scheme as at 30 June 2005.

A.4.8 The actual value of the Government obligation will not be known for a number of years but estimates will become more reliable with time.

A.4.9 Projected payments in relation to medical incidents occurring before 30 June 2005 were aggregated directly from estimates provided by actuaries of the MIIIs.

Description of the model used to project the accrual of new ROC Scheme liabilities during 2005-06

A.4.10 The accrual of new ROC Scheme liabilities during the 2005-06 financial year relates to doctors practising as at 30 June 2005 and medical incidents occurring after 30 June 2005. The projected accrual of ROC Scheme liabilities was based on a model developed for the purpose.

A.4.11 The approach involved projecting the expected future ROC indemnity payments for each doctor who was practising as at 30 June 2005. Projection of indemnity payments entailed the projection of:

- incidents which will result in a claim;

- the delay involved in notification of claims;
- the cost of claims after allowing for the HCCS;
- the likelihood of eligibility for the ROC Scheme at the time a claim is notified; and
- the delay involved in the payment of notified claims.

ROC claims

Components of claim cost

A.4.12 For the purposes of the model, a ROC claim includes any claim notified and finalised at direct cost to the MII. Claim costs include all costs which are directly attributable to the claim. Internal claims administration costs are dealt with separately.

A.4.13 Directly attributable claim costs include damages, plaintiff legal costs to the extent that they are awarded, and defence costs to the extent that they are directly attributable to the claim.

A.4.14 Internal claims administration costs have been estimated at 5 per cent of the direct cost of each claim for the purpose of this report. Where a ROC claim is partly covered by the HCCS, the allowance for claims administration paid under the ROC Scheme is assumed to be 5 per cent of the total claim cost, including the portion covered by the HCCS.

Claim frequency assumptions

A.4.15 Claim frequency and claim size assumptions were made in light of information provided by the actuaries of the MIIs.

A.4.16 The overall claim frequency was assumed to be 5 per cent. That is, on average each 'at-risk' doctor was assumed to have a 5 per cent chance of being involved in a medical incident in the next year which will result in a future medical indemnity claim. Individual claim frequencies were adjusted based on premium as discussed below.

A.4.17 Doctors with standard medical indemnity premiums of less than \$1,500 were excluded from the analysis in order to ensure that only genuine 'at-risk' doctors were the focus of the investigation. The excluded group contained students, interns, trainees and hospital indemnified doctors in some of the data provided by the MIIs. In all 53,079 practising doctors have some standard premium, and after excluding 20,425 with premiums of less than \$1,500 we were left with 32,654 'at-risk' doctors and we have

set our claim frequency assumption at 5 per cent with the intention of being consistent with this.

Adjustment to individual claim frequencies based on premium

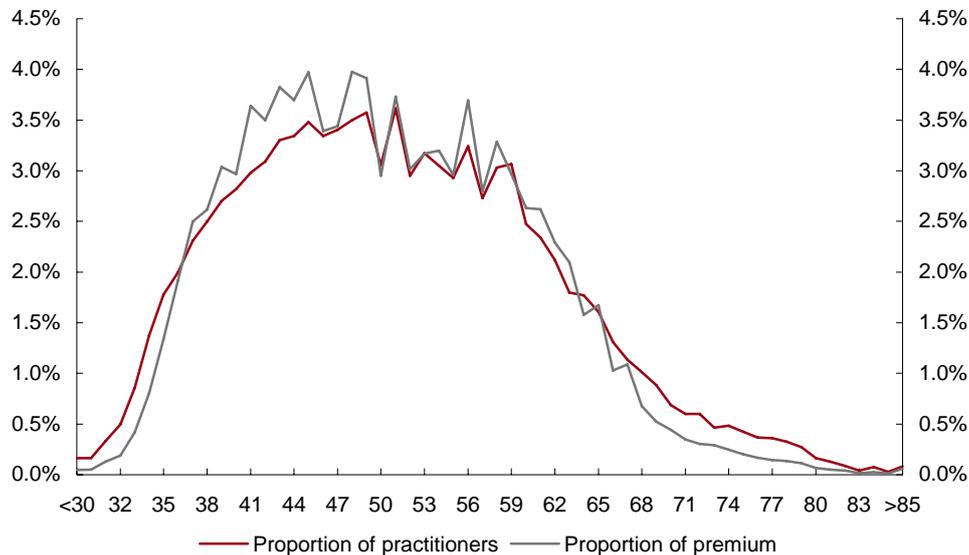
A.4.18 The likelihood of future notifications of ROC claims was projected according to the assumed 'riskiness' of each individual doctor. The risk of medical indemnity claims posed by each practitioner was determined based on risk categorisation. Doctors were categorised according to specialisation, age, gender and MII.

A.4.19 The average premium for each risk group was used as a proxy for the risk of medical indemnity claims. The claim frequency for each group was multiplied by the ratio of the premium for the group and the premium of the entire cohort of 'at-risk' doctors.

A.4.20 Although insurance premiums are broadly determined in line with claim risk, the premium of a group is at best an imprecise proxy for risk. For example, market and financial considerations affect premiums charged. However, given the data available, relative premiums have been assumed to be a reasonable means of categorising doctors according to their risk of medical indemnity claims for the purposes of this model.

A.4.21 Insurance premiums tend to diminish for doctors towards retirement age. This supports the suggestion that doctors tend to wind down their practice hours and possibly perform fewer risky medical procedures (for example, surgery) as they approach retirement. The possible reduction in risk towards retirement is apparent from the pattern of relative premiums for 'at-risk' male doctors shown in Figure 6 below. The pattern is less obvious for females, given the low proportion of females in the oldest cohorts.

Figure 6: Relative standard premiums by age for male doctors



* The graph includes all male practitioners with premiums of at least \$1,500 from all MIIs except AMIL. Gender information was not available for AMIL practitioners.

A.4.22 The model does not impose an assumed pattern of 'winding down of risky practice' with age. Reduction in claim risk is accounted for in the model to the extent that it is reflected in diminishing premiums.

Claim size assumptions

A.4.23 Claim sizes were assumed to increase with the delay to notification, on the basis that claims which take longer to report tend to be bigger on average for example, cerebral palsy cases.

A.4.24 The assumed claim reporting pattern is shown in Table 9 below. Claim sizes presented in the table do not include allowance for inflation or superimposed inflation. Adjustment for inflation and superimposed inflation is discussed below.

A.4.25 The claim reporting pattern is based on the reporting patterns provided by two of the MIIs.

Table 9: Claim reporting and size pattern

Development year	Proportion of number of claims notified (per cent)	Gross average claim size (\$'000)*
1	19.8	70
2	20.3	80
3	13.4	80
4	18.8	100
5	9.0	150
6	5.4	150
7	2.9	150
8	2.4	150
9	1.7	150
10	1.8	150
11	1.4	150
12	1.1	150
13	0.8	150
14	0.4	400
15	0.2	400
16	0.1	400
17	0.1	400
18	0.1	400
19	0.1	400
20	0.2	400

* Gross average claim sizes presented in the table are intended to be in 2005 dollars and do not include allowance for inflation and superimposed inflation.

A.4.26 Claims cost net of high cost claim indemnities is calculated assuming that the HCCS threshold will change such that a constant proportion of the gross average claim size will be met by the HCCS. Thus, for simplicity, the HCCS threshold is assumed to increase in line with claims inflation over time. The model effectively assumes that 24 per cent of the total discounted claims cost will be met by the HCCS and 26 per cent of the ROC discounted claims cost will be met by the HCCS.

A.4.27 The projected ROC claims cost is very sensitive to the proportion of claims which are assumed to be reported late. The longer the delay between the incident and the claim, the greater the likelihood that a doctor will be eligible for the ROC Scheme at the time the claim is notified. Thus, a small change in the assumed proportion of late reported claims can have a significant impact on the estimated ROC claims cost.

Probability of a claim falling under the ROC Scheme

A.4.28 The model involved projection of the proportion of the total accrual of liabilities which falls under the ROC Scheme.

A.4.29 A practitioner can become eligible for the ROC Scheme by reason of

- retirement at 65 years and older;
- disablement;
- death;
- maternity;
- resignation; or
- satisfaction of other eligibility criteria specified in the regulations.

A.4.30 The probability of becoming eligible for the ROC Scheme was estimated for each practitioner based on their age as at 30 June 2005 and their sex. Note that practitioners do not become eligible by means of resignation until three years have passed since cessation of practice.

A.4.31 The estimated likelihood of doctors becoming eligible for the ROC Scheme was overlaid on the projected claim notifications to give the projected ROC claim notifications for each doctor. The expected notified claims cost was multiplied by the likelihood of eligibility in each future year, and summed across all practitioners to arrive at the expected cost of ROC claims notified in that year.

A.4.32 In other words, the total ROC claim notifications were calculated as the scalar product of the vector of claim notifications and the vector of probabilities of ROC Scheme eligibility for each practising doctor in each future year.

A.4.33 It was assumed that on average doctors who become eligible for the ROC scheme do so half-way through each financial year.

Demographic assumptions

A.4.34 The probabilities of death and disablement were assumed to be an increasing multiple of the probabilities of death in Australian Life Tables 2000-02 (ALT 2000-02). The probabilities of death were assumed to be 50 per cent of ALT 2000-02 until age 65 whereafter they were assumed to be 90 per cent of ALT 2000-02. The probabilities of permanent disability were assumed to be an increasing multiple of ALT 2000-02 from 20 to 40 per cent from age 25 to 64, and 0 from 64 onwards.

A.4.35 The assumed probabilities of maternity leave were derived assuming that female doctors each have an average of 1.5 children between ages 28 and 43 and that they take one year of maternity leave for each child. The probabilities of alternative means of ROC Scheme eligibility (particularly resignation and retirement) were inferred from the age distribution of practising doctors.

A.4.36 The probabilities of resignation were assumed to be 0.5 per cent between ages 39 and 51, increasing linearly to 1 per cent at age 56, increasing to 6 per cent at age 60, and increasing linearly to 10 per cent at age 64. The probabilities of retirement were assumed to be 13 per cent between ages 65 and 70, increasing linearly to 41 per cent at age 84. The probabilities of retirement were assumed to be 100 per cent for ages 85 and above, given the negligible effect on the results.

A.4.37 It is instructive to present the probabilities that a practising male doctor will be eligible for the ROC Scheme in future years. The decrement assumptions are summarised in Table 10 in the form of assumed probabilities of being eligible for the ROC Scheme at the end of each of the next 10 financial years for males.

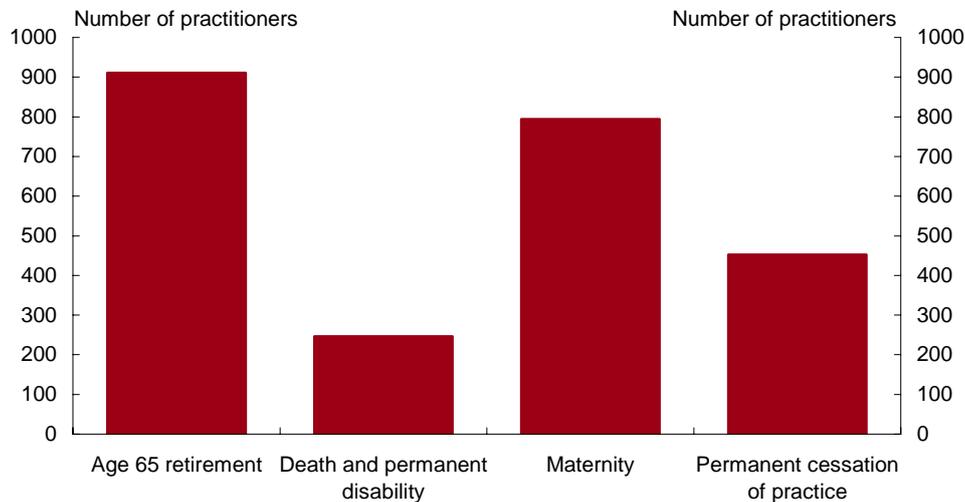
Table 10: Assumed probabilities of eligibility for the ROC Scheme over the next 10 financial years for male doctors

Year ending 30 June	Age at 30 June 2005						
	20	30	40	50	60	70	80
2006	0.0008	0.0009	0.0012	0.0026	0.0074	0.1510	0.3876
2007	0.0016	0.0017	0.0025	0.0054	0.0157	0.2982	0.6403
2008	0.0024	0.0026	0.0039	0.0086	0.0248	0.4356	0.7983
2009	0.0032	0.0035	0.0104	0.0169	0.0934	0.5590	0.8925
2010	0.0040	0.0045	0.0170	0.0256	0.1672	0.6656	0.9458
2011	0.0048	0.0054	0.0236	0.0355	0.3528	0.7543	1.0000
2012	0.0056	0.0064	0.0303	0.0466	0.5043	0.8254	1.0000
2013	0.0064	0.0074	0.0371	0.0590	0.6260	0.8801	1.0000
2014	0.0073	0.0085	0.0441	0.0726	0.6811	0.9206	1.0000
2015	0.0081	0.0097	0.0511	0.0875	0.7286	0.9494	1.0000

A.4.38 The model is very sensitive to the assumed resignation and retirement decrements and the calibration of these decrements is very important. The model is somewhat less sensitive to death and permanent disability decrements since resignation and retirement are assumed to be more likely means of eligibility. The model is not particularly sensitive to maternity decrements as doctors on maternity leave are only eligible for the ROC Scheme for the period of leave which is assumed to be one year.

A.4.39 Figure 7 below depicts the number of doctors projected to become eligible for the ROC Scheme by various means during the 2005-06 financial year. Although doctors will become eligible for the ROC scheme during 2005-06 by way of permanent cessation of practice (having ceased practice during 2002-03), the number below refers to doctors who will actually become eligible during 2008-09.

Figure 7: Projected entries to the ROC Scheme based on decrement assumptions



A.4.40 The number of doctors projected to enter the ROC Scheme by reason of retirement and maternity leave was substantially higher than the number provided by the insurers for the 2004-05 financial year (see Figure 2).

A.4.41 It is possible that the information provided by the MIIIs under-represented the number of doctors who became eligible for the ROCs scheme during 2004-05 by way of age retirement. Alternatively, the assumed retirement rates may be too high. The definition and concept of retirement might be less clear-cut for a private medical practitioner than for, say, a general workforce employee. This point will require close scrutiny in future years, and also in the administration of the ROC Scheme.

A.4.42 In the case of maternity leave, it may be that the information provided by the insurers under-represented the number of doctors taking maternity leave, that doctors have less children than the general population, or that doctors who become pregnant are less likely to take maternity leave for a complete premium year. However, the assumed probabilities of maternity leave have not been adjusted given that they do not have a major effect on the estimate of the accrual of ROC Scheme liabilities during 2005-06.

A.4.43 Where the date of birth was not available for a doctor, an age was assigned randomly according to the age distribution of all 'at-risk' doctors. Information on the gender of AMIL practising doctors was not available. A gender was randomly assigned according to the gender distribution of all 'at-risk' doctors of the same age.

Payment patterns, inflation and discounting

A.4.44 ROC indemnity payments in relation to medical incidents occurring after 30 June 2005 were projected assuming the payment pattern in Table 11 below.

A.4.45 This simple pattern has an average delay of about four years which is consistent with our understanding of typical experience.

Table 11: Payment pattern assumed

Delay from notification to payment (years)	Proportion of claim costs paid (per cent)
1	5
2	10
3	10
4	20
5	20
6	20
7	5
8+	10

Economic assumptions

A.4.46 Medical indemnity claim costs tend to increase at a faster rate than general inflation. Claim payments were projected to increase in line with wage inflation plus superimposed claim cost inflation.

- Wage inflation was assumed to be 4 per cent per annum. This is not inconsistent with general expectations of wage growth.
- Superimposed inflation was assumed to be 2.5 per cent per annum. Superimposed inflation refers to the tendency for medical indemnity claim amounts to increase at rates faster than general inflation. Bursts of superimposed inflation have been observed in the past. Despite this, superimposed inflation is typically allowed for with a constant assumption. For this exercise, an allowance of between 2 per cent and 5 per cent per annum might be reasonable. We have adopted an assumption towards the lower end of this range, having regard to the potential impact of the various tort reforms that have taken place over the last few years.

A.4.47 Claim payments were discounted at a rate of 5.2 per cent per annum. This is broadly consistent with the yield on Commonwealth bonds at 30 June 2005.

Data summarising the cohort of 'at-risk' doctors

A.4.48 Table 12 summarises the age distribution of the cohort of 'at-risk' doctors, with the total premium representing a proxy for risk of medical indemnity claims for each age group.

Table 12: Cohort of 'at-risk' doctors

Age at 30 June 2005	Number 'at-risk'	Total premium (\$'000)	Proportion males (per cent)
<30	56	199	52
30-34	1230	5,331	56
35-39	3688	29,979	57
40-44	5277	48,539	59
45-49	5907	51,714	60
50-54	5459	46,816	62
55-59	4764	43,811	69
60-64	3219	31,848	72
65-69	1728	14,147	75
70-74	751	4,188	82
75-79	425	1,902	84
80-84	118	448	91
85-	32	170	88
Total	32,654	279,090	65

Estimate of the projected accrual of new ROC liabilities during the 2005-06 financial year provided by the actuaries of the MIIIs

A.4.49 An estimate of the projected accrual of ROC liabilities during the 2005-06 financial year was provided by each of the actuaries of the MIIIs for their particular MII. The estimates provided summed to \$9.8 million, which is less than the estimate of \$14.6 million based on our model. Our estimate is roughly 10 per cent of the estimated accruing claims cost for 2005-06. Estimates provided by industry actuaries varied from less than 3 per cent to around 10 per cent of estimated claims cost for individual insurers.

A.4.50 The estimates of the projected ROC scheme accrual are particularly sensitive to the assumed proportion of late reported claims. Industry estimates appear to be quite different from one another, varying from about 3 per cent to 10 per cent of claims cost. However, it is worth noting that these apparently very different estimates represent an assumed difference between non-ROC scheme claim costs of about only 7 per cent. Thus, the high estimate of 10 per cent is consistent with an assumption that

90 per cent of the claims cost will fall outside of the ROC scheme while the low estimate of 3 per cent is consistent with an assumption that 97 per cent of the claims cost will fall outside of the ROC scheme.

Projection of future ROC Scheme costs

A.4.51 Table 13 below summarises the first 10 years ROC indemnity payments which were aggregated to derive the projected ROC Scheme costs in future years.

Table 13: Calculation of projected ROC indemnity payments

Year ending 30 June	Medical incidents pre 1 July 2005			Medical incidents post 30 June 2005		Grand total (\$m)
	Notified as at 30/6/2005 (\$m)	IBNR as at 30/6/2005 (\$m)	Total (\$m)	Total (\$m)		
2005/06	0.2	0.3	0.5	0.0	0.5	
2006/07	0.3	1.0	1.3	0.0	1.3	
2007/08	0.3	1.8	2.1	0.2	2.3	
2008/09	0.2	2.4	2.6	0.4	3.0	
2009/10	0.2	2.6	2.8	0.9	3.7	
2010/11	0.2	2.8	2.9	1.7	4.6	
2011/12	0.1	2.7	2.9	2.8	5.7	
2012/13	0.1	2.8	2.9	4.2	7.1	
2013/14	0.1	2.7	2.7	5.9	8.6	
2014/15	0	2.5	2.5	7.5	10.0	

* Note that the costs of notified and IBNR claims do not always sum to the total cost of medical incidents pre 1 July 2005 due to rounding.

Uncertainty in relation to liability projections

A.4.52 The projected ROC indemnity payments summarised in Table 13 are subject to uncertainty which relates to:

- data in relation to the claiming behaviour of eligible doctors;
- substantial random variation associated with medical incidents and the notification of claims from year to year;
- calibration of the model claim size and claim frequency assumptions to the underlying claim process (medical indemnity liabilities are characterised by very few claims associated with large random variation such that a wide range of results can be obtained with equal statistical significance);

- the possibility that doctors approaching retirement might cut down on their practice hours and possibly engage in less 'risky' practice (for example, less surgery) to a greater extent than allowed for in the model;
- sensitivity of the model to the proportion of late-reported claims;
- sensitivity of the model to the decrement assumptions;
- the possibility that not all ROC Scheme eligible claims have been identified and that recoveries will be more diligently pursued later in the claim process; and
- recent tort reforms in a number of jurisdictions with the possible effect of 'bringing forward' claims and distorting recent claim experience.

A.4.53 The information provided by the actuaries of the MIs and MDOs relied on broadly similar valuation models. The range of assumptions adopted by industry actuaries reflects the substantial uncertainty involved in estimating liabilities of the ROC Scheme.

A.4.54 It must be emphasised that different results can be obtained from different yet equally plausible models and assumptions. Again, this is a common issue with liabilities of this nature.