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Newsletter

Multiple Critical Illness Benefits from market needs to product solutions

Asia-Pacific experience

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Introduction

The classical Critical Illness (CI) product has become a standard and mature product offered in many markets around the world.

The recent decade has seen a search towards the next generation of product design. After the first waves of product enhancements introduced by insurance companies which mainly consisted of changes within the core product design, like the increase of covered conditions, or focused on specific subgroups, like children, the interest was high for developing a substantial improvement in product coverage.

Product extensions mainly went along two dimensions, providing coverage earlier for less critical conditions and providing coverage for longer, even after a first CI event.

CI insurance was always meant to be a living benefit and while the classical CI product terminates after the first claim, the need for protection against serious illnesses usually maintains.

The idea of covering multiple conditions has therefore been adopted in many markets.

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Need for Multiple CI benefits

The type of product design and the success of its introduction varies across the regions and it is important to understand the reasons for buying CI cover.

As history has shown, the introduction of the classical CI product has been most successful in markets where it addresses a need for protection not covered by existing national and private health and disability insurance.

With a general high awareness for the risk of substantial medical expenses in case of a severe illness it is no surprise that CI insurance has been particularly popular in markets with limited medical insurance, like in South East Asia and China.

While the flexibility to afford better treatments outside of the National Health Insurance coverage is also a motivation in more developed countries, the main reason for buying CI products in these markets usually relates to covering the loss of income or repaying a mortgage or other debts.

The reasons for buying CI insurance have a direct impact on the demand for a multiple event cover. If a CI policy is bought for repaying a debt then there is little need for a new cover of subsequent CI events. In the UK, where many CI products are

sold to cover a mortgage, Multiple CI is therefore not a target product.

If on the other hand a CI policy is bought to cover medical expenses then the need remains unchanged after a first benefit. This explains the fast adoption of multiple covers in China and South East Asia, which are developed as specific Multiple CI products offered in addition to single event covers.

While a needs analysis is an essential step for a product's development, one has always to look at this in the context of the maturity of the local market and its distribution channels.

Even though Chinese clients theoretically have a strong need for a multiple CI cover, the success of the product is also driven by the strong competition and desire by agents to offer a CI product with a wider (better) coverage than its peers.

With the medical advances in recent decades, the long-term survival rates after the main critical events like cancer, heart attack and stroke have increased substantially and at the same time the chances of recovery have improved.

The resulting growing population who have pre-existing conditions accents the growing need for continuous CI protection.

Product solutions – an international view

How a particular market sells and distributes their products is a key driver behind the development of a multiple event CI cover.

In Australia and New Zealand where the focus on protecting a mortgage or the loss of income might not create a sufficient unique selling point for multiple covers, they were introduced as optional "buyback" riders to classical CI products, giving the right to reinstate one's CI cover and for an accelerated CI product one's Life cover as well. This ties in with the general market approach of offering one type of base product with options allowing the individual to customize the product to their preferences.

The option has to be chosen at the onset of the policy and gives the right to repurchase CI cover at the same premium schedule

without health assessment after a waiting period of usually one year after the first CI claim was paid. The same condition and related events are excluded from the subsequent coverage. Related events are either explicitly defined via a full matrix of all combinations of first and second condition or more recently by a general statement only, excluding any condition resulting directly or indirectly from the first condition.

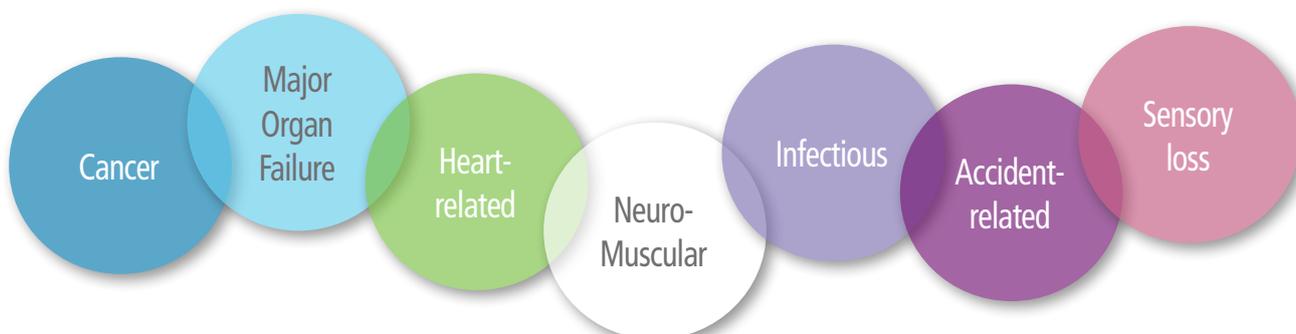
The latter approach might require additional specific exclusions. For example, for patients with End Stage Kidney Disease or with Terminal Liver Failure, the preferred treatment is an Organ transplantation, so the latter should also be excluded from subsequent coverage.



In China, where the product addresses a strong need and the dynamic insurance market is used to frequent product updates and parallel sales of different product designs, a specific stand alone multiple CI design was the natural approach.

A stand-alone product allows more customization, focusing on the multiple benefits. As a way to improve the transparency of

the coverage to customers and to allow more flexibility in product design, the grouping approach has become the standard product design. All CI conditions are classified in several groups of inter-correlated conditions. After a claim, the corresponding group is then excluded from further coverage. A typical CI grouping would be based on the following categories:



As the product idea is relatively new there is a lot of variation in the markets, around the number and composition of groups, the maximum number of claims and the waiting period between claims.

The initial CI products saw a similar diversity at the beginning resulting in low comparability for the customer. Many markets

recognized the need for a stronger transparency and adopted standardized CI definitions.

With the maturing of the multiple benefit product, we can expect a similar development with some convergence and standardization.

Pricing challenge

The pricing implications of a Multiple CI cover might appear minor, with the “only” difference to a classical product being the reinstatement of cover. Unfortunately the coverage of a second event changes a basic principal of individual insurance, in that no longer all policyholders are healthy at the onset of coverage. On the contrary, everybody under cover for a second CI event will have a serious pre-existing condition, affecting his general health status and more importantly increasing his risk for other correlated conditions.

While highly correlated conditions should be excluded from any subsequent coverage, there are many conditions which are somehow related, either sharing similar risk factors or lightly increasing each other's risk. A balance has to be found between

covering as many conditions as possible to provide an attractive coverage to the policyholder and keeping the impact on premiums reasonable.

With incidence rates for a second event depending on the type of first event, a typical CI product with 30 covered conditions would require $30 \times 29 = 870$ incidence rates, by age and, in most markets, gender!

In addition as premium rates do not vary by the type of first condition and therefore include some level of cross-subsidy, a full profitability assessment would require cause specific mortality assumptions after a first and multiple event. Yet with limitations on the availability of statistics, a more practical approach has to be taken.

Pricing model

The derivation of incidence rates after a first CI event is closely related to the analysis performed by medical underwriters during the assessment of a new applicant with a pre-existing condition, applying for CI cover.

At the underwriting stage, the increase in risk is expressed as a multiplicative factor, loaded on top of the base incidence/premium rate. Loadings are derived based on medical research, where a similar approach is adopted. In clinical trials the increase in risk of an exposed group, compared to a non-exposed group is expressed via the Hazard Ratio (HR) (also known as the Relative Risk Ratio (RR)).

For many conditions, especially those with high correlations, a variety of medical studies can be found, supporting the derivation of pricing assumptions.

The idea is to use these results to firstly derive HR's between individual conditions, then aggregate them to HR's for a 2nd CI event in general, depending on the type of first CI condition and ultimately derive an average HR make 2nd and 1st consistent.

As many CI conditions contribute only a small fraction of total CI claims, they will have only limited impact on the calibration of second event incidences, and the analysis can be limited to the most material conditions. In many cases a matrix of the 10 most common conditions will be sufficient, contributing to 95-99% of total claims.

However, care must be taken with uncommon conditions which have a high correlation with other more common conditions.

If one condition, e.g. Stroke, has a high overlap with another, otherwise uncommon condition, e.g. loss of speech, meaning that a high proportion of people losing the ability to speak have had a Stroke previously, then the incidence rate of loss of speech after a Stroke event can increase manifold compared to the incidence rate of a healthy population and become a material contributor to the overall 2nd event ix.

In such cases an exclusion from further coverage is recommended.

Fig. 1: Derive impact of first incidence on likelihood of further other events

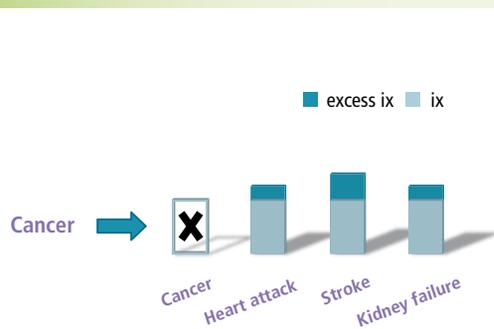
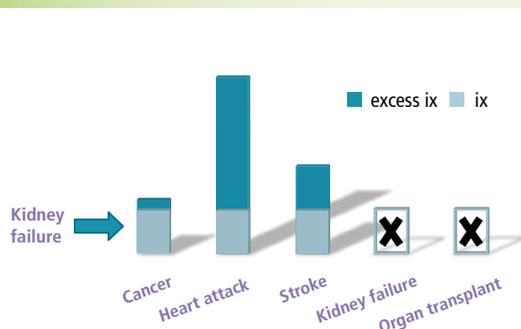


Fig. 2: Highly correlated conditions, like Major Organ Transplant, require exclusion



Pricing case study

Following the above approach an analysis has been performed based on UK data, applied to a typical CI product covering the 22 ABI conditions excl. Terminal Illness and TPD. The number of exclusions was kept to a minimum and a waiting period of 90 days between two benefits was assumed. Results show that 2nd event incidences vary significantly depending on the type of first illness. Cancer is only mildly correlated to other conditions; the increase in incidences is therefore more than offset by the exclusion of the first claim condition from future coverage. As Cancer is the main cause of CI claims, this leads to a HR for a second event below 100%, especially for women (Fig. 3). In contrast some conditions have a strong impact on the risk for several other illnesses, e.g. Kidney Failure is expected to increase incidence rates for a 2nd event by several times.

On average over all conditions the HRs for a 2nd event are relatively stable, for males at around 100% and lower for

females, even if two separate benefits are provided for Heart Attack and Stroke (Fig. 4). Based on these results it would in principle be possible to offer a 2nd event cover at unchanged premium rates.

However as premiums include a strong cross-subsidy from Cancer patients to other claimants, it is recommended to waive premiums after the first claim and load up the base premiums for the waiver of premium accordingly. An alternative is the approach adopted in Australia & New Zealand of initially charging a premium loading for the buyback option and in case of certain conditions, like Cancer, provide a discount to the reinstated cover.

Please note that the above pricing approach and results focus on the reinstatement of CI cover and do not include the reinstatement of Life cover after a CI event, which is another typical option offered on Accelerated CI products and would naturally require a higher loading.

Fig. 3: Aggregation over all 2nd event conditions



Fig. 4: Averaging over all first event conditions



Conclusion

The coverage of multiple events is a natural extension of the classical CI product, enhancing the protection of the policyholder with limited pricing implications. As our case study results have shown, 2nd event incidences are close or even lower than 1st event incidences and the only reason for a premium increase is the need for imposing a waiver of premium.

Why are we then not seeing a higher market penetration outside of Asia-Pacific?

Even though the more comprehensive coverage comes at a small premium increase, the increase may still be significant in a competitive market environment. If the perceived need of the additional coverage is not justifying the price difference, a single event CI product will remain the more attractive product. It is therefore essential to first analyze the market situation and identify the motivations for buying CI insurance and the needs for continued coverage.

As can be seen in Australia and the UK, both markets with similar customer needs, the same product design can have a very different market success. In Australia attachment ratios of buyback riders are typically around 10-15%, while in the UK sales are very limited.

Apart from marketability of this product, the pricing remains the main challenge. Due to the large variety of possible transitions in policyholder status, full modeling is very burdensome and not justified by the often immaterial impacts. We have presented an alternative simplified model which captures all essential risk elements. While sufficient for internal pricing purposes, some markets might require a higher granularity to fulfill local regulatory requirements for product filing.

Thanks to its global and in-depth expertise in Critical Illness, SCOR Global Life is optimally positioned to assist you with your product development. Our market specialists, product experts and medical underwriters can support you in designing, pricing and launching your next CI product, tailored to your local market needs.