THE **HEALTH**

INSURANCE

AUTHORITY

Risk Equalisation

Guide to the Risk Equalisation Scheme, 2003 as prescribed in Statutory Instrument No. 261 of 2003.

July 2003

The intention of The Health Insurance Authority (the Authority) in publishing this document is to give general guidance on the Risk Equalisation Scheme, 2003. The document is not a legal interpretation. Its purpose is to present, in non-legal language, an outline of the roles of the Minister for Health and Children (the Minister), the Authority and insurers, and also the procedures set out in the Scheme.

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1. Introduction

The role of The Health Insurance Authority (the Authority) in relation to risk equalisation, as set out in the Health Insurance Acts, 1994 - 2003 and the Risk Equalisation Scheme, 2003 (the Scheme), is a significant one. This role includes responsibilities in relation to recommending whether or not risk equalisation payments will be commenced and, if payments are commenced, administering the Scheme and reporting on the Scheme to the Minister for Health and Children (the Minister) and the Oireachtas.

The Authority's responsibilities in relation to recommending whether or not payments under the Scheme should be commenced are such that the Authority believes that it is unlikely that, in the short term at least, risk equalisation payments can be commenced without a recommendation from the Authority to so do.

In this document we will describe the regulatory structure of the Irish private health insurance market and explain why, in this context, the commencement of risk equalisation payments might be required. We will also explain how the Scheme prescribed will operate. In doing this we will outline the roles of the Minister, the Authority and insurers and explain how risk equalisation calculations would operate in practice.

2. Evolution of the Private Health Insurance Market in Ireland

The system of private health insurance was formally inaugurated in 1957, when, as a result of the Voluntary Health Insurance Act, 1957, the Voluntary Health Insurance Board (later to become Vhi Healthcare) was established. Between 1957 and 1994, the provision of private health insurance in Ireland was subject to the terms of this Act. During this time Vhi Healthcare were the only providers of private health insurance in Ireland, apart from a number of restricted membership undertakings that may only provide cover to members of certain groups (these groups are normally vocational, e.g. the Garda Síochána).

Following the introduction of the European Council Directive 92/49/EEC (the Third Non Life Directive) in 1992, the Health Insurance Act, 1994 was introduced. This Act made provision for the opening of the health insurance market to competition and gave legal effect to the principles of community rating, open enrolment, lifetime cover and minimum benefits. The Act also included provision for the establishment of the Authority and for a Risk Equalisation Scheme. BUPA Ireland was the first to enter the health insurance market following the Act (in 1997) and remains the sole competitor to Vhi Healthcare in Ireland.

Risk Equalisation Regulations were introduced in 1996. The 1996 Regulations provided for the commencement of risk equalisation payments when the risk differences between health insurers reached a specified level. Payments were never commenced under these Regulations.

From 1997 the Risk Equalisation Regulations received significant analysis. An independent group, the Advisory Group on the Risk Equalisation Scheme, was established by the Minister to assess the 1996 Regulations. The Minister also engaged in a consultation process as part of the preparatory work on the White Paper on "Private Health Insurance". The White Paper was published in 1999 and set out the Government's policy objectives and proposals regarding, *inter alia*, the role of private health insurance in the overall healthcare system. During this time, the 1996 Risk Equalisation Regulations were revoked.

The Advisory Group strongly recommended that the Authority be established and the White Paper reaffirmed the Government's intention to so do.

The Authority was established on 1 February 2001. The Authority's role, as set out in the Health Insurance Act, 1994 was amended by the Health Insurance (Amendment) Act, 2001. The role of the Authority as set out in this legislation includes, *inter alia*, specific responsibilities with regard to risk equalisation as well as a provision that the Authority may advise the Minister on matters relating to the functions of the Minister under the Health Insurance Acts, 1994 –2003, the functions of the Authority and health insurance generally.

On 1 July, 2003 a new Risk Equalisation came into effect. This Risk Equalisation Scheme differs significantly from the Scheme defined in 1996. One difference is that the 2003 Scheme invests significant responsibilities in an independent statutory body

(the Authority) in relation to the operation of the Scheme and in particular and crucially in relation to whether or not payments under the Scheme will commence.

3. The Current Regulatory Structure

The key principles of community rating, open enrolment, lifetime cover and minimum benefit have played a crucial role in making private health insurance cover accessible to a substantial proportion of the Irish population and, in particular, to higher risk groups such as the elderly and the chronically ill. The Authority supports these principles.

Community rating means that the level of risk that a consumer poses to an insurer does not affect the premium paid. In other words, everybody is charged the same premium for a particular plan, irrespective of age, gender and the current or likely future state of their health. Exceptions are made in the cases of children under 18, students in full-time education between the ages of 18 and 23, and members of group schemes.

Open enrolment is a practice whereby all applicants for private health insurance must be accepted by a health insurer regardless of their risk status, subject to maximum age limits and prescribed waiting periods. An insurer may not refuse cover to anyone under the age of 65 (or over the age of 65 provided that they have been without cover for less than 13 weeks).

Lifetime cover guarantees health insurance consumers the right to renew their policies irrespective of factors such as age, risk status or claims history. Under normal circumstances, an insurer is obliged to renew an insured person's policy and may not terminate the policy.

Minimum Benefit Regulations were introduced by the Minister for Health and Children in 1996, which set out minimum levels of benefit that must be provided by all insurance contracts sold in Ireland that provide cover for in-patient hospital services. Given the complex and specialist nature of private health insurance products, in the absence of regulation, consumers could be sold policies that do not provide a sufficiently comprehensive level of cover.

The Irish private health insurance regulatory system is designed to benefit consumers, by ensuring that private health insurance does not cost more for those who need it most. Under the current system, community rating relies on inter-generational solidarity, which means that younger, healthier people effectively subsidise older people, who have higher claims, the underlying premise being that they (the younger people) themselves will be subsidised by future generations. This happens because people pay more than is actuarially required in their younger years, but less than actuarially required in their later years. The current system is also unfunded, in that there is no fund built up over an insured person's lifetime to cover their expected claims cost; rather the money contributed by all of the insured people to a particular insurer is pooled and the cost of claims in any given year taken from that pool.

Risk equalisation is a process that aims to equitably neutralise differences in insurers' costs that arise due to variations in the health status of their members. Risk equalisation results in cash transfers from insurers with lower risk members to insurers with higher risk members. It involves transfer payments between health

insurers to spread some of the claims costs of high-risk members amongst all the private health insurers in the market in proportion to their market share.

In 2002, the Authority engaged in a consultation process in order to seek representations on issues relating to risk equalisation from stakeholders and interested parties in the private health insurance market in Ireland and in particular to seek comments on how the Authority should exercise its responsibilities in relation to risk equalisation. Submissions made during this process and the policy paper published by the Authority at the end of this process can be found on the Authority's website: www.hia.ie.

Some of those who made submissions favouring the introduction of risk equalisation argued that community rating is based on a principle of intergenerational solidarity whereby the claims of the whole community are funded by the premiums of the whole community. The proponents of risk equalisation argue that if the community is split between health insurers in such a way that one health insurer has, on average, younger policyholders and another has, on average, older policyholders, then the principle of intergenerational solidarity breaks down because premiums paid by the younger policyholders with one health insurer are not funding the claims of the older policyholders with the other. They argue that this causes difficulties, not just for the older policyholders with the latter health insurer, but also for the market as a whole.

Those arguing against the introduction of risk equalisation point to the benefits of competition. They say that the consumer is best served by a vibrant, competitive market and that the Irish consumer has already benefited as a result of the recent development of competition in Ireland. They say that transferring money between competing health insurers is bad for competition because they claim it involves a sharing of efficiencies and discourages new health insurers from entering the market. They claim that the introduction of risk equalisation would be detrimental to competition, would serve to protect the interests of incumbent health insurers over new or recent entrants to the market and would protect monopoly or near monopoly positions and would therefore be detrimental to the interests of consumers.

4. The Role of The Health Insurance Authority

The Authority's role in relation to risk equalisation is set out in the Health Insurance (Amendment) Act, 2001. The Act states that the Authority, when making its report to the Minister, should in certain circumstances "*include in that report a recommendation by it that the Minister ought or ought not (as it considers appropriate having regard to the best overall interests of health insurance consumers) [commence risk equalisation payments]*".
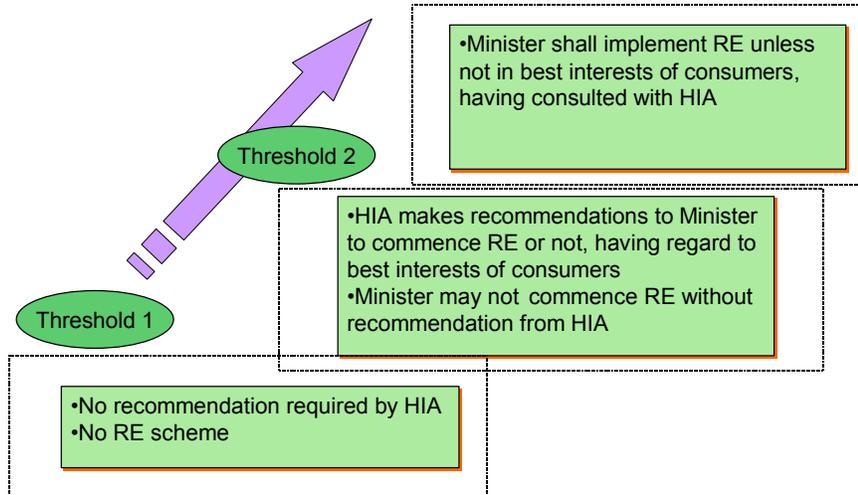
The Act goes on to provide some guidance on the definition of the best overall interests of health insurance consumers. It states "*the best overall interests of health insurance consumers includes a reference to the need to maintain the application of community rating across the market for health insurance and to facilitate competition between undertakings*".

In recommending whether or not risk equalisation payments ought to be commenced, the Authority must therefore have regard to the best overall interests of health insurance consumers. The Act requires the Authority to consider specifically maintaining community rating and facilitating competition in defining the best overall interests of health insurance consumers. When considering whether consumer interests are being served in the market, the Authority will consider all health insurance consumers, i.e. young, old, healthy and less healthy consumers.

The Authority's role in recommending to the Minister whether risk equalisation should be commenced differs at three levels of risk difference between health insurers (see diagram opposite).

- If the level of risk difference between insurers results in a "Market Equalisation Percentage" that is below 2%, then a recommendation is not required from the Authority to the Minister and a Risk Equalisation Scheme will not be commenced under any circumstances. (The Market Equalisation Percentage is approximately equal to the amount of money that would be transferred under a Scheme, expressed as a percentage of the total amount of claims made in the market that are subject to risk equalisation).

- If the level of risk difference between insurers results in a Market Equalisation Percentage that is between 2% and 10%, then the Authority is required to make a recommendation to the Minister whether or not to commence risk equalisation having regard to the best overall interests of health insurance consumers. The Minister may not commence risk equalisation without a recommendation from the Authority whilst the Market Equalisation Percentage falls between 2% and 10%.

- If the Market Equalisation Percentage is above 10% the Act states that the Minister shall implement risk equalisation unless he believes it not to be in the best overall interests of consumers, having consulted with the Authority (referred to as HIA in the diagram opposite).

Criteria for commencing RE – 2001 Act

Threshold 2

•Minister shall implement RE unless not in best interests of consumers, having consulted with HIA

•HIA makes recommendations to Minister to commence RE or not, having regard to best interests of consumers
•Minister may not commence RE without recommendation from HIA

Threshold 1

•No recommendation required by HIA
•No RE scheme

5. Risk Equalisation Procedure

The procedure to be followed, in practice, will be as outlined in this section. Flowcharts and timelines for the procedure can be found in Appendix II.

The Authority will receive returns from insurers every 6 months. The first half-year for which insurers will make a return will be the half-year commencing on 1 July, 2003. The Authority will receive these returns in January, 2004. Once the Authority receives returns it will analyse them. As outlined earlier the procedure to be followed varies, depending on the level of difference in risk profiles between insurers i.e. the Market Equalisation Percentage. Whatever the value of the Market Equalisation Percentage, the Authority is required to forward a report to the Minister.

- If the Market Equalisation Percentage is below 2%, the Authority will specify this in its report to the Minister and risk equalisation payments may not be commenced.

- If the Market Equalisation Percentage is between 2% and 10%, the Authority will be required to make a recommendation to the Minister regarding whether or not risk equalisation should be commenced. The Authority will analyse the returns and come to a preliminary view with regard to the recommendation that it will make to the Minister for Health and Children. The Authority is then required to give notice to insurers of the recommendation that it intends to make and allow 21 days for insurers to make representations. After considering these representations, the Authority will come to a final view in relation to its recommendation and forward its report to the Minister, within 120 days of the end of the period to which the returns relate. Therefore, if the Market Equalisation Percentage is between 2% and 10% the Minister will receive the first report from the Authority before the end of April, 2004.

  If the recommendation in this report is that risk equalisation payments should not be commenced then payments may not be commenced. If the recommendation in the report is that risk equalisation payments should be commenced then the Minister has 60 days to decide whether or not payments will be commenced. If the Authority recommends the commencement of payments and if the Minister is minded to follow this recommendation, then the Minister is also obliged to consider representations from insurers during this 60-day period before making a final decision.

- If the Market Equalisation Percentage is above 10% the Authority is not required to include a recommendation in its report to the Minister. Under these circumstances the Authority must forward its report to the Minister within 90 days of the end of the 6-month period to which the returns relate and the Minister has a further 90 days in which to decide whether or not to commence risk equalisation payments. The Minister must consult with the Authority during this 90-day period. If the Minister is minded to commence risk equalisation payments he or she is also obliged to consider representations from insurers before making a final decision.

The Minister will therefore decide whether or not risk equalisation payments will be commenced on the basis of the Authority's report (which would relate to returns received in respect of July – December, 2003) before the end of June 2004.

If the Minister decides to commence risk equalisation payments he or she must specify a date, known as the "risk equalisation commencement date". This date must be after the date on which the Minister makes his decision. If payments are commenced, the Authority will be responsible for the administration of the Scheme. The Authority will use returns received from insurers that relate to periods after the date specified by the Minister to calculate the risk equalisation payments to and from a risk equalisation fund. Therefore any risk equalisation payments would commence approximately 9 months after the date that the Minister specifies as the risk equalisation commencement date.

For the first 12 months after the Scheme has commenced, payments to and from the risk equalisation fund will be halved due to phasing arrangements contained in the Risk Equalisation Scheme, 2003.

Therefore, even if the Authority recommended the commencement of risk equalisation payments and the Minister decided to commence these payments at the earliest possible date, no payments will be made before Spring, 2005 and full payments cannot commence before Spring, 2006.

New entrants to the market:

In order to facilitate the growth of competition in the market, new entrants to the market may avail of a limited exemption from the Risk Equalisation Scheme. Under this limited exemption, new entrants to the market would not be obliged to make payments to (and would not be entitled to receive payments from) a risk equalisation fund for 36 months after the new entrant commences business. Furthermore, new entrants would only be subject to 50% payments for a phase-in period of up to 12 months.

Restricted membership undertakings

There is an allowance in Risk Equalisation Scheme, 2003 for restricted membership undertakings to opt out of the Scheme if they were registered as health insurance undertakings on 1 May, 2000 and if they were carrying on business in the State before 19 November, 2001. In order to opt out of the Scheme, a restricted membership undertaking must serve a notice on the Minister stating that it does not wish any Scheme to apply to it on or before 30 September, 2003.

6. The Preliminary Views of The Health Insurance Authority

The principle of community rating, together with open enrolment and lifetime cover helps to make private health insurance affordable for those who need it most. However, the Authority is aware of the difficulties that can arise for a community rated market, particularly the difficulties that can arise when risk profiles differ significantly between insurers in the market. Two potential difficulties that concern the Authority are described below.

Price Following
An insurer with a significantly lower risk profile might be in a position to charge a considerably lower premium as a result of its lower claim costs. However, it might choose instead to set its premium at a level slightly below the premium of other insurers with higher risk profiles. From the point of view of the insurer with the lower risk profile this could be viewed as a sensible strategy. Setting its price slightly below the prices of other insurers would assist in attracting a significant proportion of the new entrants to the market and some better risks from the other insurers, but would avoid attracting too many higher risks from the other insurers. Research into the Irish Private Health Insurance Market published by the Authority in 2003, as well as evidence from other markets would indicate that better risks are more likely to move insurer. This could result in the claim costs of the insurers with the higher risk profiles rising further as they fail to attract or retain sufficient low risk consumers. The insurer with the lower risk profile could again follow these price increases and the process would continue.

The overall market effect would be that all consumers would pay a premium close to the premium required to cover the claims of the insurers with the highest risk profiles and if the risk profiles of these insurers continued to worsen as described above, the premiums for all consumers would continue to rise.

Predatory pricing
The scenario is that an insurer with a much lower risk profile chooses to charge a significantly lower premium because it experiences lower claim costs. This premium might be significantly lower than the cost of insuring the market as a whole. The average claim of other insurers may increase, as the insurer charging a low premium might primarily attract younger, healthier, more mobile consumers with relatively low claim costs. The other insurers may not be able to reduce premiums to attract the low risk consumers back as their average claim would be too high. These insurers may ultimately be forced out of the market.

Older consumers would have the option, of course, of joining the insurer charging the lower premium, however, many older consumers might be more reluctant to move their insurance. If the insurers with higher risk profiles were driven out of the market, older consumers might join the insurer charging the lower premium. This insurer's average premium would have to rise to cover the higher risk consumers and another insurer with a low risk profile could pursue a predatory pricing strategy. Alternatively the insurer may not be willing to accept all of the high-risk consumers and may opt instead to leave the market entirely or another

possibility is that confidence in the market might be undermined causing some consumers to opt out of health insurance completely.

In the absence of other mitigating factors, the above scenarios are clearly not in the "best overall interests of health insurance consumers". The potential for them to arise stems directly from a significant difference in risk profiles existing in a community rated market with open enrolment and lifetime cover. The Authority is therefore of the view that the introduction of risk equalisation could be justified in the appropriate circumstances. However, the Authority recognises that intervention may not always be appropriate to address difficulties in the private health insurance market and where intervention is necessary risk equalisation may not be the most appropriate or even an appropriate form of intervention to use.

The Authority will need to be mindful of the likely effectiveness of risk equalisation in addressing any problems existing in the market and any potential harm that the commencement of risk equalisation may cause to the best overall interests of consumers. In this context the Authority will be particularly mindful of the level of competition existing in the market at the time and of the likely effect that risk equalisation would have on competition in the market.

When considering whether or not risk equalisation should be commenced in the best overall interests of health insurance consumers, the Authority will therefore consider, *inter alia*, matters such as
- the differences in risk profiles between insurers,
- the relative sizes of insurers,
- the age / gender profile of insurers' policyholders,
- the rate of premium inflation,
- the number of insurers in the market / new entrants to the market,
- the effect of any transfer on premiums payable by consumers,
- the overall size of the market,
- the effect of payments on the business plans or solvency of insurers and
- the commercial status of insurers.

7. Risk Equalisation Calculations

While the detail of the risk equalisation calculations may appear complex, the principle behind the calculations is straightforward and involves calculating the claim cost that each insurer would have had if they had the market risk profile rather than their own risk profile. In this section we will describe how this principle is applied in broad terms. In Appendix I we will consider the calculations in more detail and in particular we will consider how, for example, children are allowed for and how different ways of measuring risk profiles are allowed for in the calculations.

The first step when attempting to equalise levels of risk in different insurers is to decide how the risk profiles of different groups can be measured. Clearly the level of risk that policyholders pose to an insurer is related to their age and gender. Therefore, the proportion of the insurer's membership in each age and gender group is one way of estimating the insurer's risk profile. The Risk Equalisation Scheme, 2003 initially uses the age and gender profile of the insurer's membership as a proxy for its risk profile.

If the Authority considers that the age and gender profiles of the insurers' populations do not adequately reflect the underlying risk profiles, it is open to the Authority to take account of the extent to which an insurer's population uses healthcare services in attempting to measure the level of risk that each insurer has. The main disadvantage of incorporating the extent to which an insurer's population uses healthcare services is that it may result in insurers sharing efficiencies that they achieved in respect of reducing the extent to which their memberships use healthcare services.

In this section we will describe how the calculations would be performed if age and gender profiles were used as a proxy for risk profile.

1. Each insurer makes returns to the Authority, which specify its age and gender profile and its pre-equalisation claim costs for each age and gender group.
2. The Authority uses the data provided by insurers to calculate each insurers average cost per person in each age and gender group.
3. The pre-equalisation claim cost can then be expressed as follows:

Pre-equalisation claims cost:

Sum for each age and gender cell of	Total population covered by the insurer	*	Percentage of **insurer's own** population in that age and gender cell	*	Insurer's own average claim cost per insured person in that age and gender cell
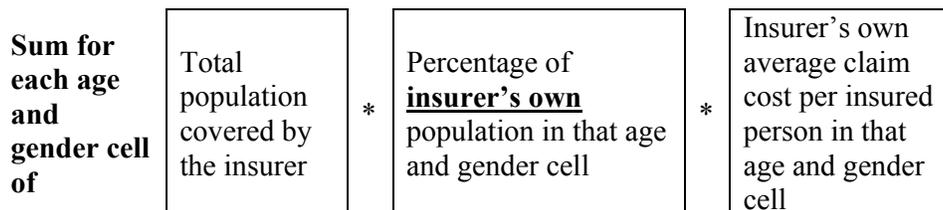
4. The Authority then uses the data supplied by insurers to calculate the age and gender profile of the market as a whole.
5. The percentage of the market in each age and gender cell is substituted for the percentage of the insurers' own populations in each age and gender cell to

calculate the claim cost using the market age and gender profile (which is being used to approximate the market risk profile). Therefore, for each insurer:

Claims cost using the market profile =

Sum for each age and gender cell of	Total population covered by the insurer	*	Percentage of **market** population in that age and gender cell	*	Insurer's own average claim cost per insured person in that age and gender cell
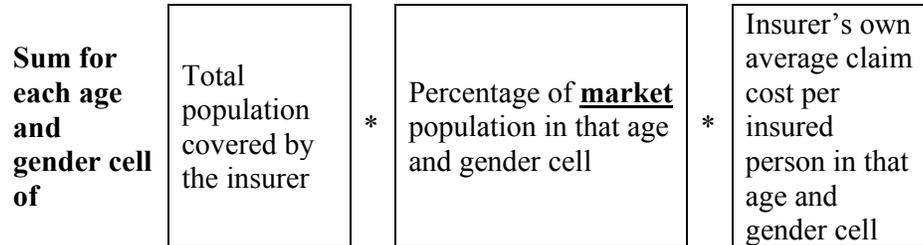
In calculating the costs this way every insurer is given the same age / sex profile, but each insurer uses their own average claim cost.

6. However, in order for the Risk Equalisation Scheme to be self financing the total pre–equalisation claim cost must equal the total post-equalisation claim cost and so we must apply an adjustment to the above figures. This adjustment is known as the Zero Sum Adjustment. Therefore:

Post-equalisation claims cost =

Sum for each age and gender cell of	Total population covered by the insurer	*	Percentage of **market** population in that age and gender cell	*	Insurer's own average claim cost per insured person in that age and gender cell	*	Zero Sum Adjustment factor
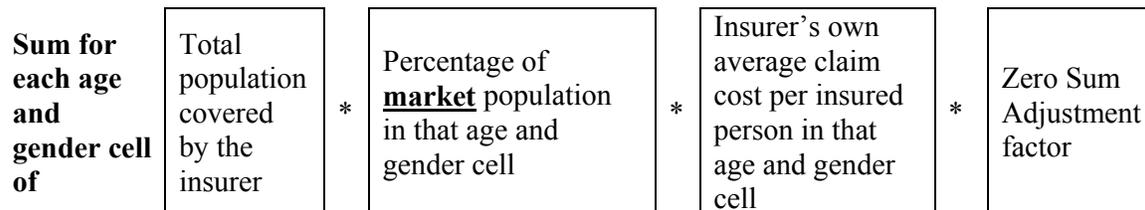
Example:

Suppose there are two insurers, A and B. Insurer A insures a total of 800,000 people and Insurer B insures a total of 200,000 people. The market population is the sum of the populations of A and B, i.e. 1,000,000 people. Each insurer's population can be divided into age groups and the average claim cost for each individual in the different age groups can be determined. (For simplicity, age is the only risk factor).

Using the formula in step 3 above, the pre-equalisation claims cost can be expressed as follows:

Insurer A Population = 800,000.00

Age Cell	% of Insurer's Own Population in Cell	Insurer's Own Average Claim Cost per Insured Person in Cell	Pre-equalisation Claims Cost ('000's)
Aged 18 to age 29	12.50	200.00	800,000 * 12.50% * € 200 = €20,000
Aged 30 to age 39	13.75	240.00	800,000 * 13.75% * € 240 = €26,400
Aged 40 to age 49	15.00	360.00	800,000 * 15.00% * € 360 = €43,200
Aged 50 to age 59	18.75	500.00	800,000 * 18.75% * € 500 = €75,000
Aged 60 to age 69	15.00	650.00	800,000 * 15.00% * € 650 = €78,000
Aged 70 to age 79	12.50	1,000.00	800,000 * 12.50% * € 1,000 = €100,000
Aged 80 and over	12.50	1,200.00	800,000 * 12.50% * € 1,200 = €120,000
Total			€462,600

Insurer B Population = 200,000.00

Age Cell	% of Insurer's Own Population in Cell	Insurer's Own Average Claim Cost per Insured Person in Cell	Pre-equalisation Claims Cost ('000's)
Aged 18 to age 29	32.00	181.82	200,000 * 32% * € 181.82 = €11,636
Aged 30 to age 39	20.00	218.18	200,000 * 20% * € 218.18 = €8,727
Aged 40 to age 49	20.00	327.27	200,000 * 20% * € 327.27 = €13,090
Aged 50 to age 59	16.00	454.55	200,000 * 16% * € 454.55 = €14,545
Aged 60 to age 69	6.00	590.91	200,000 * 6% * € 590.91 = €7,090
Aged 70 to age 79	3.00	909.09	200,000 * 3% * € 909.09 = €5,454
Aged 80 and over	3.00	1,090.91	200,000 * 3% * € 1090.91 = €6,545
Total			€67,091

We then calculate the age profile of the market, which we use as a proxy for the market risk profile.

Market Population = **1,000,000.00**

Age Cell	% of Market Population in Cell
Aged 18 to age 29	16.40
Aged 30 to age 39	15.00
Aged 40 to age 49	16.00
Aged 50 to age 59	18.20
Aged 60 to age 69	13.20
Aged 70 to age 79	10.60
Aged 80 and over	10.60

We now substitute the age profile of the market for each insurer's age profile.

Insurer A Population = 800,000.00

Age Cell	% of Market Population in Cell	Insurer's Own Average Claim Cost per Insured Person in Cell	Claims Cost using market risk profile ('000's)
Aged 18 to age 29	16.4%	200.00	800,000 * 16.4% * € 200 = €26,240
Aged 30 to age 39	15.0%	240.00	800,000 * 15.0% * € 240 = €28,800
Aged 40 to age 49	16.0%	360.00	800,000 * 16.0% * € 360 = €46,080
Aged 50 to age 59	18.2%	500.00	800,000 * 18.2% * € 500 = €72,800
Aged 60 to age 69	13.2%	650.00	800,000 * 13.2% * € 650 = €68,640
Aged 70 to age 79	10.6%	1,000.00	800,000 * 10.6% * € 1000 = €84,800
Aged 80 and over	10.6%	1,200.00	800,000 * 10.6% * € 1200 = €101,760
Total			**€429,120**

Insurer B Population = 200,000.00

Age Cell	% of Market Population in Cell	Insurer's Own Average Claim Cost per Insured Person in Cell	Claims Cost using market risk profile ('000's)
Aged 18 to age 29	16.4%	181.82	200,000 * 16.4% * € 181.82 = €5,964
Aged 30 to age 39	15.0%	218.18	200,000 * 15.0% * € 218.18 = €6,545
Aged 40 to age 49	16.0%	327.27	200,000 * 16.0% * € 327.27 = €10,473
Aged 50 to age 59	18.2%	454.55	200,000 * 18.2% * € 454.55 = €16,546
Aged 60 to age 69	13.2%	590.91	200,000 * 13.2% * € 590.91 = €15,600
Aged 70 to age 79	10.6%	909.09	200,000 * 10.6% * € 909.09 = €19,273
Aged 80 and over	10.6%	1,090.91	200,000 * 10.6% * € 1090.91 = €23,127
Total			**€97,528**

In other words, we attempt to estimate the claim cost that each insurer would have incurred if they all had the same age profile (i.e. the market profile).

The difference between each insurer's pre-equalisation and post-equalisation claims costs is what they either receive from, or contribute to, the risk equalisation fund. In order to ensure the system is self-financing and that the total amount transferred to the fund is equal to the total amount transferred from the fund, a zero sum adjustment factor is included in the post-equalisation formula:

The zero sum adjustment factor (ZSA) is calculated as follows:

$$ZSA = \frac{\textbf{Total of pre-equalisation claim costs for all insurers}}{\textbf{Total of claim costs using market risk profiles for all insurers}},$$

which in our example $= \dfrac{462,600 + 67,091}{429,120 + 97,528} = 1.00578$

Therefore the post-equalisation claim costs for insurers A and B are:

€429,120,000 * 1.00578 = €431,600,000 and

€97,528,000 * 1.00578 = € 98,091, 000 respectively.

The difference between the pre- and post-equalisation total claims costs is equal to the amounts to be transferred by each insurer into or out of the risk equalisation fund.

	Insurer A	Insurer B
Pre-equalisation		
Total Claims Cost ('000s)	€462,600	€67,091
Post-equalisation		
Total Claims Cost ('000s)	€431,600	€98,091
Transfers ('000s)	- €31,000	€31,000

Appendix I - Guide to the Risk Equalisation Calculations in the Risk Equalisation Scheme, 2003.

A. Introduction.

This appendix describes the risk equalisation calculations in detail. In this appendix

- We begin by giving an overview of the calculations specified in the Risk Equalisation Scheme, 2003 (Section A);
- We then step through the calculations as specified in the Risk Equalisation Scheme, 2003 explaining how the calculations specified in the Scheme allow for children, allow for phasing, cater for situations in which data might be sparse, allow for new entrants and limit the level of benefits subject to risk equalisation (Section B); and
- We include a glossary of the abbreviations used in the Scheme (Section C).

B. Overview of Risk Equalisation Formulae.

In this overview, in order to simplify matters, we will assume that all benefits paid by insurance undertakings are subject to risk equalisation. In reality the "Maximum Equalised Payments" amounts set out in the First Schedule of the Scheme place limits on the amounts of benefits that are subject to risk equalisation. Furthermore, we will not consider adjustments for children or for sparse data until a later section.

The methodology for the risk equalisation calculations is outlined in the following steps:

1. **Estimate the risk profile for the overall market.**

   The Risk Equalisation Scheme, 2003 approximates the market risk profile in two different ways:
   1. They use the age and gender profile of the market, i.e., the proportion of the market in each age and gender cell is calculated.
   2. They combine the age and gender profile of the market with a measure of the extent to which members of that age and gender cell utilise healthcare services, i.e. they multiply the proportion in each age and gender cell in the market by the average number of days that someone in that cell spends in hospital.

2. **Substitute the market risk profile for each undertaking's own risk profile.**
   Each undertaking's pre-equalisation claim costs can be expressed as the sum over all age and gender cells of:
   Undertaking Membership * Undertaking Proportion in cell
                                     * Undertaking Cost per person in cell
   It can also be expressed as the sum over all age and gender cells of:
   Undertaking membership * Undertaking Proportion in Cell
               * Undertaking average no. of days a person in the cell stays in hospital
                     * Undertaking cost for a day in hospital for a person in the cell

Depending on how we estimate the market risk profile we can substitute it for the undertaking's risk profile by either

1. Substituting the "Undertaking Proportion in Cell" with "Market Proportion in Cell" in the first formula or by
2. Substituting " Undertaking proportion in cell * Undertaking Average no. of days a person in the cell spends in hospital" with "Market Proportion in Cell * Market average number of days a person in the cell spends in hospital" in the second formula.

3. **Apply the Zero Sum Adjustment.**
   After step 2 we have an estimate of the costs undertakings would have incurred if they had the same risk profile as the overall market. However, if we sum these estimates, it is unlikely that we will find that the total of the estimates is equal to the total of the costs that were actually incurred in the market. The reason for this is that each undertaking's cost per unit of risk is likely to be different so that when risk is moved from one undertaking to another, the cost of that risk changes. In order for the Risk Equalisation Scheme to be self – financing, i.e. in order for the transfers *to* undertakings to be equal to the transfers *from* undertakings an adjustment must be applied. Therefore, the estimate of the cost for each undertaking is multiplied by (The total cost of benefits actually paid by undertakings / The total of the estimates of the costs that would have been incurred if every undertaking had the same risk profile as the market).
   We call the amounts calculated after the application of this adjustment, the "Post-equalisation claim costs" for each undertaking.

4. **The risk equalisation transfer to and from each undertaking is calculated as being equal to the difference between the "Post-equalisation claim costs" and the actual benefits paid by undertakings.**

5. **The Market Equalisation Percentage is calculated as being equal to the total amount that would be transferred if risk equalisation had been commenced divided by the total benefits paid by undertakings.**
   The Market Equalisation Percentage is then compared with the 2% and 10% thresholds defined in the Risk Equalisation Scheme, 2003 in order to determine the Authority's role in deciding whether or not risk equalisation payments should be commenced.

C. Calculation of Equalisation Adjustments as in the Risk Equalisation Scheme, 2003 with Explanatory Notes

In this section we step through the risk equalisation calculations as specified in Sections 7, 8 and 9 of the Second Schedule of the Scheme and we include explanatory notes wherever necessary.

- Section 7 of the Second Schedule describes how the post-equalisation claim costs are calculated using age, gender and "health status"
- Section 8 of the Second Schedule describes how the post-equalisation claim costs are calculated using age and gender only.
- Section 9 of the Second Schedule describes how the Health Status Weight and phase-in period are applied when calculating any risk equalisation transfers and how the Market Equalisation Percentage is calculated.

We begin by stepping through Section 7 of the Second Schedule of the Scheme. This section begins by describing how the post equalisation claim cost for a particular cell is calculated using the market profile with respect to age, gender and "health status":

"7. Age, Gender and Health Status (AGHS) Calculations shall be determined in accordance with the following provisions:

"cell standardised benefits – AGHS" and **"CSBAGHS"** with respect to a specific period, each scheme undertaking and a specified cell, means an amount calculated in accordance with the formula:

$$CEBA * MP(Cell) * MU(Cell) * UIP$$

Explanatory Note:

In the above formula:

CEBA = The cost of equalised benefits per day in hospital for a particular undertaking, in a particular cell.

MP(Cell) = The proportion of insured persons in the market that are in a particular age and gender cell.

MU(Cell) = The average number of days a person in a particular cell spends in hospital over all undertakings in the market.

UIP = The membership of the undertaking.

Thus we calculate the cost for the cell using the undertakings own average cost per day in hospital (CEBA) and the undertakings own size (UIP), but we use the market proportion in the cell (MP(Cell)) and the market level of utilisation in the cell (MU(Cell)).

Except where the CCV is less than 20 for that cell, in which case, CSBAGHS shall be calculated in accordance with the formula:

$$\text{MEBA(Cell)} * \text{MP(Cell)} * \text{MU(Cell)} * \text{UIP}$$

Explanatory Note :
CCV = Total number of days members of the undertaking in a particular age and gender cell spend in private accommodation in hospital.
MEBA = Market average cost per day in hospital for people in a particular age and gender cell.
MP(Cell) = The proportion of insured persons in the market that are in a particular age and gender cell.
MU(Cell) = The average number of days a person in a particular cell spends in hospital over all undertakings in the market.
UIP = The membership of the undertaking.

When CCV < 20, CEBA does not give a reliable estimate of the expected cost of equalised benefits per day in hospital, hence we use the market rate (MEBA(Cell)), which is very likely to be based on a larger sample size.

"undertaking standardised benefits AGHS - first calculation " and
"USBAGHSl" with respect to a specific period and each scheme undertaking means the sum for **all** cells of

$$\text{CSBAGHS}$$

"undertaking standardised benefits AGHS- second calculation" and
"USBAGHS2" with respect to a specific period and each scheme undertaking means a value determined in accordance with the formula:

$$\frac{\text{USBAGHS1} * \text{UEAR}}{\text{MEAR}}$$

Explanatory Note:
UEAR = The membership of the undertaking, counting each child as 1/3, divided by the membership of the undertaking, counting each child as 1.
MEAR = The total membership in the market, counting each child as 1/3, divided by the total membership in the market, counting each child as 1.

This adjustment is to allow for children in the insured population. Because children are charged a lower premium than adults, undertaking standardised benefits should be reduced if a greater proportion of the undertaking's insured population are children than in the rest of the market.

"market standardised benefits AGHS" and **"MSBAGHS"** with respect to a specific period means the sum, for all scheme undertakings, of

USBAGHS2

"undertaking standardised benefits AGHS" and **"USBAGHS"** with respect to a specific period and each scheme undertaking means an amount determined in accordance with the formula:

$$\text{USBAGHS2} * \frac{\text{MEB(Total)}}{\text{MSBAGHS}}$$

> **Explanatory Note :**
> In the above calculation we ensure that the total of the post-equalisation benefits are equal to the total Market Equalised Benefits incurred by undertakings. We do this by applying a factor to our estimate of the costs that would have been incurred by each undertaking if they had the same risk profile as the market. This factor (the Zero Sum Adjustment) is equal to the total benefits paid by undertakings, divided by the total of our estimates.

"undertaking equalisation adjustment – age, gender and health status " and **"UEAAGHS"** with respect to a specific period and each scheme undertaking shall be determined in accordance with the formula:

$$\text{USBAGHS} - \text{UEB}$$

8. Age and Gender (AG) Calculations shall be determined in accordance with the following provisions:

"cell standardised benefits – age and gender basis" and **"CSBAG"** with respect to a specific period, each scheme undertaking and a specified cell mean an amount calculated in accordance with the formula:

$$\frac{\text{CEB}}{\text{CIP}} * \text{UIP} * \text{MP(Cell)}$$

> **Explanatory Note :**
> CEB = The total equalised benefits paid for a particular undertaking for members in a particular age and gender cell.
> CIP = The total number of people in a particular undertaking that are in a particular age and gender cell.
> UIP = The total membership of the undertaking.
> MP(Cell) = The proportion of people in the market that are in a particular age and gender cell.
>
> Thus we calculate the cost for the cell using the undertakings own average cost per

person in the cell and the undertakings own size, but we use the market proportion in the cell.

Except where CEB is less than €5000, or where CIP is less than 20, in which case CSBAG shall be calculated in accordance with the following formula:

$$\frac{\textbf{MEB(Cell)}}{\textbf{MIP(Cell)}} * \textbf{UIP} * \textbf{MP(Cell)}$$

Explanatory Note:
MEB(Cell) = The total equalised benefits paid in the market for a particular age and gender cell.
MIP(Cell) = The total number of people in the market in a particular age and gender cell.
When CEB < €5000, or CIP is less than 20, (CEB/CIP) does not give a reliable estimate of the expected cost of equalised benefits per person, hence we use the market rate which is very likely to be based on a larger sample size.

"undertaking standardised benefits – age and gender basis - first calculation" and **"USBAGl"** with respect to a specific period and each scheme undertaking means the sum for all cells of

CSBAG

"undertaking standardised benefits – age and gender basis – second calculation" and **"USBAG2"** with respect to a specific period and each scheme undertaking means a value determined in accordance with the formula

$$\frac{\texttt{USBAGl*UEAR}}{\textbf{MEAR}}$$

Explanatory Note:
UEAR = The membership of the undertaking, counting each child as 1/3, divided by the membership of the undertaking, counting each child as 1.
MEAR = The total membership in the market, counting each child as 1/3, divided by the total membership in the market, counting each child as 1.

This adjustment is to allow for children in the insured population. Because children are charged a lower premium, undertaking standardised benefits should be reduced if a greater proportion of the undertaking's insured population are children than in the rest of the market.

"market standardised benefits – age and gender basis" and **"MSBAG"** with respect to a specific period means the sum, for all scheme undertakings, of

USBAG2

"undertaking standardised benefits – age and gender basis" and "USBAG" with respect to a specific period and each scheme undertaking means an amount determined in accordance with the formula:

$$USBAG2 * \frac{MEB(Total)}{MSBAG}$$

> **Explanatory Note :**
> In the above calculation we ensure that the total of the post-equalisation benefits are equal to the total Market Equalised Benefits incurred by undertakings. We do this by applying a factor to our estimate of the costs that would have been incurred by each undertaking if they had the same risk profile as the market. This factor (the Zero Sum Adjustment) is equal to the total benefits paid by undertakings, divided by the total of our estimates.

"undertaking equalisation adjustment – age and gender" and "UEAAG" with respect to a specific period and each scheme undertaking means an amount determined in accordance with the formula :

$$USBAG - UEB$$

9. **Determination of Market Equalisation Percentage and Equalisation Contributions** shall be in accordance with the following provisions:

"undertaking equalisation adjustment" and "UEA" with respect to a specific period and each scheme undertaking means an amount determined in accordance with the following formula:

$$HSW * UEAAGHS + (100\% - HSW) * UEAAG$$

> **Explanatory Note:**
> We have calculated the post-equalisation cost of benefits for each undertaking on the basis of age, gender and "health status" and on the basis of age and gender only. We now calculate a weighted average of costs under these bases. The higher the value of HSW, the greater the influence of the calculations performed using the "health status" basis. The Authority has discretion to vary the HSW factor, however the initial value of HSW will be 0. Therefore, the risk equalisation calculations will initially be performed on the basis of age and gender only and calculations performed on the health status basis will have no effect on the overall result.

"undertaking phased positive equalisation adjustment" and **"UPPEA"** with respect to a specific period and each scheme undertaking means for all scheme undertakings in respect of which the determined **UEA** is greater than zero an amount determined in accordance with the following formula:

$$UEA * P$$

where **P** is a value determined in accordance with the following table

Total number of periods from the risk equalisation commencement date up to the current period inclusive	Value
Not more than 2	0.5
3 or more	1.00

Provided that in the case of a scheme undertaking that had satisfied the conditions in subsection (1) of section 12B of the Act, a value for **P** determined in accordance with the following table should be substituted for the above, if lower,

Total number of periods (including part periods) from the commencement date of that undertaking up to the current period inclusive	Value
6 or less	0
7	T/365
8	0.5
9 or more	1.00

Where "T" is the number of days from, and including, the day that undertaking first becomes a scheme undertaking to the end of the period in which it acquired that status.

Explanatory Note:
The above section details how payments are phased in certain circumstances. The two circumstances in which payments are phased are:

1. In the two periods after any commencement of risk equalisation payments, payments between undertakings that are not new entrants to the market are halved.
2. A phase-in period is also provided for new entrants to the market, provided that they give the required notice to the Authority. Such new entrants may choose to be exempted from making or receiving payments to or from the Scheme for 36 months after the date on which they commence carrying on health insurance business. Thereafter their payments are phased in. The manner in which the Scheme specifies this phase-in period results in its length varying, depending on the date on which the undertaking becomes a scheme undertaking.

"market positive equalisation adjustments" and **"MPEA"** (with respect to a specific period), means the sum, for all scheme undertakings in respect of which the determined **UEA** is greater than zero of

$$UEA$$

"market positive phased equalisation adjustments" and **"MPPEA"** (with respect to a specific period) means the sum, for all scheme undertakings in respect of which the determined **UEA** is greater than zero of

$$UPPEA$$

"undertaking phased negative equalisation adjustment" and **"UPNEA"** (with respect to a specific period and each scheme undertaking) means, for all scheme undertakings in respect of which the determined **UEA** is less than or equal to zero an amount determined in accordance with the following formula:

$$UEA * \frac{MPPEA}{MPEA}$$

"equalisation contribution" (with respect to a specific period and each scheme undertaking) means:

a) **UPPEA** for all scheme undertakings in respect of which the determined **UEA** is greater than zero and/or
b) **UPNEA** for all scheme undertakings in respect of which the determined **UEA** is less than or equal to zero.

"market equalisation percentage" with respect to a specific period shall be a percentage determined in accordance with the following formula:

$$\frac{MPEA * 100}{MEB(Total)} \text{ ."}$$

D. Glossary of Abbreviations:

The purpose of the following glossary is to define the many abbreviations used in the Risk Equalisation formulae in straightforward terms, rather than the mathematical / legalistic terms that are used in the Risk Equalisation Scheme. However the abbreviations represent mathematical / legalistic entities and hence some accuracy may be lost when defining them in more straightforward terms. Therefore, if an exact definition is required you should consult the Scheme.

CCV   Cell Claim Value = The sum of all in-patient and day-patient days, in respect of settled claims which acquired that status during that period, to or on behalf of covered persons.

CEB   Cell Equalised Benefits = The sum of all equalised benefits paid by a particular undertaking, for a particular cell.

CEBA   Cell Equalised Benefit Average $= \dfrac{CEB}{CCV} =$ The cost of equalised benefits per day in hospital for a particular undertaking, in a particular cell.

CIP   Cell Insured Population = Average of the number of insured persons in a cell for a particular undertaking on the first day of the period and on the first day of the second quarter of the period.

CSBAG   Cell Standardised Benefits (Age and Gender) = An estimate of the cost of equalised benefits that a particular undertaking would pay in a particular cell if that undertaking had, proportionately, the same level of risk in that cell as the market. For CSBAG market risk is measured in relation to its age and gender profile.

CSBAGHS   Cell Standardised Benefits (Age, Gender and Health Status) = An estimate of the cost of equalised benefits that a particular undertaking would pay in a particular cell if that undertaking had, proportionately, the same level of risk in that cell as the market. For CSBAGHS market risk is measured using both the age and gender profile and the extent to which healthcare services are used.

CU   Cell Utilisation $= \dfrac{CCV}{CIP} =$ The number of days in hospital per insured person for a particular cell for a particular undertaking.

HSW   The Health Status Weight is a factor, which is initially set to 0 but can be altered by the Authority. This factor is used to determine the extent to which the risk equalisation calculations will be based on the age, gender and "health status" basis as opposed to age and gender only.

MCV(Cell) Market Claim Value(Cell) = Days in hospital (CCV) summed over all scheme undertakings for a particular cell.

MCV(Total) Market Claim Value(Total) = Total number of days in hospital (CCV) for all cells and for all scheme undertakings in the market.

MEAL   Market Equivalent Adult Lives = A measure of the number of insured persons in the market with each adult counting as 1 and each child counting as $1/3^{rd}$ = the sum over all undertakings of UEAL.

MEAR   Market Equivalent Adult Ratio = Market equivalent adult lives divided by the total market insured population $= \dfrac{MEAL}{MIP(Total)}$.

MEB(Cell) Market Equalised Benefit(Cell) = The sum of the cost of equalised benefits paid by scheme undertakings for a particular cell = the sum of CEB for all undertakings and a particular cell.

MEB(Total)   Market Equalised Benefit(Total) = The total of equalised benefits paid by all undertakings in the market = the sum of CEB for all cells and all undertakings in the market.

MEBA(Cell)   Market Equalised Benefits Average = The cost of equalised benefits per day in hospital for a particular cell over all scheme undertakings = $\dfrac{\text{MEB(Cell)}}{\text{MCV(Cell)}}$.

MIP(Cell)   Market Insured Population (Cell) = Number of persons in a particular cell insured by any undertaking in the market = the sum of CIP for all undertakings and a particular cell.

MIP(Total)   Market Insured Population (Total) = The total number of persons insured by any scheme undertaking in the market = the sum of CIP for all cells and all scheme undertakings.

MP(Cell)   Market Proportion = The proportion of insured persons in the market that are in a particular age and gender cell = $\dfrac{\text{MIP(Cell)}}{\text{MIP(Total)}}$

MPEA   Market Positive Equalisation Adjustment = The total amount that would be transferred in the period under risk equalisation if payments were commenced and if there were no phasing.

MPPEA   Market Positive Phased Equalisation Adjustments = The total amount that would be transferred in the period under risk equalisation if payments were commenced.

MSBAG   Market Standardised Benefits (Age and Gender) = An estimate of the total amount of equalised benefits (adjusted for children insured) that would have been paid in the market if all scheme undertakings had the market risk profile. For MSBAG risk is measured in relation to the age and gender profile of the insured population. MSBAG = the sum, for all scheme undertakings, of USBAG2.

MSBAGHS   Market Standardised Benefits (Age, Gender and Health Status) = An estimate of the total amount of equalised benefits (adjusted for children insured) that would have been paid in the market if all scheme undertakings had the market risk profile. For MSBAGHS risk is measured using age, gender and "health status". MSBAGHS = the sum, for all scheme undertakings, of USBAGHS2.

MU(Cell)   Market Utilisation = The average number of days in hospital per person for a particular cell over all scheme undertakings = $\dfrac{\text{MCV(Cell)}}{\text{MIP(Cell)}}$
.

UAL Undertaking Adult Lives = The total number of adults insured by an undertaking = The sum for all cells except the child cell of CIP.

UCL Undertaking Child Lives = The number of children insured by an undertaking = The value of CIP for an undertaking's "age 17 and under" cell.

UEA Undertaking Equalisation Adjustment = A weighted average of the adjustment calculated on the basis of Age and Gender and the adjustment calculated on the basis of Age, Gender and Health Status. The weight is the HSW, which is initially 0 and thereafter determined by the Authority.

UEAAG Undertaking Equalisation Adjustment (Age and Gender) = The difference between the Undertaking standardised benefits calculated on the basis of Age and Gender and the Undertaking Equalised Benefits = USBAG – UEB.

UEAAGHS Undertaking Equalisation Adjustment (Age, Gender and Health Status) = The difference between the Undertaking standardised benefits calculated on the basis of Age, Gender and "Health Status" and the Undertaking Equalised Benefits = USBAG – UEB.

UEAL Undertaking Equivalent Adult Lives = A measure of the number of insured persons with each adult counting as 1 and each child counting as $1/3^{rd}$ = UAL +UCL/3

UEAR Undertaking Equivalent Adult Ratio = Undertaking equivalent adult lives divided by the undertaking insured population $= \dfrac{\text{UEAL}}{\text{UIP}}$.

UEB Undertaking Equalised benefits = The total equalised benefits paid by an undertaking = The sum for all cells in an undertaking of CEB.

UIP Undertaking Insured Population = The total number of persons insured by a particular undertaking = The sum for all cells in an undertaking of CIP.

UPNEA Undertaking Phased Negative Equalisation Adjustment = The value calculated when a negative Undertaking Equalisation Amount is phased for a period = the amount transferred in the period.

UPPEA Undertaking Phased Positive Equalisation Adjustment = The value calculated when the positive Undertaking Equalisation Amount is phased for a period = the amount transferred in the period.

USBAG Undertaking Standardised Benefits (Age and Gender basis). The share of total Market Equalised Benefits allocated to an undertaking based on age and gender only. It is calculated by applying the Zero Sum

Adjustment to the estimate of the costs that the undertaking would have incurred if it had the same age and gender profile as the market.

$$USBAG = USBAG2 * \frac{MEB(Total)}{MSBAG}.$$

USBAG1 Undertaking Standardised Benefits (Age and Gender) – first calculation = An estimate of the cost of equalised benefits that a particular undertaking would pay if that undertaking had the same risk profile as the market. For USBAG1, risk is measured in relation to the Age and Gender profile. USBAG1 = The sum for all cells in the undertaking of CSBAG.

USBAG2 Undertaking Standardised Benefits (Age and Gender) – second calculation = An estimate of the cost of equalised benefits that a particular undertaking would pay if that undertaking had the same risk profile as the market, <u>adjusted for the number of children insured by the undertaking</u>. For USBAG2 risk is measured in relation to the Age and Gender profile of the insured population.

$$USBAG2 = USBAG1 * \frac{UEAR}{MEAR}.$$

USBAGHS Undertaking Standardised Benefits (Age, Gender and Health Status basis). The share of total Market Equalised Benefits allocated to an undertaking based on age, gender and "health status". It is calculated by applying the Zero Sum Adjustment to the estimate of the costs that the undertaking would have incurred if it had the same profile in relation to age, gender and average days in hospital as the market, i.e.

$$USBAGHS = USBAGHS2 * \frac{MEB(Total)}{MSBAGHS}.$$

USBAGHS1 Undertaking Standardised Benefits (Age, Gender and Health Status) – first calculation = An estimate of the cost of equalised benefits that a particular undertaking would pay if that undertaking had the same risk profile as the market. For USBAGHS1 risk is measured in relation to age, gender and "health status". USBAGHS1 = The sum for all cells in the undertaking of CSBAGHS.

USBAGHS2 Undertaking Standardised Benefits (Age, Gender and Health Status) – second calculation = An estimate of the cost of equalised benefits that a particular undertaking would pay if that undertaking had the same risk profile as the market, <u>adjusted for the number of children insured by the undertaking</u>. For USBAGHS2 risk is measured using a mixture of age, gender and "health status".

$$USBAGHS2 = USBAGHS1 * \frac{UEAR}{MEAR}.$$

E. Example of Calculations:

Invented Undertaking Data and Market Totals

Cell	Undertaking 1 Cell Insured Persons	Cell Equalised Benefits for the Period	Cell Claim Value for the Period	Undertaking 2 Cell Insured Persons	Cell Equalised Benefits for the Period	Cell Claim Value for the Period	Market Market Insured Persons (Cell)	Cell Equalised Benefits for the Period	Cell Weighted Claim Value for the Period	Market Proportion
	CIP	CEB	CCV	CIP	CEB	CCV	MIP(Cell)	MEB(Cell)	MCV(Cell)	MP(Cell)
Males Age 17 and Under	117500	11,468,000	28,671	28,670	2,203,576	6,295	146,170	13,671,576	34,966	0.122
Males Age 18 to age 29	98700	5,724,600	14,311	23,500	1,073,362	3,066	122,200	6,797,962	17,377	0.102
Males Age 30 to age 39	84600	8,256,960	20,642	19,740	1,517,216	4,334	104,340	9,774,176	24,976	0.087
Males Age 40 to age 49	56400	10,355,040	23,011	11,280	1,656,806	4,142	67,680	12,011,846	27,153	0.056
Males Age 50 to age 59	47000	16,074,000	32,148	7,520	2,083,190	4,629	54,520	18,157,190	36,777	0.045
Males Age 60 to age 69	32900	20,718,775	37,670	1,880	968,670	1,937	34,780	21,687,445	39,607	0.029
Males Age 70 to age 79	18800	21,657,600	36,096	940	893,376	1,624	19,740	22,550,976	37,720	0.016
Males Age 80 and Over	14100	29,492,970	45,373	470	816,728	1,361	14,570	30,309,698	46,734	0.012
Females Age 17 and Under	132500	12,932,000	32,330	32,330	2,484,883	7,099	164,830	15,416,883	39,429	0.137
Females Age 18 to age 29	111300	6,455,400	16,138	26,500	1,210,387	3,458	137,800	7,665,787	19,596	0.115
Females Age 30 to age 39	95400	9,311,040	23,277	22,260	1,710,903	4,888	117,660	11,021,943	28,165	0.098
Females Age 40 to age 49	63600	11,676,960	25,948	12,720	1,868,313	4,670	76,320	13,545,273	30,618	0.064
Females Age 50 to age 59	53000	18,126,000	36,252	8,480	2,349,129	5,220	61,480	20,475,129	41,472	0.051
Females Age 60 to age 69	37100	23,363,725	42,479	2,120	1,092,330	2,184	39,220	24,456,055	44,663	0.033
Females Age 70 to age 79	21200	24,422,400	40,704	1,060	1,007,424	1,831	22,260	25,429,824	42,535	0.019
Females Age 80 and Over	15900	33,258,030	51,166	530	920,991	1,534	16,430	34,179,021	52,700	0.014
Total	1,000,000	€ 263,293,500	506,216	200,000	€23,857,284	58,272	1,200,000	€ 287,150,784	564,488	1
Adult Lives	750,000			139,000						
Child Lives	250,000			61,000						
Equivalent Adult Lives	833,333			159,333			992,666			
Equivalent Adult Ratio	0.83			0.80			0.83			

Parameters And Calculations

Cell	Undertaking 1				Undertaking 2				Market			
	CEBA	CU	CSBAGHS	CSBAG	CEBA	CU	CSBAGHS	CSBAG	MEBA	MU	Market	Market
Males Age 17 and Under	400	0.24	11,655,311	11,888,493	350	0.22	2,039,679	1,872,437	391	0.24		
Males Age 18 to age 29	400	0.14	5,792,750	5,906,333	350	0.13	1,013,731	930,247	391	0.14		
Males Age 30 to age 39	400	0.24	8,325,768	8,486,320	350	0.22	1,457,009	1,336,595	391	0.24		
Males Age 40 to age 49	450	0.41	10,182,456	10,355,040	400	0.37	1,810,214	1,656,806	442	0.40		
Males Age 50 to age 59	500	0.68	15,323,880	15,538,200	450	0.62	2,758,298	2,517,188	494	0.67		
Males Age 60 to age 69	550	1.14	18,153,593	18,252,254	500	1.03	3,300,653	2,986,732	548	1.14		
Males Age 70 to age 79	600	1.92	18,860,160	18,950,400	550	1.73	3,457,696	3,126,816	598	1.91		
Males Age 80 and Over	650	3.22	25,314,799	25,396,724	600	2.90	4,673,501	4,219,763	649	3.21		
Females Age 17 and Under	400	0.24	13,143,222	13,406,173	350	0.22	2,300,064	2,111,472	391	0.24		
Females Age 18 to age 29	400	0.14	6,532,250	6,660,333	350	0.13	1,143,143	1,049,002	391	0.14		
Females Age 30 to age 39	400	0.24	9,388,632	9,569,680	350	0.22	1,643,010	1,507,224	391	0.24		
Females Age 40 to age 49	450	0.41	11,482,344	11,676,960	400	0.37	2,041,305	1,868,313	442	0.40		
Females Age 50 to age 59	500	0.68	17,280,120	17,521,800	450	0.62	3,110,421	2,838,531	494	0.67		
Females Age 60 to age 69	550	1.14	20,471,073	20,582,329	500	1.03	3,722,013	3,368,017	548	1.14		
Females Age 70 to age 79	600	1.92	21,267,840	21,369,600	550	1.73	3,899,104	3,525,984	598	1.91		
Females Age 80 and Over	650	3.22	28,546,475	28,638,859	600	2.90	5,270,118	4,758,456	649	3.21		
USBAG(HS)1			241,720,675	244,199,500			43,639,965	39,673,590				
USBAG(HS)2			243,506,389	246,003,526			42,028,012	38,208,145			285,534,400	284,211,671
USBAG(HS)			244,884,861	248,547,523			42,265,929	38,603,267				
UEAAG(HS)			-18,408,639	-14,745,977			18,408,639	14,745,977				

Parameters				
Sample HSW value	0.30	UEA	-15,844,776	15,844,776

From previous page MEB(Total) = 287,150,784 => Market Equalisation Percentage = 5.52%

Appendix II: Examples of flow charts and time lines outlining the procedures set down in the Risk Equalisation Scheme, 2003 under different Scenarios.

In this appendix we describe the procedures to be followed in certain scenarios as they are set down in the Risk Equalisation Scheme, 2003. Please note that we do not include all possible scenarios, nor should it be inferred that the Authority views any scenario to be more likely than any other based on the flowcharts and the timelines included in this document.

Assumption: Market Equalisation Percentage < 2%

THE HEALTH
INSURANCE
AUTHORITY

Six months to which returns relate	

30 Days

Returns made by undertakings to HIA	

90 Days

| Data adjustment sent to HIA for inclusion in future recalculations | 7 Days | Error in returns found by undertaking | Immediate Notification |

| Error in calculations | 7 Days | Report to Minister and undertakings |

| Request by HIA for further information from undertakings |

7 Days

| Assessment/analysis by HIA of returns |

| HIA report sent to Minister |

Min. 14 Days

| HIA report sent to Scheme Undertakings |

| No action required by Minister |

	Definite	Timesca	Timescale/Action for/by Undertakings
▢	Possible	Timesca	Timescale/Action for/by HIA
▨	Definite	Timesca	Timescale/Action for/by Minister
——	Possible		

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Assumption: Market Equalisation Percentage of 2% - 10% and RE Not Recommended

THE **HEALTH**
INSURANCE
AUTHORITY

| Six months to which returns relate |

30 Days

| Returns made by undertakings to HIA |

90 Days

| HIA report sent to Minister |

Min. 14 Days

| HIA report sent to Scheme Undertakings |

| No action required by Minister |

| Data adjustment sent to HIA for inclusion in future recalculations |

7 Days

| Error in returns found by undertaking |

Immediate Notification

| Error in calculations |

7 Days

| Report to Minister and undertakings |

| Request by HIA for further information from undertakings |

7 Days

Preliminary decision by HIA on recommendation to Minister

| Written notice given to undertakings |

21 Days

| Assessment/analysis by HIA of return/representations |

| Representations from undertakings |

7 Days

| Request by HIA for further information from undertakings |

Legend:

	Definite		Timesca	Timescale/Action for/by Undertakings
	Possible		Timesca	Timescale/Action for/by HIA
——	Definite		Timesca	Timescale/Action for/by Minister
- - - -	Possible			

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THE HEALTH INSURANCE AUTHORITY

Six months to which returns relate

30 Days

Returns made by undertakings to HIA

90 Days

HIA report sent to Minister

Min. 14 Days

60 Days

7 Days

Action by Minister (if deemed appropriate)

Data adjustment sent to HIA for inclusion in future recalculations

7 Days

Error in returns found by undertaking

Immediate Notification

Error in calculations

7 Days

Report to Minister and undertakings

Request by HIA for further information from undertakings

7 Days

Preliminary decision by HIA on recommendation to Minister

Written notice given to undertakings

21 Days

Assessment/analysis by HIA of return/representations

Representations from undertakings

7 Days

Request by HIA for further information from undertakings

HIA report sent to Scheme Undertakings

Preliminary decision by Minister to implement risk equalisation

Written notice given to undertakings

21 Days

Request by Minister for further information from undertakings

Representations from undertakings

Legend:

- ☐ Definite
- ☐ Possible
- — Definite
- --- Possible

- Timesca (blue) — Timescale/Action for/by Undertakings
- Timesca (orange) — Timescale/Action for/by HIA
- Timesca (green) — Timescale/Action for/by Minister

Assumption: Market Equalisation Percentage > 10%

Six months to which returns relate	

30 Days

Data adjustment sent to HIA for inclusion in future recalculations

7 Days

Error in returns found by undertaking

Immediate Notification

Error in calculations

7 Days

Report to Minister and undertakings

Returns made by undertakings to HIA

Request by HIA for further information from undertakings

7 Days

60 Days

Assessment/analysis by HIA of returns

Minister consults with HIA

HIA report sent to Minister

HIA report sent to Scheme Undertakings

Min. 14 Days

Preliminary decision by Minister to implement Risk Equalisation

Representations from undertakings

Written notice given to undertakings

21 Days

90 Days

Decision by Minister not to implement Risk Equalisation

7 Days

Request by Minister for further information from undertakings

Action by Minister (unless deemed inappropriate)

☐	Definite	Timesca Timescale/Action for/by Undertakings
☐ (grey)	Possible	Timesca Timescale/Action for/by HIA
——	Definite	Timesca Timescale/Action for/by Minister
– – –	Possible	

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Possible Timeline Under the Risk Equalisation Scheme, 2003 (1 of 4)
Assumption: Market Equalisation Percentage < 2%

THE **HEALTH**
INSURANCE
AUTHORITY

1 Jul 2003
Start of period
for first returns

1 Jan 2004
Start of period for
second returns

29 Apr 2004
First HIA report
to Minister

30 Jul 2004
Second returns from
insurers to HIA

Cycle continues as
long as MEP < 2%

31 Dec 2003
End of period
for first returns

30 Jan 2004
First returns from
insurers to HIA

30 Jun 2004
End of period for
second returns

28 Sep 2004
Second HIA report
to Minister
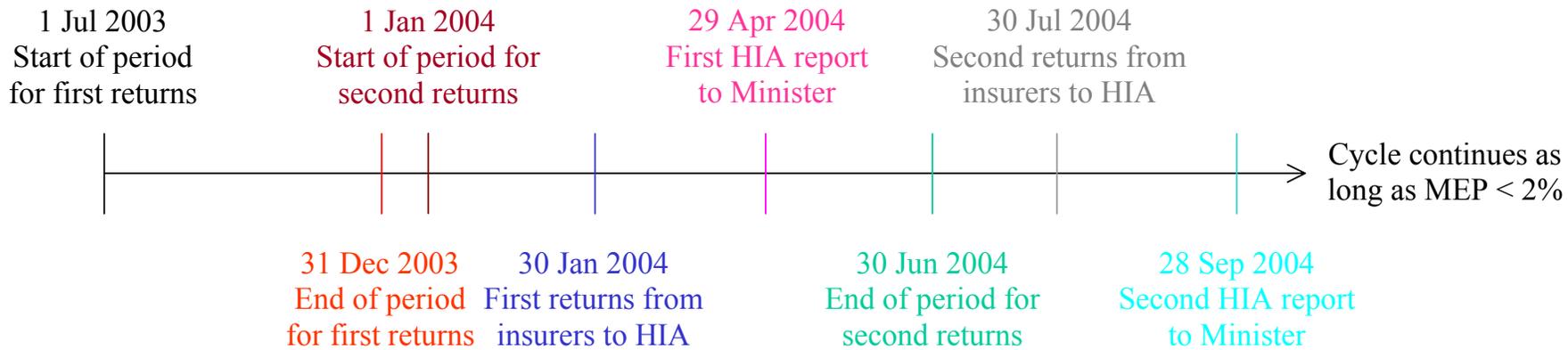
For further details of processes, see Possible Timetable 1 of 4 on page 35.

THE HEALTH
INSURANCE
AUTHORITY

1 Jul 2003
Start of period
for first returns

1 Jan 2004
Start of period for
second returns

29 Apr 2004
First HIA report
to Minister

30 Jul 2004
Second returns from
insurers to HIA

Cycle continues as
long as RE not
recommended

31 Dec 2003
End of period
for first returns

30 Jan 2004
First returns from
insurers to HIA

30 Jun 2004
End of period for
second returns

28 Sep 2004
Second HIA report
to Minister
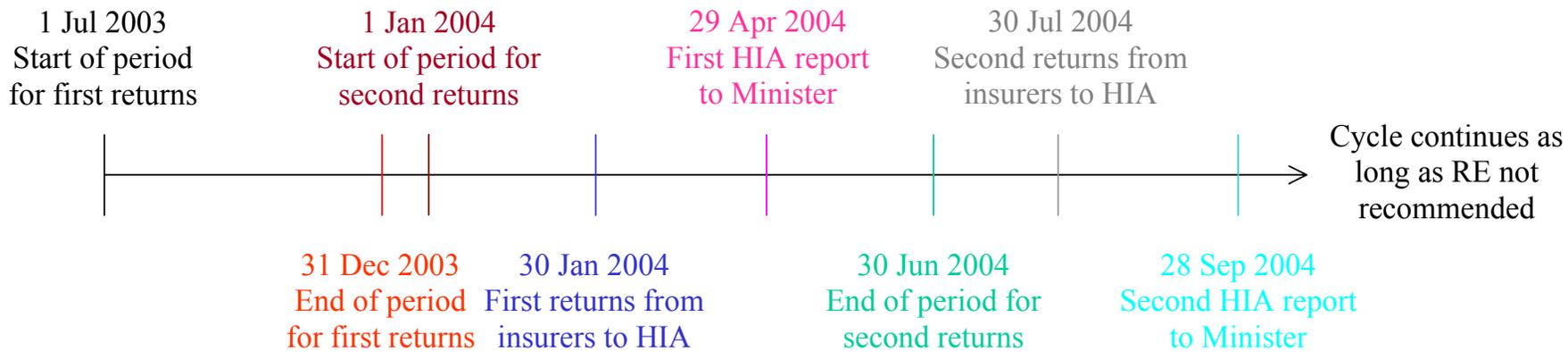
For further details of processes, see Possible Timetable 2 of 4 on page 36.

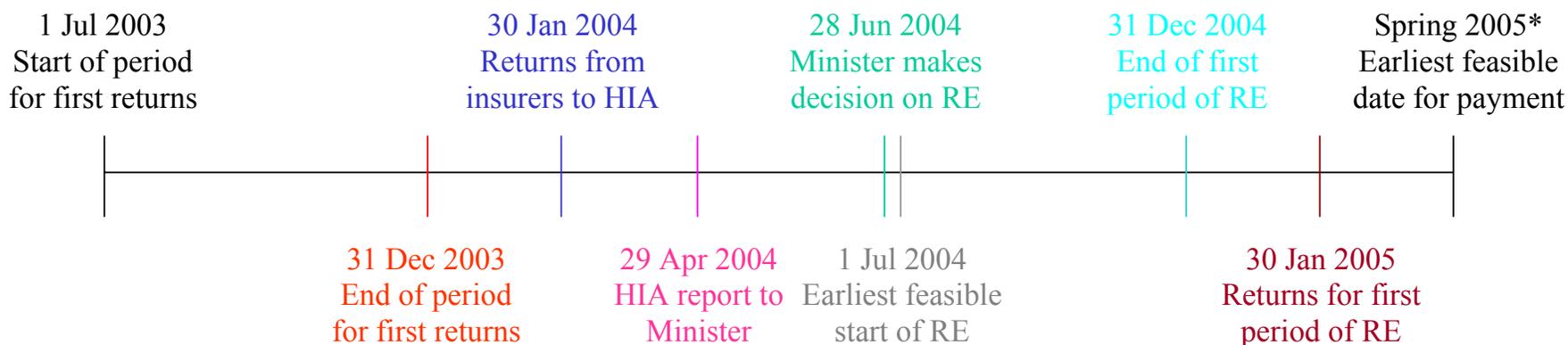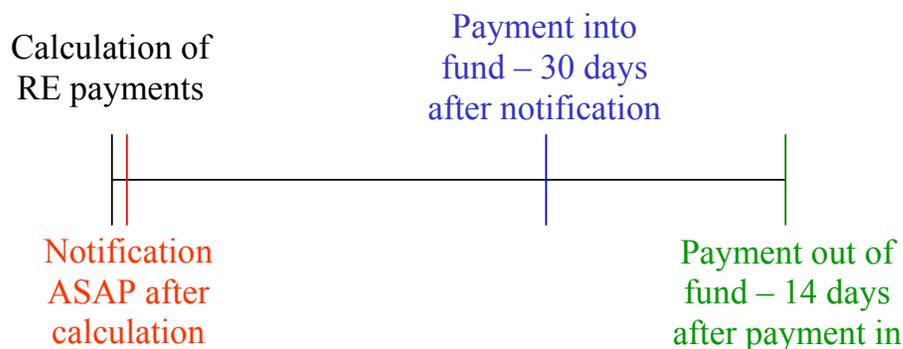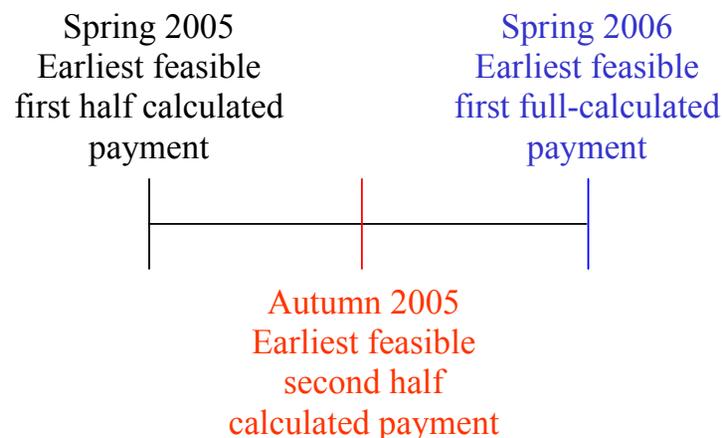# Possible Timeline Under the Risk Equalisation Scheme, 2003 (3 of 4)
Assumption: Market Equalisation Percentage of 2% - 10% and RE Recommended/Implemented

THE HEALTH
INSURANCE
AUTHORITY

1 Jul 2003
Start of period
for first returns

30 Jan 2004
Returns from
insurers to HIA

28 Jun 2004
Minister makes
decision on RE

31 Dec 2004
End of first
period of RE

Spring 2005*
Earliest feasible
date for payment

31 Dec 2003
End of period
for first returns

29 Apr 2004
HIA report to
Minister

1 Jul 2004
Earliest feasible
start of RE

30 Jan 2005
Returns for first
period of RE

* Payment Procedure

Calculation of
RE payments

Payment into
fund – 30 days
after notification

Notification
ASAP after
calculation

Payment out of
fund – 14 days
after payment in

* Phasing Arrangements

Spring 2005
Earliest feasible
first half calculated
payment

Spring 2006
Earliest feasible
first full-calculated
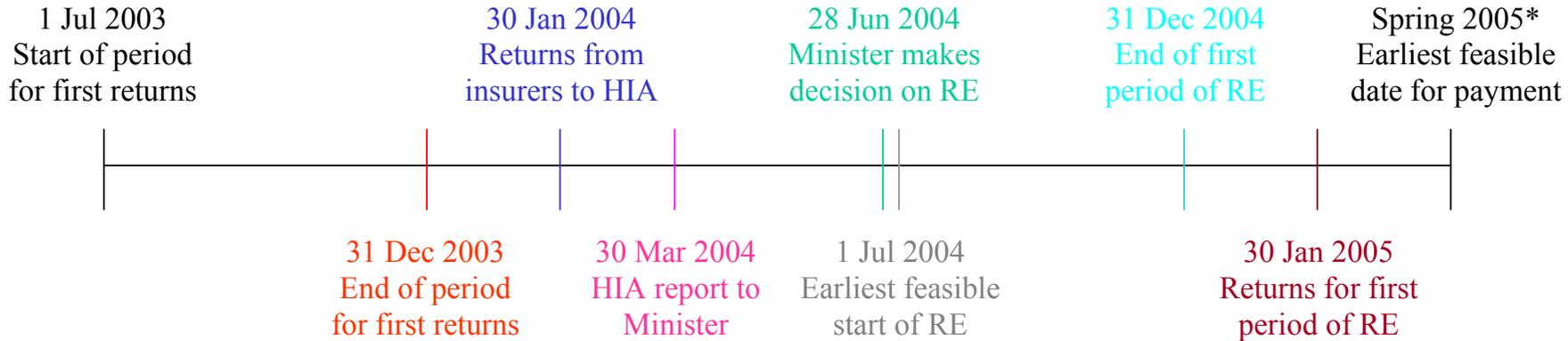payment

Autumn 2005
Earliest feasible
second half
calculated payment

Note: Phasing arrangements are listed for existing scheme undertakings. Different phasing arrangements apply for new entrants.

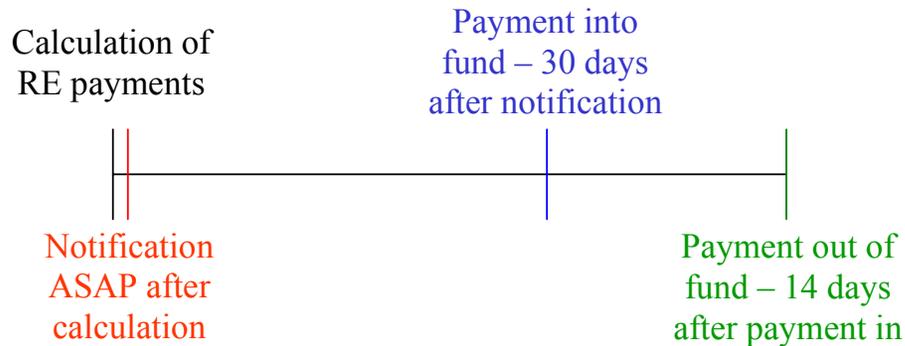# Possible Timeline Under the Risk Equalisation Scheme, 2003 (4 of 4)
Assumption: Market Equalisation Percentage > 10% and RE Implemented

THE HEALTH
INSURANCE
AUTHORITY

1 Jul 2003
Start of period
for first returns

30 Jan 2004
Returns from
insurers to HIA

28 Jun 2004
Minister makes
decision on RE

31 Dec 2004
End of first
period of RE

Spring 2005*
Earliest feasible
date for payment

31 Dec 2003
End of period
for first returns

30 Mar 2004
HIA report to
Minister

1 Jul 2004
Earliest feasible
start of RE

30 Jan 2005
Returns for first
period of RE

* Payment Procedure

Calculation of
RE payments

**Payment into
fund – 30 days
after notification**

Notification
ASAP after
calculation

**Payment out of
fund – 14 days
after payment in**

* Phasing Arrangements

Spring 2005
Earliest feasible
first half calculated
payment

Spring 2006
Earliest feasible
first full-calculated
payment

Autumn 2005
Earliest feasible
second half
calculated payment

Note: Phasing arrangements are listed for existing scheme undertakings. Different phasing arrangements apply for new entrants.

For further Details of processes, see Possible Timetable (4 of 4) on page 38.