Cancer: Underwriting and Claims Perspectives

John Turner, Head of Underwriting EMEA
Andy Parkinson, Head of Claims EMEA
Cancer

• Some background
• Underwriting and claims challenges
• A closer look at CI experience in the UK
• Mitigation options
• Q&A
Cancer

Lifetime risk

1 in 2 people born after 1960 in the UK will be diagnosed with some form of cancer during their lifetime

Source: Cancer Research UK
Causes of death by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Circulatory disease</th>
<th>Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU 28</td>
<td>373.6</td>
<td>261.5</td>
</tr>
<tr>
<td>UK</td>
<td>264.9</td>
<td>278.4</td>
</tr>
<tr>
<td>Ireland</td>
<td>309.9</td>
<td>288.3</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>1,131.0</td>
<td>242.4</td>
</tr>
<tr>
<td>Germany</td>
<td>403.5</td>
<td>253.2</td>
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</table>

- Cancer now leading cause of death in UK
- Very consistent cause of death rates, despite huge variance in standards of healthcare per country

Standardised death rate, 2014 (per 100 000 inhabitants) – Source EuroStat
UK causes of premature death (below age 75)

- Total 150,000 premature deaths per annum
- Cancer now easily overtaken CVD as leading cause of death
- It has long been the leading cause of insured death

Source: UK Department of Health - Living Well for Longer
Cancer : Underwriting challenges

Frankly we are not very good at predicting cancer

• The major cause of insured death has few tests suitable in an asymptomatic population
• The main tool is asking about a previous history of cancer, so we are looking for recurrence risk, not new cancer risk
• For new cancers, we rely on major risk factors such as smoking and family history
• Even possible early symptoms are often the same as those seen from risk irrelevant diseases

Cancer is usually a slowly progressive disorder

• So symptoms may be detected, or suspected, long before the first doctor consultation
• … especially in those who have seen a relative go through the same disease

Family history

• Vague, unknown, hard to validate, super-sensitive and a landmine for regulatory risk
## Breast cancer and family history

<table>
<thead>
<tr>
<th>No of 1st degree relatives with breast cancer</th>
<th>Relative risk</th>
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<tbody>
<tr>
<td>0</td>
<td>Reference group</td>
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<tr>
<td>1</td>
<td>2.14 (1.92 - 2.38)</td>
</tr>
<tr>
<td>2</td>
<td>3.84 (2.37 – 6.22)</td>
</tr>
<tr>
<td>3 or more</td>
<td>12.05 (1.7 – 85.16)</td>
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</table>

<table>
<thead>
<tr>
<th>Age at diagnosis of 1st degree relative</th>
<th>Relative risk of developing breast cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Reference group</td>
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<tr>
<td>&lt; 40</td>
<td>3.0 (1.8 – 4.9)</td>
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<tr>
<td></td>
<td>2.17 (1.86 – 2.53)</td>
</tr>
<tr>
<td>40 - 49</td>
<td>2.0 (1.5 – 2.8)</td>
</tr>
<tr>
<td>50 – 59</td>
<td>2.3 (1.7 – 3.2)</td>
</tr>
<tr>
<td>60 or over</td>
<td>1.7 (1.3 – 2.1)</td>
</tr>
<tr>
<td></td>
<td>1.68 (1.44 – 1.96)</td>
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</tbody>
</table>

But cancer survival is improving rapidly

- So what about products which pay out on diagnosis not on death?

Source: Cancer Research UK
CI Claims - Key illnesses

Male

- Benign Brain Tumour: 2%
- Stroke: 8%
- Other CVD: 10%
- Other: 14%
- Multiple sclerosis: 3%
- Heart attack: 18%
- Cancer: 44%

Female

- Cancer in situ: 1%
- Heart attack: 3%
- Other CVD: 2%
- Stroke: 5%
- Benign Brain Tumour: 2%
- Multiple sclerosis: 6%
- Other: 8%
- Other: 8%
- Cancer: 73%

Source: Swiss Re Life & Health UK
CI Claims - Male cancers

Source: Swiss Re Life & Health UK
CI Claims – Female cancers

Source: Swiss Re Life & Health UK
Breast cancer incidence rates over time

Breast cancer death rates in the same population:
1975 to 1989: increase by 0.4% per year
1990 to 2015: decreased by total of 39%
Represents over 320,000 lives saved.

Trends in Female Breast Cancer Incidence Rates by Age
United States, 1975 to 2014.
Rates are per 100,000 females and are age adjusted to the 2000 US standard population. Invasive incidence rates were adjusted for reporting delay. Source: Surveillance, Epidemiology, and End Results program.
Regulatory risk

Cancer is emotional and common. That makes it of political interest

Not helped by different, but both correct, interpretations of same statistics:

- Own doctor says “You are cured”
- Insurer says “You must pay X additional premium”

Perceived unfairness, especially as ratings tend to be upfront loaded

**Wider anti-discrimination legislation**

- Statistical justification is key

**Cancer specific**

- *Le droit a l’oubli* cancer for insurance – French law, already being copied internationally
Question:

Recognising the limitations of Underwriting, can Claims help?
Cancer: Underwriting and Claims Perspectives
Andy Parkinson, Head of Claims EMEA
The Resilience of CI?

- Worsening CI claims experience in recent years
- Investigated by cross-functional team.
- Areas of attention:
  - Timeliness of CI claims reporting
  - Explore causes of step change in cancer experience, especially for higher sum-insured females
  - Other emerging risks
Claims Deep Dives

• Claims reviewed in depth
  – Remote and on-site
  – Exploring traditional and softer, non-traditional data
  – Keen to collect qualitative insights; the ‘story’
  – Multi-disciplinary
Claims Deep Dives – outcomes

- Material numbers of:
  - ‘late notifications’
  - Impact on IBNR and pricing

![Graph showing the proportion of claims expected to be reported within N years from loss date. The graph shows a steady increase from 90% to 100% over 9 years.](image)
Increase in average incidence rate for age-bands in the range 20 – 59 (base year 2005)

Source: English cancer registry
Claims Deep Dives – outcomes

• Material numbers of:
  – claims with a relevant family history
  – ‘early claims’ for claimants with a relevant family history
CI Claims – Female cancers

Source: Swiss Re Life & Health UK
Increase in breast cancer incidence rate (base year 2000)

Population, females, England

Source: English cancer registry
Claims Deep Dives – outcomes

• Material numbers of:
  – claims with a relevant family history
  – ‘early claims’ for claimants with a relevant family history
  – breast cancer claimants who disclosed at application a benign disease history
  – claims arising from screening, rather than symptoms

• Declining / Level / Increasing cover differences

• Female amounts experience higher than simple lives experience
Percentage deprivation gap in age-standardised incidence rates
(% gap between highest and lowest deprivation group)

Source: Cancer Research UK
Claims Deep Dives - outcomes

• Scope to enhance claims management:
  – investigation of misrepresentation
  – accuracy of retrospective underwriting
  – objective approach to balance of evidence
  – transparency/understanding of pricing assumptions: claims philosophy applicable to the different generations of cover
The role of ‘environmental’ factors

Breast cancer screening

- NHS extended breast cancer screening programme extended in 2007 (previously age 50 – 70, extended to age 47 for approx. 50% of women in England): trial will run to mid 2020s.
- Greater public awareness of breast cancer risk and referral of higher risk lives for targeted screening
- Family history is a key consideration; the NHS assesses family history based on first, second and third degree relatives.

GP practice

Consumer behaviour
The role of ‘environmental’ factors

Thyroid cancer screening in Korea

The financial impact of this is greater where long-term guarantees are in place.

Sohee Park et al, *Association between screening and the thyroid cancer “epidemic” in South Korea: evidence from a nationwide study*, BMJ 2016; 355 http://www.bmj.com/content/355/bmj.i5745
The role of ‘environmental’ factors

Medical advances

“Liquid biopsy” - the term used to describe a molecular test done on a sample of blood (or other bodily fluids such as plasma, cerebrospinal fluid, or urine) to look for tumour material circulating in the blood such as:

- circulating tumour cells (CTCs)
- cell free DNA (cfDNA)
- exosomes (vesicles containing tumour material)

http://egfrmutationtestv2.roche.com/liquid-biopsy/
Potential impact of ‘Liquid Biopsy’

(Illustration only)

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<td>116</td>
<td>29</td>
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</table>

DEVELOPMENT OF THE CANCER

TIME

- Dark dotted line: Symptoms and Current Diagnosis
- Red dotted line: Liquid Biopsy ‘Diagnosis’
- Yellow line: Cancer Regresses
- Light blue line: Cancer Progresses
- Cyan line: Cancer Stalls
The use of liquid biopsy for diagnosing cancer

- Liquid biopsy is not yet clinically validated for use to **diagnose** or screen for cancer. (Trials are underway to assess diagnostic accuracy of liquid biopsy in poorly detected cancers (lung, pancreas))

- However, the technology has the potential to be used in the future for **screening** for cancer
Direct-to-Consumer cancer screening test offered online
Answer:

Claims can help, including enhancing the customer experience, but...
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How do we make the CI world more Resilient?

Traditional options:
- Review price
- Enhance underwriting
- Amend definitions and product design
- Objective claims assessment in line with pricing assumptions

And…
- Multi-disciplinary approach to ensure full transparency and understanding of both risks and practice
- Innovative approach to improving the health of “the inforce”
- Study the present, scan the future
Any questions?
Colour palette for PowerPoint presentations

Dark blue: R17 G52 B88
Gold: R217 G171 B22
Mid blue: R64 G150 B184

Secondary colour palette

Light grey: R220 G221 B217
Pea green: R121 G163 B42
Forest green: R0 G132 B82
Bottle green: R17 G179 B162
Cyan: R0 G156 B200
Light blue: R124 G179 B225
Violet: R128 G118 B207
Purple: R143 G70 B147
Fuscia: R233 G69 B140
Red: R200 G30 B69
Orange: R238 G116 B29

Total: