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GROUP PERMANENT HEALTH INSURANCE

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1. Introduction

The Group PHI market has been subject to booms and slumps as internal and external factors have in turn stimulated or depressed the market. The 1970's saw a boom in group sales as pay restrictions forced employers to look at other benefits as a means of attracting and retaining staff. In the second half of the 1980's a number of insurers were forced through poor claims experience to increase rates dramatically and some even withdrew from the market altogether. Since then the Group PHI market has been on a more even keel and it is hoped that this paper will assist insurers in maintaining this equilibrium.

Group PHI is both a practical and technical subject and this paper aims to achieve a reasonable balance.

A number of individuals have assisted us in producing this paper. We are particularly indebted to Mike Eves and Sarvjit Samra for their help in researching this paper and Jonathan Piper for his comments on our initial draft. Last, but by no means least, we would like to thank Sue Pearson for her patience with the numerous drafts of this paper. Any errors in the paper however, are acknowledged solely as our own.

2. Product Design

2.1 Traditional Group PHI is purchased by employers as indemnification against their liability to provide benefits to employees whilst they are disabled.

This type of arrangement normally has the following features:

* Benefits are based in some way on the employee's pre-disability earnings and are principally designed to provide a replacement income. Benefits may also be provided to meet pension fund and National Insurance Contribution liabilities.

* Benefits are payable to the employer who applies them as appropriate.

* Benefit payments commence after an employee has been disabled, in accordance with the policy conditions, for a pre-determined interval of time - the deferred period.

* Benefits may increase whilst in payment in a pre-determined way or may remain level throughout.

* Benefits continue to be paid whilst the employee is disabled until he or she recovers, dies or attains the benefit termination age. The benefit termination age is most commonly the employee's normal retirement age.

* Owing to competitive pressures and employers' preference for comprehensive coverage, policy exclusions are kept to a minimum.

* Employers', employees', intermediaries' and insurers' desire for simplicity has resulted in the data required to calculate the premiums payable and the evidence provided in relation to each employee's state of health, being kept to a minimum.

2.2 With the exception of employee's evidence of health which is considered in section 4, the main product design features are considered in the remainder of this section.

2.2.1 **Definition of Disability**

The definition of disability used to assess claims is clearly fundamental. There are three basic types of definition used in the UK, although their precise wording often varies.

"Own Occupation" Definition

"Totally unable by reason of sickness or accident to follow own occupation and not undertaking any other occupation".

This is the most common and generous definition used and is perhaps the most appropriate from both the employer and employees' points of view, because benefits are payable if the employee is unable to carry out his or her own occupation, irrespective of whether he or she is able to undertake any other occupation.

"Suited" Definition

"Totally unable by reason of sickness or accident to follow any occupation for which the policyholder is reasonably suited by education, training or experience and is not undertaking any other occupation".

For many employees this definition is less generous than the "own occupation" definition. However for older employees in blue collar occupations it can be argued that they are only suited to their own occupation because they have spent their entire working life in one type of job while for individuals in senior positions it can be difficult to draw the line between "suited" and "unsuited". Difficulties can also arise where the disabled life is capable of alternative employment, but no suitable opportunities exist.

"Any Occupation" Definition

"Totally unable by reason of sickness or accident to follow any occupation".

This is the most stringent of definitions.

Whilst all the definitions of disability in common use require a certain degree of subjectivity, this definition perhaps requires the most, because if interpreted strictly, few, if any, claims would be paid. This interpretation would clearly be unreasonable.

In the absence of alternatives however, the use of this definition may be appropriate in certain circumstances and some of these are highlighted in section 9.6.

"Switched" Definitions

A number of insurers nowadays adopt a switched definition of disability, particularly in relation to certain kinds of blue collar work and certain specialised occupations. This entails the use of a more generous definition of disability for the first one or two years of claim, which thereafter switches to a more stringent definition.

This approach enables a more extensive PHI coverage to be offered during the earlier durations, which is arguably the period when PHI benefits are most needed, and encourages employees who only have minor disabilities to find alternative employment prior to the more stringent definition becoming effective. Moreover, a switched definition of disability allows insurers an additional and clear opportunity to re-evaluate the validity of a claim at the date the definition switches.

2.2.2 **Proportionate Benefits**

The majority of Group PHI contracts include the facility to pay a reduced benefit in situations where an employee suffers partial loss of earnings as a result of disablement.

This may arise where an individual is disabled to an extent which prevents him or her from carrying out his or her normal occupation but is either able to work in the same employment on a reduced basis or is able to take up alternative yet less remunerative work. Complications may arise in the latter case however, if the employee ceases to be employed by the sponsoring employer.

Proportionate benefits may enable a disabled employee to take up some form of employment without suffering a financial loss. This may improve his quality of life while for the insurer it is clearly advantageous to pay a proportionate rather than a full benefit.

2.2.3 **Benefit Levels**

The benefits insured under a Group PHI may be divided into the following three categories.

(i) Income benefits

The income benefits are intended for immediate consumption by disabled employees and may be expressed in two basic ways.

Percentage of gross salary less an offset

The percentage of gross salary will generally be in the range 50-75%. The offset may be zero although it is more commonly related to State invalidity benefits. If the offset allows for the actual State benefits an individual is entitled to, the benefit is often referred to as being fully integrated. However, an offset simply equivalent to the Single Persons State Invalidity Benefit (SPSIB) is the most common.

Net Pay

PHI benefits are set at an initial level which, after the deduction of tax, National Insurance and pension fund contributions and the addition of the actual State invalidity benefits payable, equate to a flat percentage (commonly 85% or 90%) of each claimant's total net pre-disability income.

Net pay contracts are considered in more detail in section 11.

* * *

The benefit bases described above are often limited to a maximum benefit formula, which is commonly expressed in the form:

> 75% of salary less SPSIB and/or 66.67% of salary up to a defined salary level plus a lower percentage of salary in excess of this amount up to a maximum total monetary annual benefit.

* * *

Despite the fact that pension fund contributions and National Insurance Contributions payable by the employee are deducted from pre-disability salary, some insurers will also specifically cover these contributions over and above the income benefits referred to above.

(ii) Employer's Pension Fund Contributions

The regular long term pension fund contributions payable by an employer up to certain defined maximum may also be insured under a Group PHI scheme.

(iii) Employer's National Insurance Contributions

Insurers are also usually prepared to insure the National Insurance Contributions payable by employers in relation to disabled employees. These contributions should be calculated in relation to the PHI income benefits rather than pre-disability salary.

Definition of Salary

Salary for the purpose of calculating Group PHI benefits, may be defined in a number of ways which range from basic salary to salary inclusive of all fluctuating emoluments.

Moreover, salary may be defined at a particular point in time, such as the 1st January and assumed to remain constant for the policy year or may be defined as the level applying at the date of disablement.

2.2.4 Exclusions

As was commented previously, Group PHI policy exclusions are generally kept to a minimum. Indeed, some insurers will normally only impose restrictions on overseas residence and an HIV/AIDS exclusion and will even consider removing these in certain circumstances.

AIDS/HIV

The majority of insurers make some provision for AIDS in their policy wordings and, although exclusion wordings vary, the usual approach taken is to exclude either all claims where the disabled life is infected by HIV or only those which arise directly or indirectly as a result of HIV infection.

Residence

Because of the greater risk of disablement in certain parts of the world, allied to the difficulties in controlling claims at long distance, insurers will usually define the geographical areas where the morbidity risk is covered without restriction.

Other Exclusions

Other exclusions which are sometimes imposed include pregnancy; war, riots, civil commotion etc; self-inflicted injury; failure to follow medical advice; excessive alcohol use; misuse of drugs; aviation other than as a fare paying passenger and racing other than athletics or swimming.

2.2.5 Other Policy Conditions

Deferred Period

By far the most common deferred period offered under Group PHI contracts is 26 weeks or 6 months, with the employer making alternative arrangements to pay shorter term disability benefits. Other common deferred periods are 13 weeks, 28 weeks, 52 weeks and 104 weeks.

A deferred period of 28 weeks has the advantage that it dovetails with the state invalidity system.

Expiry Age

Cover is usually provided up to normal retirement age. Consequently, the majority of schemes have been written on the basis of a male expiry age of 65 and a female expiry age of 60. However, there are a number of occupations which are associated with lower retirement ages and as a result of the GRE/Barber case, some employers have extended coverage for females beyond age 60. Clearly difficulties arise when individuals have an option to choose a retirement age within a specified band.

Escalation of Benefits

The initial benefits payable are based on an employee's pre-disability scheme salary. The value of such benefits will diminish in real terms over the period they are payable and, consequently, benefits are often designed to escalate by a defined percentage each year.

The escalation rate is normally set at a fixed rate (up to 8.5% p.a.) subject to a maximum level equivalent to the rise in the retail price index in any one year.

3. The Sales Process

3.1 Group PHI business may be sold by insurance personnel or their sales representatives to employers but the majority of schemes are placed by independent intermediaries. This is particularly the case for the larger schemes.

3.2 For most schemes, intermediaries will obtain quotations from a panel of insurers and, following this, produce a report for the sponsoring employer explaining the relative merits of each insurer's terms and making recommendations as to whom the business should be placed with.

3.3 To determine the panel to be used, intermediaries will from time to time, attempt to assess the relative competitiveness of each insurer. Different panels may apply for different types of schemes - recognising the fact that some insurers are more competitive for certain types of schemes than for others.

3.4 In view of the importance of the role played by intermediaries, insurers interested in writing significant volumes of new Group PHI business must convince intermediaries of their value. This does not merely mean quoting competitive terms, but also convincing the intermediary that they can provide good administrative services and operate acceptable claims control procedures. In addition, insurers can seek to provide "added value" such as providing employer announcements although, in reality, greater benefit is perhaps gained from developing good personal relationships with the intermediary.

3.5 Commission payable by the insurer to the intermediary is fairly standard in the market at a rate of 12% of premiums. However, consultants and intermediaries, particularly in relation to the larger schemes, may accept a fee from the employer for their services and consequently, no commissions will be requested from the insurer or any commissions paid will be refunded to the employer.

4. Underwriting Procedures

4.1 The parties involved with insuring Group PHI benefits are usually keen to keep matters as simple as possible. This applies particularly to the provision of evidence of health requirements. Indeed, the underwriting requirements of an insurer, after premium rates, is often the most important factor in placing a scheme.

4.2 The method usually employed to simplify an insurer's evidence of health requirements is to offer a free cover level. A scheme's free cover level may be defined as the maximum amount of annual benefit which will be provided in respect of each individual scheme member without evidence of health being obtained.

4.3 The next section considers free cover levels in some detail and, amongst other things, illustrates that free cover levels expose an insurer to the possibility of anti-selection on a significant scale. In order to limit this risk, a free cover level is usually only offered if a number of conditions are satisfied. The more important of these conditions include:

(i) Individuals should only be covered according to non-selective eligibility conditions.

(ii) Each individual's cover should be defined on a non-discretionary basis.

(iii) If the eligibility conditions do not necessitate compulsory membership of a scheme, then additional safeguards are normally introduced in order to ensure that there is a reasonable take-up rate of those eligible and new entrants to a scheme only benefit from a free cover level if they join when they first become eligible. In the event that the take-up rate is not considered sufficient, insurers will normally tighten their underwriting procedures.

A special case of "voluntary" membership arises when eligibility of the Group PHI scheme is conditional on being a member of the sponsoring employer's pension scheme and this is briefly considered in section 4.7.

(iv) Each individual member satisfies an "actively at work" condition. The intention of "actively at work" conditions is to prevent any coverage being granted to individuals who are obviously already in poor health. This aspect is further considered in section 4.6.

4.4 Benefits above the Free Cover Level

If an individual is to be insured for benefits which are in excess of the free cover level, the excess benefits are individually underwritten.

On these occasions, it is common practice to carry out some degree of forward underwriting so that, once an individual has been underwritten, no further medical evidence is obtained until the extra cover resulting from future salary increases, exceeds a specified amount, known as the underwriting bar. A typical underwriting bar for Group PHI is currently £5,000 p.a. Some insurers will impose a restriction on forward underwriting by allowing increases without underwriting for a maximum period of time, such as 3 years.

The medical evidence obtained is generally based on the total benefits which will be offered in excess of the free cover level before any further underwriting is expected to take place, although the total insured benefits are sometimes considered in relation to underwriting for AIDS.

If, after underwriting, an individual is discovered to be a substandard risk, the options open to the insurer are similar to those applying in relation to individual PHI business in that the coverage may be declined, postponed, excluded for certain conditions and/or accepted on standard or increased premiums.

The only difference is that the terms of the coverage already offered via the free cover level or benefits previously underwritten cannot theoretically be changed.

In the case where coverage has been provided by a previous insurer after obtaining evidence of health, the new insurer will normally consider taking over this coverage on terms which are no worse than previously offered. However, nowadays, each insurer's practice tends to vary in this respect with individual consideration often being given to each case.

During the period whilst an individual is being underwritten full coverage will be provided up to the free cover level together with any previously underwritten existing benefits. Depending on each insurer's procedures, coverage in excess of this amount may be withheld; may be provided on an "accident only" basis or provided on an accident and sickness basis subject to a pre-existing conditions exclusion.

4.5 Changes In Free Cover Level

The free cover level offered may increase or decrease over time for a number of reasons. For example, a revised free cover level basis may be introduced by the insurer or there may be changes in the characteristics of a scheme.

In the case where the free cover level is increased, the insurer must decide how to treat any loadings applied to previously underwritten benefits. It may be argued that the normal premium rates include an allowance for a proportion of substandard lives and consequently, any substandard ratings up to the free cover level may be waived - a process sometimes referred to as "white-washing". In practice however, an insurer may decide to incorporate any ratings within the scheme premium and, in cases where highly substandard risks are involved, may decide against offering an increased free cover level.

4.6 Actively At Work Conditions

4.6.1 Newly Insured Schemes

In the case of newly insured schemes there is clearly a risk that the sponsoring employer is setting up the scheme to abuse the free cover level being granted, by obtaining cover within the free cover level for employees who are already in poor health. One of the main attempts by an insurer to minimise this risk is to impose an actively at work condition.

This normally takes the form of requiring each individual to be in full active employment on the day or a day adjacent to the date the scheme commences and having an attendance record in the recent past which does not indicate that the individual is in poor health. A typical clause in this respect might state that this condition is fulfilled provided that an individual has not been absent from work as a result of sickness or injury for a period of more than five consecutive days in the past three months.

Insurers may adjust the actively at work conditions imposed in relation to the size of each scheme. The justification for this is that positive anti-selection is more likely with the smaller schemes where the sponsoring employer is likely to know each individual personally. Furthermore, it is possibly easier to establish a smaller rather than a larger scheme.

In the event of individuals failing the actively at work condition, insurers will normally obtain satisfactory evidence of health prior to offering any coverage in relation to the individuals concerned. Satisfactory evidence of health may, depending on the circumstances, entail the completion of a defined period of continuous working, the completion of a simple declaration of health or the provision of more detailed medical evidence.

4.6.2 Existing Schemes

In the case where a scheme is replacing an existing arrangement with another insurer, the new insurer is again likely to be less exposed to a blatant abuse of the free cover level offered and consequently, the actively at work condition may be weakened.

Moreover, there is a practical requirement to impose the least onerous actively at work condition possible, because any such condition could represent a break in the coverage provided to the sponsoring employer. This clearly would provide an argument for maintaining the scheme with the existing insurer.

As a result, many insurers will only require individuals to be actively at work on a specified working day on or adjacent to the day the scheme is taken over. Lives who do not satisfy this requirement are generally covered once they return to work on a full-time basis.

In the event that the lives concerned do not return to work, they remain the previous insurer's liability and a life returning to work, but then falling sick again under the previous insurer's linked claim provisions would generally remain the previous insurer's liability until the deferred period under the new insurer's contract has expired.

4.7 Eligibility conditions dependent upon the membership of the sponsoring employer's pension scheme

On the occasions when employers restrict the PHI coverage to members of the company pension scheme, the Group PHI scheme is to some extent voluntary.

If however, a significant proportion of eligible employees actually join the pension scheme and entry to the Group PHI scheme is conditional on joining when an employee first becomes eligible, the scheme can usually be treated as a compulsory although it seems prudent to hold full membership records of each insured life.

If only a small percentage of individuals join the pension scheme, the risk of an anti-selective claim is proportionately increased and, consequently, there is an argument to tighten the insurer's normal underwriting conditions applying to a compulsory scheme.

5. Free Cover Levels and their Financial Implications

5.1 Reasoning Behind Free Cover Levels

In order to be competitive in the Group PHI market it is necessary to offer free cover levels and this in itself, is perhaps justification for offering them, with premium rates being adjusted to cover any resulting change in the expected profitability of the business. (An increase in claims experience might be expected, but this will be offset in part by a reduction in underwriting costs).

More fundamentally however, offering a free cover level has a number of advantages to the insurer, the employer and the employee. The main ones are perhaps the following:

(i) The insurer avoids the necessity of having to assess each individual's state of health - imagine the havoc which might be created if an insurer had to medically underwrite, over a short space of time, all the members of a newly insured 2,000 life scheme!

(ii) The employer does not have to obtain medical evidence from each of his employees and may be able to insure a higher proportion of his staff than might be possible if full underwriting had taken place.

(iii) It is unnecessary for the majority of employees to be subjected to the inconvenience of having to attend medical examinations.

5.2 The Dangers Of Offering Free Cover Levels

There are basically two dangers of offering free cover levels:

(i) Employers blatantly abuse the free cover level offered to secure coverage in relation to individuals who are already in clearly poor health - positive anti-selection.

(ii) Owing to random variations, it transpires that the business written consists of a portfolio of lives who, overall, are in a poorer standard of health than that assumed in the pricing basis - passive anti-selection.

5.3 Positive Anti-Selection

The previous section detailed a number of conditions which insurers generally require to be satisfied before offering a free cover level. To some extent these conditions reduce both the dangers listed above, but particularly the risk of positive anti-selection.

Great importance should be attached to these conditions, although it is perhaps impossible to use them to totally eradicate the risk of positive anti-selective claims. One extreme example of a positive anti-selective claim suffered in practice, serves to demonstrate this point.

The anti-selective claim in question arose from a fairly small scheme (in the region of 20 to 30 lives) which was set up on the basis of an insurer's standard terms, including a free cover level in the region of £25,000 p.a.

Six months after the inception date, coincidentally the same length of the deferred period, a claim was presented in relation to an individual aged 30, with an insured benefit just under the free cover level who was suffering from multiple sclerosis and in all likelihood, had been for some time. As all the insurer's conditions intended to prevent anti-selection had been met and the claim clearly satisfied the definition of disability, the claim was admitted. This left the insurer with a liability to pay a sizeable claim, which in all likelihood would last for a significant number of years. To make matters worse, the scheme was subsequently cancelled and after investigation, the insurer discovered that the disabled life was the son of the sponsoring company's managing director, although this knowledge still did not enable the insurer to refute the claim.

Fortunately, extreme examples such as the above are few and far between, and providing the underwriting requirements of most Group PHI insurers are similar, positive anti-selective claims, in all probability, be spread across the entire market.

Nonetheless, insurers should always consider the effect anti-selective claims could have on their portfolio of business and this is possibly one reason for restricting the levels of free cover offered.

5.4 Variations In The Overall Standard Of Health Within A Scheme

Putting to one side, the risk of positive anti-selection, the membership of any scheme will consist of lives with varying degrees of fitness.

An insurer's basic tabulated rates and scheme underwriting adjustments, which are considered in some detail in later sections of this paper, are designed to calculate premiums which it is hoped will be appropriate for all schemes with certain risk categories.

These risk categories will include such aspects as each individual's age, sex, occupation and location of work.

Most significantly, as far as this section is concerned it will also assume a distribution of individuals' standard of fitness about the norm for the risk category being considered.

To take a simple example, an insurer's premiums might intrinsically assume the following distribution of fitness:

Percentage of Membership weighted by Insured Benefits	Standard of Health (Expressed as a percentage of the average)
10%	0.50
20%	0.75
40%	1.00
20%	1.25
10%	1.50

If an insurer could be certain that his entire portfolio would always conform to this profile, then the need to carry out any medical underwriting would be diminished. This is clearly never the case and to rectify this, insurers attempt to increase the probability of their entire portfolio conforming to this profile by offering free cover levels which vary according to the characteristics of each scheme. Possibly the two most important characteristics in this respect are, the number of scheme members and the distribution of insured benefits.

For example, assuming all insured benefits are set at the same level for the entire membership of a scheme, it is apparent that the health profile of a 100 life scheme is more likely to approximate to the above profile than a 10 life scheme.

Similarly, if the benefits insured under a scheme are not constant but are widely distributed, the scheme may be thought to consist of a number of smaller schemes with constant or similar benefit levels. Each of these are less likely to conform to the overall fitness profile assumed and, consequently, the entire scheme is also less likely to do so.

5.5 Free Cover Level Bases Adopted In Practice

Defining a suitable basis for determining the free cover level to be offered to different schemes is by no means straightforward and this is perhaps reflected in the fact that there are almost as many free cover level formulae in use as there are insurers.

The format of the majority of bases in use are however largely similar and may be expressed as:

(i) A multiple of the average sum assured with this multiple increasing with the number of lives insured, and

(ii) A maximum monetary free cover level calculated as a fixed amount plus an amount based on the number of scheme members.

The following table indicates the type of free cover level available for different sizes of scheme and also the maximum free cover level generally available in the market. These are expressed in terms of benefits, although they can equally be expressed in terms of salaries.

Number of Lives	Free cover level as a multiple of average sum insured	Overall Maximum free cover level (p.a.)
5	1	£7,000
15	1.5	£20,000
25	2.5	£40,000
50	3.5	£50,000
100	6.5	£60,000

5.6 Implications of Competitor's Free Cover Levels

It is interesting to consider what happens if an insurer offers free cover levels which are higher or lower than market levels.

A decision to offer a free cover level higher than that generally available in the market will increase the chances of the insurer suffering positive anti-selective claims and of insuring a portfolio of lives which does not conform with the assumed fitness profile of lives.

Conversely, an insurer offering a free cover level lower than market levels may be able to offer more competitive premium terms. However, to the employer and the intermediary there are considerable advantages in avoiding the inconvenience of having to provide medical information and this may more than offset any resulting reduction in premium rates.

6. Pricing Approach

6.1 Premiums for a scheme are typically calculated using a basic set of tabulated rates. The resulting premiums are then adjusted to take account of the individual characteristics of each scheme. The process of determining which adjustments should be made, is commonly referred to as "Scheme Underwriting".

6.2 Sections 8 and 9 consider each of these components in some detail and the following section summarises how premiums are expressed by insurers to sponsoring employers.

7. Premium Rating Methods

7.1 The premiums payable under a Group PHI scheme are typically expressed in one of two ways. The approach taken is often determined by the size of the scheme.

7.2 Age-Specific Rating Approach

This approach will usually be applied where the scheme has fewer than 20 or 30 lives. Premiums are calculated individually for each scheme member, based on age, sex, and initial amount of benefit at the beginning of each scheme year.

At the end of the year or perhaps at more frequent intervals, an adjustment premium is calculated to take account of increases in coverage and, new entrants and withdrawals.

The age-specific rates used will typically be guaranteed for 2 or 3 years.

7.3 Unit-Rating Approach

The unit-rating approach will be used for larger schemes and involves a census method of costing. The initial premium payable at the beginning of a rate guarantee period, would be calculated as outlined above in relation to the age-specific rating approach. However, at the same time as the initial premium is determined, a unit-rate is calculated. This is merely the initial premium divided by the total benefits or salary roll applying at the beginning of the year.

Future premiums payable throughout the remainder of the rate guarantee period are then calculated as the product of the unit-rate and an estimate of the benefits at risk during each policy year. These will often be calculated as the average of the total benefits or salary at the beginning and end of the policy year.

This calculation assumes benefit increases, new entrants and withdrawals occur on average half-way through the policy year; and clearly suitable amendments should be made if this is not thought to be the case.

The use of a unit-rate assumes that the sex and age profile of a scheme remains the same throughout the rate guarantee period. This is often appropriate as new entrants are likely to be younger than lives retiring or otherwise withdrawing from the scheme and this may offset the general ageing of the remaining members.

It is however, prudent to reserve the right to recalculate the unit-rate if there are significant changes to the scheme during the rate guarantee period which is typically 2 or 3 years. For example, if:

(i) The scheme membership profile changes outside specified parameters

or (ii) There is a material change in the eligibility conditions or benefit structure.

8. Construction of Basic Tabulated Rates

8.1 An insurer's basic tabulated rates may be determined from a number of constituent parts:

Expected Claims Costs
Interest
Expenses
Commissions
Profit and Contingencies.

8.2 Expected Claims Costs

8.2.1 Pricing Method

Traditionally, there have been two methods of calculating expected disability income claims costs, namely the "Manchester Unity" sickness rates approach and the "American" inception/disabled life annuity approach.

The recent Continuous Mortality Investigation Report Number 12 (CMIR12) however, developed the concept of a multi-state model and demonstrated that the two traditional approaches are effectively different calculation methods within the same sickness model.

As Group PHI business is primarily written on a "risk premium" basis, it naturally lends itself to the inception/disabled life annuity approach of calculating expected claims costs. This is the method favoured by the leading Group PHI insurers and consequently, this section largely concentrates on this approach.

8.2.2 Inception/Disabled Life Annuity Approach

Calculating the expected claims costs for a specified age and period of exposure (often taken as one year) by the inception/disabled life annuity approach involves calculating the product of:

(i) The inception rate, which is the probability of a claim, and
(ii) The disabled life annuity, which is the present value of the expected claim payments of an "average" claim.

8.2.3 **Data Sources**

An office's own Group PHI experience should ideally be used as a basis for calculating expected claims costs. If such data is unavailable or is not sufficiently credible or reliable, then alternative data sources need to be considered.

Own Office's Experience

Very few offices have sufficient data in an appropriate form, and the systems to analyse the data, to calculate expected claims costs without reference to alternative sources of data.

Varying approaches to marketing, underwriting and claims handling result in experience which differs significantly by office and this means it is necessary to modify published data, in the light of an office's own experience. At the simplest level, this may only involve adjusting the inception rates and perhaps the claim termination rates at the earlier durations.

The monitoring of an insurer's own experience is particularly important in relation to Group PHI business and this is considered in further detail in section 13.

Insurers may also seek to use the leading offices' experience by analysing and making suitable adjustments to their published tabulated rates. To do this however, insurers have to make assumptions concerning the scheme underwriting adjustments being made, be confident that the published rates are indeed being used and the leading offices are correctly analysing and interpreting their own experience.

UK Published Data

The amount of published UK Group PHI experience is limited and consequently UK Individual PHI data sources are also considered below:

CMI Experience

When considering the development of Group PHI rates using the inception/disabled life annuity approach the most relevant statistics available from CMI reports are as follows:

Group Experience

CMIR5 and CMIR8 contain claim inception rates and in addition, CMIR8 developed graduated claim inception rates from the 1975-78 data. Deferred 52 week graduated inception rates were not derived owing to the sparsity of data.

Great care has to be taken when using this data for a number of reasons, not least:

(i) The data consists of a mixture of level annual premium business and growing amounts of recurrent single premium business, but does not include any unit-rated experience, owing to difficulties in collecting exposed to risk statistics, which nowadays represents a significant proportion of the total Group PHI business written.

(ii) The volume of data is fairly small and, as CMIR8 states, it is possible that bias has been introduced as a result of the presence of a few large schemes which may have either very light or very heavy morbidity.

Individual PHI Experience

CMIR7 and CMIR12 give graduated claim inception rates which were derived from data relating to the period 1975-78. Perhaps more importantly CMIR12 includes the first UK published claim termination rates.

In addition to the published reports, the CMI bureau supplies annual reports to contributing offices and so these might also be available when attempting to determine expected claims costs.

It is the CMI bureau's intention to publish the results of their analysis using the basis described in CMIR12 for individual male experience 1979-82, female experience for 1975-78 and 1979-82 and group single premium and unit-rated experience 1975-78 and 1979-82 in the near future.

Only a sample of the results of the group analysis is currently available in the form of a comparison with CMIR12 results and this is shown in Appendix 1.

Social Security Statistics

The UK Social Security system provides sickness and invalidity benefits to disabled lives and details of the payments made are included in "Social Security Statistics" which is published on a regular basis. Unfortunately, the information is provided in a form which cannot easily be used to calculate expected claims costs. Nevertheless, secular trends may be observed although judgement is required as to whether these can be transferred to insured experience.

Overseas Published Data

The UK data available at the present time clearly has a number of shortcomings and consequently, practitioners often consider overseas published data sources. In view of the similarities between the UK and US and the extent of US data available, many practitioners use US data and the principle sources are considered below:

1987 Commissioners Group Disability Table (1987 CGDT)

This table is the first disability table based on Group experience to be adopted by the National Association of Insurance Commissioners as a standard for valuation purposes.

The development of 1987 CGDT followed on from the development of the Commissioners 1985 Disability Table A (1985 CIDA).

The incidence rates and termination rates for the first 24 months of claim are based on 1975-80 data although a wider range of data sources were analysed before producing termination rates for the longer durations.

Inception and termination rates are given by sex and deferred period (3, 6 and 12 months). In addition, basic and valuation termination rates are given. The valuation rates being 90% of the basic table during the first five years, grading into the basic table rates in the eleventh and later years. Termination rate adjustment factors for reserving purposes are also suggested for differing occupational classes, industries and replacement ratios.

1985 CIDA

1985 CIDA is intended to be used for valuing claim and active life reserves for individual business.

Though not designed for Group business, the amount of data available, the ease with which it can be manipulated and, the fact it was widely available when many insurers held an extensive rate review in the mid to late 1980's, means that a number of insurers' basic tabulated rates are still based on this table.

* * *

Both 1987 CGDT and 1985 CIDA include tables designed for pricing and valuation purposes. The calculations in this paper are all based on the pricing tables.

* * *

Annual Reports of the Committee on Group Life and Health Insurance published in the Transactions of the Society of Actuaries

These reports contain regular analyses of Group PHI experience contributed by a number of insurers.

Other US data

Other US data sources which may be of interest include the Social Security Experience Study, the Society of Actuaries group waiver of premium data and the Intercompany Disability Waiver of Premium Study.

8.2.4 Brief Analysis of Data

The following tables give a comparison of the male inception and claim termination rates derived from the main data sources described above.

Inception Rates

The table below shows a comparison of CMIR7 Individual PHI Graduated Rates and CMIR8 Group PHI Graduated Rates (Rates per 10,000 lives exposed)

	Deferred 13 Weeks			Deferred 26 Weeks		
Age	CMIR7	CMIR8	CMIR8/CMIR7 (%)	CMIR7	CMIR8	CMIR8/CMIR7 (%)
27	13	11	85	5	4	80
32	20	15	75	6	4	67
37	28	22	79	7	6	86
42	37	34	92	10	10	100
47	50	55	110	16	19	119
52	69	90	130	28	39	139
57	104	141	136	52	75	144
62	182	209	115	102	127	125

From the above table it can be seen that overall ratios of Group to Individual Inception Rates tend to increase with advancing age.

Intuitively, this might be expected because anti-selection is a greater proportionate risk at the younger ages for individual PHI business while early retirement type claims are more likely to be suffered at the older ages under Group schemes.

A similar pattern can also be seen by comparing male US 1985 CIDA and 1987 CGDT data. (Rates per 10,000 lives exposed):

	Deferred Period 90 Days		
Age	1985 CIDA	1987 CGDT	CGDT/CIDA(%)
27	16.63	15.70	94
32	15.14	18.00	119
37	18.11	23.38	129
42	25.86	33.27	129
47	40.21	53.83	134
52	64.50	89.71	139
57	103.58	150.40	145
62	163.80	213.37	130

Comparisons of UK and US inception rates are necessary to assess the adjustments which might be appropriate if US inception rates are to be used as a basis for calculating UK tabulated rates. Moreover, if a combination of UK inception rates and US termination rates are to be employed, adjustments to the termination rates in view of the differences in inception rates may also be appropriate.

Termination Rates

The table below shows a comparison of the proportions of claimants disabled after specific durations according to 1985 CIDA and 1987 CGDT.

Deferred Period 3 months/90 days

	Age 27			Age 42			Age 57		
Duration	CIDA	CGDT	CGDT/ CIDA(%)	CIDA	CGDT	CGDT/ CIDA(%)	CIDA	CGDT	CGDT/ CIDA(%)
3 months	100.0	100.0	100	100.0	100.0	100	100.0	100.0	100
4 months	78.1	88.3	113	80.2	91.4	114	83.7	95.2	114
5 months	61.9	76.9	124	65.0	82.8	127	71.3	90.5	127
6 months	49.9	68.3	137	35.6	75.9	142	46.7	86.3	139
9 months	31.0	53.2	172	28.9	64.3	180	41.3	79.5	170
12 months	23.6	44.9	191	24.9	57.7	200	38.0	75.5	183
18 months	15.8	35.7	226	21.4	49.7	220	35.1	70.3	195
2 years	12.8	31.0	244	18.3	44.9	218	31.9	66.9	195
3 years	9.6	25.4	264	16.9	39.4	215	30.0	62.1	196
5 years	7.3	20.3	278	15.1	34.8	220	26.9	55.9	198
10 years	5.8	15.9	273	12.6	28.3	217	19.0	44.5	223

The above comparisons clearly indicate that lower claim termination rates, especially at the earlier durations, are experienced for US group business than individual and the CMI data given in Appendix 1 seems to indicate that this feature is also exhibited by UK experience.

Over the first two years 1987 CGDT suggests lower claim terminations are experienced in relation to deferred 6 months business compared to deferred 3 months business particularly at the younger ages.

8.3 Interest Rate

The interest rate chosen to discount expected claim payments should be the gross rate of return expected to be earned from investments over the course of each expected future claim duration. This should take account of a number of factors, including the generally short term nature of the liabilities but with the possibility of some very long term claims, the availability of assets to meet these liabilities, the rate guarantee period for which new investments will need to be made and the ability to meet short term claims during that period from future premiums.

In practice, having considered the implications of the above points, most insurers will tend to assume a flat rate which currently will be in the region of 7-10%.

8.4 Net Risk Rates

Sample net risk rates based on the data sources considered above and the published rates of three of the largest insurers are given in Appendix 2. When analysing these figures, insurers' expense loadings and scheme underwriting adjustments need to be borne in mind, but assuming these are proportionate to premiums, then the shape of the rates will be unchanged.

In addition, in order to give a greater feel for the sensitivity of the main assumptions, the percentage differences in the net risk rates produced from the 1987 CGDT table, by varying the termination rate and interest rate assumptions by a defined amount are also shown. Clearly any variation in the inception rate assumption is proportionately carried through to the calculated net risk rates.

8.5 Possible Adjustments To Expected Claims Costs Derived from Past Experience

It may be appropriate to adjust the expected claims costs derived from past experience to take into account a number of factors including what the competition is charging and the fact that future inception and/or termination rates may, amongst other things, change over time as a result of:

- improvements in medical science
- a general increase in claims awareness
- changing attitudes of employers to Group PHI business

- changes in the economic environment
- the advent of "new" conditions such as AIDS, ME, RSI and the possible eradication of others
- changes in the insurer's approach to this business, particularly in relation to policy conditions, underwriting and claims control.

8.6 Expenses

Expenses in relation to Group PHI business may be broken down into a number of areas such as acquisition costs, administration expenses and the cost of paying and controlling claims.

Perhaps particular attention should be given to acquisition expenses in view of the low success rates associated with new business quotations.

8.7 Profit and Contingencies

Although the Group PHI market is highly competitive in most areas, insurers should clearly ensure that adequate margins are incorporated in their premiums to cover the uncertainties involved and produce a reasonable margin of profit.

8.8 Female lives

Female rates are normally calculated as a multiple (often 150%) of the male rates. Consideration needs to be given as to how appropriate this is.

9. Scheme Underwriting

9.1 Objective

The morbidity experience, or more importantly, the claims experience of a scheme, can be expected to vary as a consequence of a whole host of factors.

The scheme underwriting process seeks to reflect these variations by considering the individual characteristics of each scheme which might have a notable influence on the ensuing claims experience and identifying appropriate adjustments to the basic tabulated rates.

9.2 Risk factors

Occupation, Economic Activity/Industry, Location and Benefit Levels are perhaps the most frequently assessed risk factors and these are individually considered in some detail below.

In addition, a number of other risk factors which may be considered are listed below, together with a brief explanation of their possible relevance.

9.2.1 Occupation

There are a number of reasons why occupation may have a significant influence on morbidity:

* Individuals in certain occupations are more prone to occupational accidents and disease.

* Different occupations demand varying levels of physical and mental fitness.

* Job motivation typically varies from occupation to occupation.

* Economic factors from time to time impinge differently on the various occupational classes.

The following data derived from 1985 CIDA demonstrates the effect occupation has on individual PHI accident and sickness inception rates.

Incidence of US Male Insured Disability

	Ratio to Occupational Class 1 Experience (%)								
	American Occupational Class 2			American Occupational Class 3			American Occupational Class 4		
Age	Accident	Sickness	Total	Accident	Sickness	Total	Accident	Sickness	Total
25	241	221	230	819	296	536	1015	301	629
35	410	227	284	1271	312	610	1602	318	717
45	329	230	249	918	290	412	1182	295	467
55	275	202	209	683	202	298	909	263	323

Elimination Period 90 days

1987 CGDT argues that termination rates may also vary by occupational class and for reserving purposes suggests that the tabulated valuation termination rates might be adjusted by the factors shown below for the first two or three years and thereafter grading linearly to 1.00 by the end of the fifth year of disablement.

	Occupational Class	Factor
1	(best white collar)	1.05
2	(other white collar)	1.02
3	(best of blue collar)	0.98
4	(2nd quartile blue collar)	0.93
5	(3rd quartile blue collar)	0.90
6	(worst blue collar)	0.85

1987 CGDT also suggests that the above factors might be varied by age and sex.

The above data sources indicate that claims experience is likely to become heavier with increasing occupational class. An exception to this, might be in relation to senior employees which despite their generally higher commitment to work, might exhibit a worse claims experience than more lowly clerical workers, owing to the heavier demands of their work.

9.2.2 Industry/Economic Activity

Group PHI claims experience may also be expected to vary by industry/economic activity.

There are a number of reasons for this including:

(i) The occupational class tends to be more closely defined in the context of the associated industry. For example, a white collar worker employed by a firm of solicitors may represent a different morbidity risk than a white collar worker employed by a construction company.

(ii) Individuals working for organisations such as a firm of solicitors, a medical practitioners or an insurance company may be more claims aware and be in a stronger position to argue the validity of claims.

(iii) There is normally some correlation between employment conditions and industry type.

(iv) The economic climate is generally speaking, likely to have a similar affect on the fortunes of companies in each industry sector.

Again 1987 CGDT suggests that the occupational adjustments referred to above to calculate disabled life annuities, should be multiplied by factors varying by industry as set out in Appendix 3.

9.2.3 Location

Claims experience also varies by geographical location within the UK, for a number of reasons, including:

climate and other environmental factors
local medical and health facilities.
diet
differing lifestyles
unemployment levels/job vacancies
differing work ethics, attitudes to insurance and cultures
other socio-economic differences.

The General Household Survey includes questions on long-standing illness. It is interesting to compare the number of persons interviewed reporting an illness, disability or infirmity which had troubled them over a period of time by region with the standardised mortality ratio (SMR). The rankings for lives aged 45-64 compared with the mortality ratios are very similar.

Region	Percentage of persons who reported a long-standing illness		SMR Males 1979-83
	Ages 16-44	Ages 45-64	Ages 15-64
North	23	52(9)	116(8=)
Yorkshire & Humberside	26	53(8)	107(7)
East Midlands	25	49(6)	97(4)
East Anglia	24	37(1)	81(1)
South East	24	38(2)	91(3)
South West	27	42(3)	89(2)
West Midlands	25	43(4)	103(5)
North West	25	47(5)	116(8=)
Wales	26	50(7)	106(6)

Source: Regional Trends 1990
Mortality & Geography - A review in the mid-1980s

9.2.4 **Benefit Levels**

Intuitively, it seems reasonable to suspect that claims experience will be lower if claimants are financially less well off disabled than working and therefore have a real incentive to return to work. If the converse is true and a disabled life is financially better off than working, the motivation to return to work is clearly likely to be diminished. Indeed this reasoning seems to be borne out by US experience.

Group US Long-Term Disability Insurance 1976-80

(Deferred Period 6 months, All Ages, Males and Females)

Ratio of Gross Benefit (Before Reduction of Integration) to salary	Ratio of Actual to Expected Claims (%)
<50%	68
50%	76
51-60%	91
61-70%	106
70%-	71*

* NB: There was only a small exposure in this category, and only 8 claims.

When considering disability benefit levels, insurers often refer to replacement ratios. These may be defined as:

$$\frac{\text{Net Post-Disability Income}}{\text{Net Pre-Disability Income}} \%$$

In the UK, pre-disability income will consist of earnings less income tax and National Insurance Contributions. Post-disability income will be made up of disability insurance income less income tax and National Insurance Contributions plus the State invalidity benefits payable.

A replacement ratio of 100% means that a life is equally well-off disabled as working whilst replacement ratios less than 100% imply at least some financial incentive to return to work.

In practice, replacement ratios are often higher than one might initially think and this is a consequence of:

* The magnitude of PHI benefits offered.

* The level of State invalidity benefits.

The tables below for example, illustrate the replacement ratios which may currently apply in the case of various benefit levels and personal circumstances:

Single Person with No Adult Dependants

	PHI Benefit Basis			
Gross Salary (£pa)	75% of Salary less SPSIB	66.7% of Salary	75% Fully Integrated	90% Net Pay
10,000	105	121	94	90
15,000	103	112	91	90
20,000	102	107	89	90
30,000	93	93	84	90
50,000	89	87	84	90

Married Person with One Adult and Two Child Dependants

	PHI Benefit Basis			
Gross Salary (£pa)	75% of Salary less SPSIB	66.7% of Salary	75% Fully Integrated	90% Net Pay
10,000	137	153	91	90
15,000	126	135	96	90
20,000	120	125	95	90
30,000	104	104	87	90
50,000	98	95	88	90

The above replacement ratios apply at the commencement of a claim. Of course, the rate at which benefits in payment are increased will affect the replacement ratio position throughout the period of claim.

9.2.5 **Past Changes In Membership Levels**

If the number of members in a scheme has recently increased as a consequence of a takeover or merger involving the sponsoring employer, it is possible that the newer employees may represent an inferior PHI risk as some may be unable to cope with the new working environment and the Group PHI coverage might be at risk of abuse during any period of rationalisation.

Alternatively, if the number of members has recently increased as a result of recruitment, then improved morbidity experience might be expected as a consequence of the health selection that generally takes place at the recruitment stage.

Similarly, if the number of members has recently fallen, the sponsoring employer may not be trading successfully which for a variety of reasons might result in an increased PHI risk and the usual unit-rating assumption of a stationary age profile might be less likely to apply over the forthcoming rate guarantee period.

9.2.6 Size of Scheme

Although in theory, the free cover levels and other underwriting criteria are defined in a manner which takes into account scheme size, they are also in part determined by marketing considerations and an insurer might take the view that the selection criteria are less or more favourable in relation to certain sizes of scheme.

In addition, larger schemes might be considered a less attractive risk owing to the higher claims awareness which might prevail amongst the scheme membership. A large scheme might also represent an undesirable concentration of risk within an insurer's portfolio of business.

9.2.7 The Intermediary Placing The Scheme

The analysis of an insurer's Group PHI claims might reveal some correlation between the level of claims experience and the intermediary placing each scheme.

For example, some intermediaries might be associated with higher than expected claims experience as a result of the way they present the scheme data at the quotation stage, their policy of transferring schemes and the assistance they give to sponsoring employers at the time of a claim.

9.2.8 Insured Status Of Scheme

Whether or not a scheme is currently insured may have an influence on expected morbidity experience. For example, a newly insured scheme may, depending on insurers' underwriting conditions, represent a greater risk of anti-selective claims. On the other hand, claims awareness in relation to such schemes may be reduced.

The timing and the reasons for the introduction of a scheme may be worthy of consideration in this context. For example, great care might well prove prudent if a mature company in a clearly declining and unprofitable industry suddenly shows an interest in introducing a Group PHI scheme.

The past claims experience of an existing scheme offers more information on a scheme than that available in the case of a newly insured scheme. The analysis of a scheme's past claims experience is considered in Section 10.

9.2.9 The Quality Of The Quotation Data

Although insurers should clearly be satisfied with the data they have available prior to providing a quotation, the standard of data in terms of occupational details, eligibility conditions and the like, can vary significantly in practice. An implicit or explicit allowance for this variability might on occasions be considered appropriate.

9.2.10 The Magnitude And Variability Of Benefits

The magnitude and variability of benefits associated with a scheme clearly has implications on the likely volatility of the expected claims experience.

9.2.11 Eligibility Conditions

A scheme's eligibility conditions may influence claims experience in at least two ways. Firstly, the eligibility conditions may imply a better class of risks, by imposing favourable limitations on lives eligible to join the scheme.

Secondly, any discretion the sponsoring employer or the employees themselves have in who joins a scheme is likely to lead to anti-selection at least to some degree. The underwriting requirements of an insurer should be considered in the context of the level of discretion that exists and the premiums charged should also be considered in the light of the eligibility conditions and underwriting requirements being imposed.

9.2.12 Overseas Risks

Section 2 indicated that coverage was often restricted for certain overseas risks. If an insurer is asked and agrees to remove these restrictions a suitable adjustment should clearly be made to the premium levels.

9.2.13 **Catastrophe Risk**

Some schemes are clearly associated with a higher catastrophe risk than others and allowance should be made for this.

9.2.14 **Specific Information Available On Individual Lives**

On occasions insurers will have specific information available on individual lives. This might be in relation to past PHI claimants (individuals who have previously claimed disability benefits are in general more likely to claim than those lives who have not previously suffered a period of disablement), individuals who are in the public domain and individuals who have previously been underwritten by the insurer.

Generally speaking, adjustments should be made in the premium calculations to allow for this information.

9.2.15 **High Average Scheme Age**

Although in theory, an insurer's tabulated rates are dependent on age, some insurers will impose an additional premium loading on schemes which have a high average age in view of the concentrated exposure to possible "early retirement" type claims.

9.3 **Employer's Attitude**

One of the more important influences on the claims experience of a scheme is the attitude of the employer. At one extreme, some employers are very strict with disabled employees to the extent that if they are not convinced that every effort is being made to return to work, the disabled employee's employment is terminated. Conversely, some employers may actively encourage employees to take disability benefits as part of a cost-cutting exercise.

Unfortunately in the absence of first hand knowledge of an employer, insurers have to consider surrogate risk factors and, in the case of large existing schemes, the past claims experience is perhaps the most revealing.

9.4 Selection of Risk Factors

Every insurer needs to determine which risk factors should be considered as part of the scheme underwriting process.

In this connection, the following issues are relevant:

(i) The insurer's view on the relative importance of each risk factor.

(ii) Competitors' views on each risk factor. For example, if an insurer believes the rest of the market is unduly cautious regarding a given risk factor, its aim should be to secure such risks by marginally undercutting the market.

(iii) The data available on which to determine the premium adjustments to be made in relation to each risk factor.

(iv) The degree of dependence between each risk factor. For example, it might be argued that morbidity differences by location can in part be explained by the geographical distribution of occupations and industries.

(v) The practical implications of considering each risk factor.

For example, each additional risk factor will lengthen the scheme underwriting process and will complicate the experience monitoring procedures. There may be an added constraint that the necessary information to assess the risk factor is not readily available.

9.5 Practical Considerations

9.5.1 Weightings Given To Premium Adjustments

Theoretically, each scheme member or risk category should be assessed individually and the final premium calculated as the sum of the individual parts.

In the case of scheme underwriting adjustments which can be defined as a function of the variables used in the premium costing calculations such as benefit level/ replacement ratios, computerised systems can be developed to achieve this.

The assessment of other risk factors such as occupational class requires subjective judgement and consequently, it is not normally a simple process to allow for these on an individual basis. The usual approach therefore taken in practice is to divide the scheme membership into a number of parts with similar risk profiles which are then attributed appropriate premium adjustments and a weighted average is then taken as the overall scheme adjustment.

In theory, the weights given to each part should equate to the tabulated premiums calculated for each part. If however, it is not practical to calculate tabulated premiums for each individual part, then approximate weightings need to be used. These are normally taken as the number of individuals or their benefits falling within each category and these approximations will usually result in the scheme premium derived erring on the side of caution. This is because the classes who attract the more favourable underwriting adjustments tend to be insured for higher than average benefits (particularly allowing for the usual State benefit offsets) and are above average age.

9.5.2 Interpretation of Quotation Data

The scheme underwriter has to ensure as far as possible that the quotation data provided is correctly interpreted.

For example, the term "staff" is often encountered and this may be intended to refer to all of the sponsoring employer's employees or only white-collar, clerical workers.

9.5.3 Accuracy of Quotation data

The accuracy of the data should also be considered. Firstly, the scheme underwriter can, for example, assess whether the occupational breakdown available is consistent with the scheme's eligibility conditions and the employers nature of business. Secondly, the scheme underwriter might consider the confidence he or she has in any classifications made by the intermediary.

9.5.4 Confirmation

When a scheme is secured it is advisable for the insurer to confirm all of the facts with the sponsoring employer.

9.5.5 Other Information Available

In addition to the written information provided by the intermediary, the scheme underwriter has a number of other sources of information which can if appropriate be investigated including:

The insurance industry's knowledge of notoriously bad schemes, although examples cannot be given for legal reasons.

Discussions with the intermediary and possible insurance company personnel who may have local knowledge of the employer.

Publications by organisations such as credit rating agencies and investment analysts.

Visits to large employers (this will facilitate a more accurate assessment of the risks involved).

Textline extracts from newspapers and publications.

Companys' Report and Accounts.

9.6 Tailoring The Terms

On occasions merely adjusting the tabulated premium rates may not be appropriate. This may, for example be because:

(i) The resulting premiums are unaffordable,
(ii) The uncertainty in pricing the risk is considered untenable by the insurer,
(iii) The level of coverage requested may be inappropriate.

In these situations it may be possible to modify the scope of coverage offered so that it still remains attractive from a marketing viewpoint and the risks are acceptable to the insurer.

Two examples may help to illustrate this:

(i) Moneybrokers

Moneybrokers work under a high level of stress and need a high mental ability.

To avoid minor disabilities leading to claims it would seem prudent to impose a tighter definition than the own occupation definition. Moreover, the expected career length is relatively short and generally the lives will be young with limited financial responsibilities. It may be appropriate to reduce the terminal age and restrict the maximum monetary benefit available.

(ii) HGV drivers

HGV drivers must undergo regular medicals and a relatively minor disability may result in them losing their licence and so preventing them from performing their normal occupation. Similar concerns may apply to other occupations where a licence is required such as pilots and public service vehicle drivers.

Consideration should be given to imposing a tighter definition of disability. Indeed, some insurers have in their standard contract a revised definition which would automatically apply in these cases.

10. Analysis of a Scheme's Past Claims Experience

10.1 The past claims experience of a scheme will inevitably deviate from that expected according to an insurer's pricing basis.

Part of this variation will be due to random fluctuations and part will be due to systematic factors affecting the risk which were not foreseen or could not have been quantified.

Analysing the claims experience of a scheme may enable the insurer to refine the premium charged by taking some account of the systematic factors.

10.2 Information Required

The past claims information required very much depends upon the analyses to be carried out. The following information is normally of interest.

(1) Total numbers of lives and the total benefits at risk each year for the past 5 years or, if shorter, the period the scheme has been in force.

(2) Details of any change in benefit structure, eligibility criteria or policy conditions over the relevant period.

3) Individual details of all claimants:

- (i) Age
- (ii) Sex
- (iii) Occupation
- (iv) Amount of Claim
- (v) Commencement Date of Claim
- (vi) Date Claim Terminated and Reason For Termination (if applicable)
- (vii) Reason for Claim.

10.3 Preliminary Analysis

The very process of collating the claim details can be rewarding even without detailed quantitative analysis. Of course care should be taken to avoid drawing conclusions from the data which are not fully justified, but the following issues, amongst others, might be considered:

(i) The ages of the claimants may be examined in order to see whether there is any evidence of the scheme being used as an early retirement vehicle.

(ii) Are the claim amounts significantly higher or lower than the average benefits at risk?

(iii) The trend of numbers of claims each year may indicate that "claims awareness" is increasing.

(iv) Is there any correlation between claims and reduction in membership levels, which possibly indicates that the scheme has been abused in the past?

(v) Are the occupations of claimants consistent with the occupational details received in relation to the entire scheme membership?

(vi) Do the cause of claims appear genuine? Alarm bells might start ringing if a number of claims result from conditions such as back injuries or mental illness.

(vii) Do claims terminate in line with pricing expectations and the causes of disability?

(viii) What are the chances of claimants returning or having returned to work, subsequently re-claiming as a result of the same condition?

10.4 Experience Rating

The usual calculation method used to consider a scheme's past experience and refine an insurer's premiums can be illustrated by the formula:

Final Premium Rate = Z * C + (1-Z) * P

where: Z = the credibility to be given to the past claims experience
P = the premium rate derived from the tabulated premium rate and the insurer's scheme underwriting adjustments
C = the past claims rate suitably adjusted for expenses and interest so that it is consistent with P.

Credibility and the past claims rate are considered in the remainder of this section.

10.5 Credibility

Determining the degree of credibility that can be given to a scheme's past claims experience is far from straightforward. Indeed it necessitates extensive statistical assumptions which are outside the scope of this paper.

The degree of credibility often given in practice however, is often significantly higher than that which is theoretically justified. This is clearly less of a problem if the past experience is inferior to that expected, but can result in unjustifiably low office premiums being quoted if this is not the case. This is particularly so, when it is considered for example, that the past insurer's claims control was possibly overly stringent or the employer's attitude to insurance may have changed significantly, perhaps as a consequence of completely different economic conditions.

10.6 The Past Claims Rate

The past claims rate may be simply defined as claims divided by the exposed to risk. The calculation of the exposed to risk is normally straightforward, although allowance for the reduced exposure resulting from the deferred period clearly needs to be made.

Unfortunately, however, determining an appropriate value for claims is complicated by the fact that the full cost of claims only emerge over a number of years.

So whilst it should be possible to calculate the total claims paid to date, one or a combination of the approximate methods outlined below have to be adopted in practice to calculate the outstanding claims reserve.

(i) Case Estimates

An estimated value for the outstanding claims reserve may be determined by considering the individual characteristics of each claim such as age, sex, occupation and cause of disability.

(ii) Statistical Estimates

Statistical methods can be employed to calculate an estimate of the outstanding claims in payment by reference to a standard table.

As there is clearly some uncertainty in calculating the outstanding claims reserve and the credibility of the termination rates already experienced is often marginal, some insurers now only analyse the claim inception rates of a scheme. By doing this, insurers are assuming that the past claims experience of a scheme provides no useful information on termination rates to adjust their standard pricing basis an this assumption should clearly be considered to check its reasonableness.

11. Net Pay Benefit Bases

11.1 Introduction

Net pay benefit bases began to be marketed actively in the UK in the late 1980's, although the odd arrangement, had been set up on this basis some time before.

The main reason for offering benefits on a net pay basis is to attempt to ensure that disabled employees retain a financial incentive to return to work. As was demonstrated in section 9.2.4, this is not always the case with the more established benefit bases, most notably the 75% of Salary less the single persons State invalidity benefit formula.

11.2 Basic Concept

The thinking behind net pay benefit bases is to start with a target replacement ratio, which then defines the PHI benefit level.

That is, a net pay PHI benefit at the commencement of disability after deduction of income tax, National Insurance Contributions and possibly pension fund contributions and added to the State invalidity benefits actually receivable, equates to a defined percentage (most commonly, 85% or 90%) of the employee's pre-disability net earnings.

As far as the practical calculation of net pay PHI benefits is concerned, employees pay, income tax and National Insurance Contributions are generally taken at the rates prevailing at the commencement of disability and the State invalidity benefits are those actually being paid.

The determination of the net pay PHI benefit is a "one-off" calculation and consequently, the 90% relationship can only be expected to hold at the date disability benefits begin to be paid. Thereafter, benefits remain constant or annually increase at a fixed rate.

11.3 Calculation of the Benefits at Risk

11.3.1 Costing Data Available

In order to calculate the benefits at risk accurately, a significant amount of information is required about each individual to be covered, including:

age
sex
gross scheme salary and tax code (or possibly net scheme salary)
details of dependants (as defined for State invalidity benefits)
history of relevant earnings (for calculating the State invalidity earnings related benefit)
pension fund contributions payable.

With the possible exception of very small schemes, the data made available to insurers for costing net pay PHI benefits falls far short of the ideal. The majority of net pay quotations are largely provided on the basis of the information commonly available to calculate the benefits at risk for any Group PHI quotation. That is, each individual's age, sex, scheme salary, and if to be insured, the pension fund contributions payable. The only additional information usually obtained is notification of whether or not employees are contracted-in or contracted-out. For larger schemes, the quotation data is often supplied in a five year age-banded format.

Whether insurers should accept such limited data is open to debate, but the relative significance of some of the variables may be seen in the example calculations below.

11.3.2 **Methodology**

One approach which can be used to calculate net pay benefits at risk, is to define a number of states which most importantly define the State invalidity benefits receivable and the tax allowances applying and then by making assumptions concerning the probability of an individual falling into each state, calculate the benefits at risk from the formula:

$$BAR(x,y,s) = \sum_{i=1} pi(x,y,s).\ Bi(s)$$

where: BAR(x,y,s) = Benefits at risk for an individual aged x, sex y and salary s.

pi(x,y,s) = Probability of an individual age x, sex y and salary s, falling in state i.

Bi(s) = Benefits at risk for an individual with a salary of s and falling in state i.

n = Number of states considered.

11.3.4 **Example**

A simplistic numerical example might help to illustrate this method:

Suppose five states are selected:

State	Income Tax Allowance	Number of Adult Dependants	Number of Child Dependants
1	3,295	0	0
2	5,015	0	0
3	5,015	1	0
4	5,015	1	1
5	5,015	1	2

Then if we are considering a male life aged 45 earning £17,500 p.a. who is contracted out and is in a non-contributing pension scheme, then the State invalidity benefits and net salary can be easily calculated. Moreover the net pay PHI benefits can be calculated by an iterative process.

The figures shown below are based on the income tax, National Insurance Contributions (contracted-out) and State invalidity benefit rates applying at 1st January 1992. The State invalidity earnings-related component has been approximated to 13/80ths of (17,500 - Lower Earnings Level) = £2,403 p.a.

State	Net Salary	Total State Invalidity Benefits	85% Net Pay PHI Benefit	90% Net Pay PHI Benefit
1	12,859	5,116	7,140	8,086
2	13,289	5,116	7,045	8,022
3	13,289	6,747	4,746	5,624
4	13,289	7,253	4,202	4,916
5	13,289	7,811	3,602	4,316

If the probability of a male aged 45 falling in each state is considered to be as follows:

State	Probability
1	0.10
2	0.25
3	0.20
4	0.10
5	0.35

Then the benefits at risk on a 85% Net Pay Benefit Basis may be estimated as:

$= 0.1 * 7140 + 0.25 * 7045 + 0.2 * 4746 + 0.1 * 4202 + 0.35 * 3602$

= £5,105

and similarly on a 90% Net Pay Benefit Basis = £5,941

11.3.5 The Assumptions Required

The above method requires the following assumptions:

(i) The tax allowance applying to each individual claim,
(ii) Tax rates, National Insurance Contributions and State invalidity benefits at date of claim,
(iii) The number of states to consider and the probabilities of individuals falling into each state.

11.3.6 Sensitivity of Net Pay Benefits Calculations

The sensitivity of the results to the various assumptions employed in calculating net pay benefits are demonstrated in the table below.

The results shown are the annual benefits at risk on a 90% Net Pay Benefit Basis.

	State					Estimated average benefit at risk
	1	2	3	4	5	
Base (See Section 1.2.3.4.)	8,086	8,022	5,624	4,916	4,316	5,941
Sensitivity tests						
(i) Salary						
- £10,000	3,173	3,589	1,881	1,364	794	2,005
- £25,000	14,585	14,522	12,124	11,380	10,559	12,347
- +10%	9,242	9,179	6,781	6,037	5,216	7,004 (+18%)
(ii) Tax allowances						
- -£1,000	8,122	8,059	5,661	4,917	4,096	5,884 (-1%)
- +£1,000	8,049	7,986	5,703	5,158	4,558	6,053 (+2%)
(iii) State Invalidity Benefits No Earnings Related Benefit But Maximum Age-Related Allowance (£577)	10,770	10,707	8,309	7,565	6,744	8,532 (+44%)
(iv) Distribution between states						
- (0.15, 0.35, 0.25, 0.1, 0.15)						6,566 (+11%)
- (0.05, 0.15, 0.2, 0.2, 0.4)						5,442 (-8%)

Clearly, one of the most sensitive assumptions is the state of each individual to be covered. This may well vary by scheme type as well as by the age profile.

All the assumptions are likely to be less accurate for the smaller schemes and consequently some form of additional contingency margin may be appropriate for these. Alternatively, it may be preferable to decline to quote for such schemes unless more detailed information concerning each individual's personal circumstances is made available. In practice, however, most insurers offering net pay schemes are prepared to do so for as few as 20 or 30 lives.

Additionally, offices should perhaps take care when offering net pay benefits because the employer and his actuarial advisers may well be in a position to assess the assumptions being made in the net pay costings and to determine whether this approach or a more conventional benefit basis is more beneficial in their particular case.

The timing of the scheme commencement date in comparison with tax year and likely review of State benefits as well as scheme salary should also be considered.

11.3.7 Adjustment to Basic Tabulated Rates

As explained in section 9.2.4, a number of offices apply more favourable adjustments to their basic tabulated rates for benefit bases which are likely to result in lower replacement ratios and net pay schemes would generally fall within this category.

11.3.8 Age-Banded Data

It is not unusual for Group PHI quotation data to be available in age-banded format only. For simple benefit bases this is not a problem, and simplifies the costing calculations. In the case of net pay, however, difficulties arise. Banded data allows the calculation of the average salary within a band, but no information is available in relation to the distribution of salaries. In general, the ratio of net pay benefits to gross salary, increases with salary due to the structure of State benefits and taxes. Thus for a given average salary, the benefit that should be costed increases as the variance of the salaries within the band increases.

To illustrate this, consider two examples, based on the figures given in section 11.3.6:

(i) 2 lives, both with a salary of £17,500 p.a.

Total 90% net pay benefits at risk

= £5,941 p.a. + £5,941 p.a.

= £11,882 p.a.

(ii) 2 lives, one with a salary of £10,000 p.a. and one with a salary of £25,000 p.a. (average = £17,500 p.a.)

Total 90% net pay benefits at risk

= £2,005 p.a. + £12,347 p.a.

= £14,352 p.a.

(i.e. 21% higher than the benefits calculated in (i)).

11.4 Advantages and Disadvantages of Net Pay Schemes

Under net pay arrangements, the level of benefits covered ensure that claimants have a greater financial incentive to return to work. Offices can demonstrate that they are attempting to fulfil the needs of the employer and the employer is charged lower premiums as a result of reduced benefits being covered and more favourable scheme underwriting adjustments being applied.

Net pay arrangements do however, have a number of disadvantages:

(i) It is more expensive to administer claims and initial development costs are incurred.

(ii) There are uncertainties in calculating the benefits at risk.

(iii) Employers who already sponsor a Group PHI scheme with a higher benefit basis may have difficulties in switching to a net pay basis if this leads to lower benefits. There is however, evidence that some employers have been prepared to make this switch.

(iv) Intermediaries' and employers' lack of awareness of the net pay concept may have delayed the development of the net pay PHI market.

(v) The net pay ratio only applies when benefits become payable and the subsequent relationship depends upon the expected future progression of the claimant's salary, the PHI escalation rate and changes in the taxation and social security systems.

(vi) It is arguable whether a net pay ratio of 85% or 90% provides a sufficient incentive to return to work.

(vii) Owing to the restrictions applied in practice by offices, the higher earners and females who have opted out of paying National Insurance contributions, may not receive a benefit which equates to the intended percentage of net pay.

12. Claims Control

12.1 Ideally claims control should be firm but fair. Unfortunately achieving such an apparently simple objective is far from straightforward in practice as a result of the high degree of subjectivity which is required in assessing the validity of a claim in relation to the definitions of disability in common use.

Striking a balance between being too generous or too harsh is extremely difficult and success in this respect will only be achieved with experience. It is the writers' belief however, that this subject needs much more attention from a theoretical as well as a practical viewpoint and warrants a paper in itself.

This paper simply attempts to highlight the main procedures, the claims information which may be sought and to outline briefly the main areas where Group PHI claims control differs from Individual PHI.

12.2 Claims Procedures

An office's claims procedures can basically be divided into admittance procedures, payment procedures and reviews of claims in payment.

12.2.1 Admittance procedures

This is where an office collects all the information on a new claim it considers appropriate and then decides whether the claim satisfies the policy conditions.

12.2.2 Payment Procedures

Once a claim has been admitted, any late claim instalments should be paid as soon as possible and all future claim payments should be paid when due.

12.2.3 Review of Claims

Each claim should be reviewed on a regular basis in order to simply obtain confirmation that the claimant has not recovered or died. In addition, more extensive reviews should be conducted at regular intervals. The interval depends upon the characteristics of each claim, so for example a claim which is expected to cease in the near future should be reviewed at shorter time intervals than a claim which is likely to last for a number of years.

12.3 Claims Information Available

The information which can be obtained in relation to a claim includes:

Insurer's standard claim form.
Insurer's specific claim form for the claimant's disability.
GP's reports.
Claimant's own specialists' reports.
Independent specialists' reports.
Disability Counsellors' reports.
Private Investigators' reports.
Specific Test reports (for example, from the Isostation B-200).

12.4 Main Differences Between Group and Individual PHI Claims

Differences between Group and Individual PHI claims arise as a consequence of the differing policy conditions and underwriting procedures, such as the implementation of a free cover level and actively at work conditions.

In addition, differences arise because an extra party, namely the sponsoring employer, is involved. This necessitates slightly different administrative procedures but the more notable differences stem from the differing views of employers.

The importance of the views of the employer has already been mentioned in previous sections and this is equally the case in relation to claims control. For example, some employers have very firm views on the validity of claims whereas others rely very heavily on the insurer. Indeed, the insurer's expertise may be seen by some of the larger employers as the most important benefit arising from insuring disability income benefits. Even amongst employers who take an active interest in the claims process, views can vary significantly. Some will consider that the insurer is not sufficiently strict; others will be keen for claims in relation to employees with even the slightest disability to be paid.

In dealing with group claims it is often helpful to educate the employer so that it is fully understood that only genuine claims will be paid and, the financial consequences claims have on future premium levels.

13. Experience Monitoring and Reserving

13.1 As the profitability of Group PHI business has been relatively volatile and expected long term profit margins are relatively small, the monitoring of experience is particularly important. If experience is to be monitored it is important that the relevant data is recorded to enable an analysis to be performed. If the insurer wishes to participate in the CMI studies consideration must be given to recording the required data in a suitable format.

If actual experience is significantly different from that expected consideration must be given to revising the pricing basis.

Expenses

As with any class of business a full expense analysis should be regularly carried out. For Group PHI, quotation costs will be a significant expense. Many of the major insurers expect to be successful in less than 5% of the quotes they make for new business although they would look to retain in excess of 80% of existing business at each review date. Business won will need to contribute to the quotation costs of business lost. If this is to be achieved fairly it is necessary to compare the profile of business won with that lost. Simple measures such as schemes won compared with quotes made or lives won against lives quoted for may indicate whether there are any changes in the quotation success rates.

Business profile

In addition to providing information which is useful for expense analysis a comparison of the profile of business won with that lost will indicate whether an insurer is winning a reasonable spread of business and, if it is targeting particular types of schemes, how successful it has been. In particular are the scheme underwriting adjustments achieving the desired aim or is the insurer winning schemes it would not have expected to win?

Morbidity

The monitoring of Group PHI experience is somewhat harder than for individual business as information as to the exposed to risk is more difficult to obtain.

Typically an insurer will be provided with an age, sex and benefit breakdown at the commencement of the contract and full details will then only be provided at the expiry of the premium rate guarantee period. At intermediate points the insurer may only have an indication of the total sum at risk and the number of lives covered. As the guarantee period may only be 2 or 3 years this may not be regarded as important.

A range of factors affect both the incidence of claims and the duration of disability. Historically something over 80% of the cyclical variation in disability experience appears to be attributable to the claim incidence rate compared with which the average claim duration is relatively stable (Miller & Courant). A first indication of experience is to analyse claim incidence rates.

If age, sex and benefit breakdown are available the expected number of claims can be calculated using the pricing basis. It is necessary to consider what proportion of the scheme underwriting adjustments in the pricing are expected to alter the claim incidence rate and what proportion may alter other factors such as the termination rates.

On occasions the information necessary to carry out a full analysis of experience is not readily available. In this situation an approximate analysis may be made using only the claims data using the method suggested by W.M. Anderson (Miller & Courant). Using this approach each claim or claim amount is divided by the expected claim rate for that claim to produce the expected exposure to generate that claim. The total expected exposure can then be compared with the actual exposure. Care must clearly be taken in interpreting any results using this basis.

Cause of claim should be examined and compared with both past experience and industry experience as published by the CMI Bureau.

14. Legislation, Reserving and Taxation

14.1 Legislation

14.1.1 Insurance Companies Act 1982

Permanent Health Insurance is defined as Long Term Business in Schedule 1 of the 1982 Insurance Companies Act in the following way:

"Effecting and carrying out contracts of insurance providing specified benefits against risks of persons becoming incapacitated in consequence of sustaining injury as a result of an accident or of an accident of a specified class or of sickness or infirmity, being contracts that -

(i) are expressed to be in effect for a period of not less than five years, or until the normal retirement age for the persons concerned, or without limit of time, and

(ii) either are not expressed to be terminable by the insurer, or are expressed to be so terminable only in special circumstances mentioned in the contract."

The major differences between PHI and the contracts written as General Business are that the contracts provide for benefits which are always "specified" in advance and that they are of longer term and cannot under normal circumstances be cancelled by the insurer. It is the longer term of the benefit, which gives the contract its "permanent" label.

Although cover on Group PHI is usually cancellable after a short period the product does provide for benefits which could be of long duration and has traditionally been written as Long Term Business. It can, however, be argued that Group PHI is in fact general business and a number of insurers do actually write this business under a short term licence.

14.2 Reserves

14.2.1 As there are no guidelines on how Group PHI reserves should be set other than the solvency margin requirement there is considerable variation in the approaches taken. Reserves may however, be set up in relation to the following:

(i) unearned premium
(ii) pipeline claims (either those which are known to be within the deferred period or those which have been notified but have not yet been admitted).
(iii) claims in payment
(iv) incurred but not reported claims
(v) any known deficiencies in the premium basis.

In addition reserves may be set up for continuation options and profit sharing if appropriate.

There are a number of approaches used for calculating the reserve for claims in payment:

(i) fixed multiple of claims amount
(ii) value claim as a life annuity with no allowance for recovery
(iii) applying a disability annuity value calculated by reference to a standard morbidity table.
(iv) making an individual assessment of each claim.

In all cases the Appointed Actuary must be satisfied that the liability set up is sufficient to meet claims on a prudent assumption for published purposes.

The subject of reserving is covered in greater detail in Mark Turner's Staple Inn Paper.

14.2.2 Solvency Margin

If the business is written as Long Term Class IV the required solvency margin is 4% of the mathematical reserves adjusted for reassurance. There is no associated calculation on the sum at risk and so the capital required for the solvency margin is generally limited.

If the contract is written as General Business the solvency margin will be at least 16-18% of premium income.

14.3 Taxation

14.3.1 Employer

The premiums paid are normally treated as a business expense and may therefore be used to offset any Corporation Tax liability.

The payment of benefits from the insurer to the employer are treated as a trading receipt, however payments made to provide an income to the disabled employee or to the pension fund are treated as a business expense.

14.3.2 Employees

The provision of Group PHI coverage is not treated as a benefit in kind and consequently is not taxable. However, any benefits paid to employees are treated as earned income and are taxable under PAYE arrangements. There is no tax holiday similar to that applying in relation to individual PHI business.

15. Future Developments

15.1 The existing Group PHI product is well established and largely fulfils the needs for which it was designed, but there still remains scope for future developments, which may be loosely classified as those which set out to:

(i) Improve or clarify the scope of coverage, or

(ii) Reduce the cost of coverage or in the case of particularly high risk groups, at least enable some form of coverage to be offered.

This section outlines a number of these possible developments, some of which are coming, or have recently come, to fruition, whilst others are perhaps more speculative.

15.2 Developments which broadly improve or clarify the scope of coverage

15.2.1 AIDS

The majority of new schemes written in the UK in recent years, have been subject to some form of HIV/AIDS exclusion.

A number of insurers have however, been prepared or have had to waive this exclusion fully or in part, in certain circumstances, such as:

(i) The scheme was already insured and the policy conditions did not allow a reduction in the scope of coverage offered or it was considered unreasonable to impose an HIV/AIDS exclusion.

(ii) The request for AIDS coverage seems reasonable. For example, in the case of the subsidiary of a U.S. multi-national, where the parent company insists on having the coverage.

More recently, one of the leading insurers has been reported as being prepared to offer PHI coverage without the imposition of an HIV/AIDS exclusion to all schemes. Will other insurers follow this lead, particularly as the number of AIDS cases in the UK have been lower than was predicted at the time HIV/AIDS exclusions were introduced? The writers' believe some form of AIDS coverage can be offered, provided that high risk groups are denied coverage and positive anti-selection, particularly at the stage when the cover is introduced can be prevented. Care is also required to ensure that claims are not simply paid in the event of HIV infection and margins are required to allow for the possible increasing longevity of AIDS sufferers as a result of medical advances.

15.2.2 Increased Maximum Monetary Benefit Levels

For a number of years, the maximum monetary income benefit levels permitted by insurers has remained reasonably constant. Over the past 12 months or so, a number of insurers have in certain situations been prepared to offer a much increased maximum benefit of up to £250,000 p.a. albeit on more stringent terms.

There are clearly arguments for and against offering such high levels of coverage. It will however, be interesting to see whether other insurers will offer similarly increased levels of coverage, whether it proves popular with employers and whether the increased business levels which may result, proves profitable.

15.2.3 Independent Claims Arbitrators

Over the last five or so years, a number of insurers have modified their claims handling procedures. More importantly, some insurers nowadays seem to insist on higher levels of disablement before a claim is admitted and there has possibly lead to an increased level of disputed claims.

At the present time, the sponsoring employer has to take legal action to resolve any disputes it has with the insurer. Would an independent claims arbitrator, similar to the role played by the Insurance Ombudsman in relation to individual disability claims, be a more favourable way of resolving disputed claims?

15.2.4 A number of other possible developments fall within the category of improving or clarifying the scope of coverage. For example:

(i) Will there continue to be a reduction in the real value of maximum free cover levels offered?

(ii) Will pre-existing conditions exclusions or other modified forms of simplified underwriting systems become more prevalent?

(iii) How significant and what implications will flexible benefit systems have on Group PHI business?

(iv) Will sponsoring employers increasingly demand benefits which escalate whilst in payment?

15.3 Developments which may reduce the cost of coverage or at least, enable some form of coverage to be offered to high risk groups

15.3.1 Mental and Nervous Disorders

For many insurers in the United States claims arising from a mental, emotional or behavioural disorder are the leading cause of disability.

As a result a number of insurers have included a limitation on benefits for mental and nervous claims, such that benefits are only payable for a maximum of 24 months, unless the claimant is a resident patient in a Hospital. In this situation, benefits would be paid while the individual remains continuously confined. The inclusion of such a limitation can result in a premium discount of up to 20% in the United States.

Will UK Group PHI insurers adopt a similar approach in relation to mental and nervous disorders?

15.3.2 Reduced benefit term

A number of Group PHI insurers now offer coverage where benefits are payable for a maximum period of time, such as 3 or 5 years.

This clearly reduces claim costs and may reduce the uncertainties in the insurer's pricing assumptions to an extent which will enable higher risk groups to be offered some form of coverage.

15.3.3 **Definitions of Disability**

Section 2 remarked on the subjective nature of the definitions of disability in common use, particularly in the case of the more stringent definitions which are often applied to the higher and more specialised risks.

Will Group PHI insurers develop more concise disability definitions, perhaps which are phrased in terms of actual functions or are made more dependent on physical conditions, similar to the approach taken by critical illness coverages?

15.3.4 Other developments might include a greater use of modified with-profit style contracts for the poorer quality risks and the wider provision of non-proportional and disability claims services to self-insured schemes.

Appendix 1 : Group and Unit-Cost Standard Experiences for 1975-78 and 1979-82

Males

		Total	Actual/Expected (%)				
		Numbers	D1	D4	D13	D26	D-all
1975-78	Recoveries	421	59	102	111	59	74
	Deaths	223	..	..	203	204	199
	Inceptions	550	46	112	109	122	108
1979-82	Recoveries	682	74	83	77	40	52
	Deaths	313	..	..	93	96	94
	Inceptions	1,146	41	62	97	125	105

Females

		Total	Actual/Expected (%)				
		Numbers	D1	D4	D13	D26	D-all
1975-78	Recoveries	92	..	54	112	66	72
	Deaths	14	..	..	..	120	92
	Inceptions	88	..	333	167	145	167
1979-82	Recoveries	152	..	78	75	35	46
	Deaths	48	..	..	..	91	91
	Inceptions	198	..	107	129	141	128

NB: Expected Recoveries and Deaths calculated from Individual Standard (Males) 1975-78 graduated intensities from part B : CMIR12.
Expected Inceptions calculated from CMIR7 graduated rates.

Appendix 2

Annual Single Premium Rates per £1,000 p.a.

Deferred 13 weeks, Non-Escalating to 65	Age							
	27	32	37	42	47	52	57	62
Risk Rates:								
CGDT, 8½% interest	3.80	4.99	7.35	11.68	20.45	34.54	52.81	42.50
CIDA, 8½% interest	1.80	1.93	2.70	4.46	7.79	13.24	19.68	18.48
CMIR12, 8½% interest	1.14	1.94	3.21	5.29	8.78	14.66	23.21	25.52
Published Premium Rates:								
Insurer 1	5.00	7.00	10.00	16.00	30.50	48.00	91.50	89.50
Insurer 2	2.80	2.90	3.90	6.70	15.10	37.30	51.40	62.60
Insurer 3	4.00	5.00	7.00	11.00	19.00	33.00	45.00	47.50
Deferred 26 weeks, Non-Escalating to 65								
Risk Rates:								
CGDT, 8½% interest	3.33	4.39	6.25	9.76	17.53	31.24	46.26	32.31
CMIR12, 8½% interest	0.57	0.99	1.76	3.23	6.02	11.00	17.96	17.76
Published Premium Rates:								
Insurer 1	3.00	5.00	7.50	12.00	24.00	39.00	76.00	68.00
Insurer 2	2.60	2.70	3.70	6.40	14.20	35.10	47.80	54.70
Insurer 3	3.00	3.50	5.00	8.50	15.00	27.00	38.00	40.00

Sensitivity of Assumptions

Deferred 26 weeks, Non-Escalating to 65

	Age							
Assumption	27	32	37	42	47	52	57	62
Base: CGDT, 8½% interest	100	100	100	100	100	100	100	100
Adjustment to Base:								
Termination Rates +10%	90	91	92	93	94	96	97	99
Termination Rates -10%	111	110	108	107	106	105	103	101
Interest Rate of 9½%	93	93	94	94	95	96	97	98
Interest Rate of 7½%	108	107	107	107	106	105	103	102

Appendix 3 : Industry adjustments to claim termination rates suggested by 1987 CGDT

Industries	Factor
Agriculture, Forestry, Fishing, Mining, Construction	0.85
Manufacturing	0.70
Transportation, Communications, Public Utilities	0.95
Wholesale and Retail Trade	1.00
Finance, Insurance, Real Estate	1.05
Services	
Hotels/Rooming	0.85
Personal and Business	1.02
Auto/Miscellaneous	1.00
Motion Pictures/Amusement	0.98
Doctors' Offices	1.05
Hospital and Other Health	0.90
Legal	1.02
Colleges/Universities	1.02
Other Education	0.95
Social	0.98
Museums, Galleries, etc.	1.00
Membership Organizations	0.98
Private Households	0.85
Architects, Engineers, Accountants	1.05
Other Miscellaneous	1.00
Government/Public Administration	0.90

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