

Submission to IAA LIFE Colloquium 2009

Speakers

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Title

Assessing Critical Illness trends - the facts behind the stats

Indication of topic

Designing life insurance products

Keywords

Critical Illness, claim rates, disease definitions, trends, medical advances, screening programmes, risk factors

Abstract of talk

ADELE GROYER, INGA KREIENSIEK **Assessing Critical Illness trends – the facts behind the stats**

Successful Critical Illness (CI) insurance pricing needs to take into account current and future expected claim rates. In recent years members of various actuarial bodies in their different capacities have been studying past data to look for clues on future trends. In this study we focus on identifying the underlying reasons for the changes seen in the past to distinguish between once-off effects and those that can reasonably be expected to continue. The illnesses included in this paper are Heart Attack, Stroke, Coronary Artery Bypass Surgery, Cancer and Multiple Sclerosis as these are the leading causes of CI claims in most markets.

The data

Industry data has its limitations for studies into trends. These include low claim volumes, benefit differences in policy generations and irregular contributions by life offices.

Population illness incidence rate statistics overcome the problems of low volume and generally tend to be collected in a consistent manner. These statistics include hospitalisation data and central registries. But adjustments have to be made to allow for differences between cases that are included in the population statistics and those that would qualify for a CI insurance claim. Some of these differences are:

- **clinical vs insurance definitions**
In some markets standard definitions are used and even these have changed over time
- **socio-economic differences**
The insured population tends to be more affluent and incidence rates can vary by socio-economic group
- **repeat treatment of an illness vs first incidence**
Hospital statistics record each admission for an illness while most CI products pay out only on the first occurrence of an illness.

Findings

Past changes appear as interferences in the data. Some examples these changes are:

- Medical treatment advances leading to better disease prevention and survival (e.g. clot busting drugs for heart attacks).
- Medical treatment advances leading to changes in treatment methods where claim events are defined by medical procedures (e.g. coronary artery bypass graft involving open heart surgery)
- Changes in medical diagnostic procedures which increase detection sensitivity (e.g. troponins to detect heart attacks, better imaging resolution on MRI scans to detect lesions in the brain indicative of stroke or multiple sclerosis)
- Formal screening programmes which increase and accelerate detection rates (e.g. breast, cervical and colorectal cancers)
- Informal screening methods (e.g. prostate cancer)
- Changes in coding which do not translate into a real change (e.g. bladder cancer)
- Lifestyle changes (e.g. smoking, alcohol consumption, cholesterol and blood pressure control)

We consider how much effect these changes may continue to have using data and CI products from the UK market as an example. Some of these changes should have no effect in the future while others will have less effect than in the past and others will continue to affect trends for some time to come.

We also outline some of the new changes on the horizon that could affect future CI claim rates.

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