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13th Global Conference of Actuaries 2011

Emerging Risks... Daring Solutions


Evidence-Based Underwriting and why Actuaries get involved

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What is EBU?

- Or how is the content of underwriting manuals decided upon?
 - It shouldn't be evidence-biased
 - It shouldn't be eminence-based



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EC Anti-discrimination directives

- Gender Directive (unlawful to subject anyone to less favourable treatment because of his or her gender)
 - Proportionate differences are permitted, if
 - Gender/sex is a determining factor
 - Based on relevant and accurate actuarial and statistical data
 - Exemption to be reviewed every 5 years
 - 1st March: ECJ will rule on validity of this exemption

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EC Anti-discrimination directives

- Extended Equal Treatment Directive* (discrimination on grounds of age, disability etc)
 - Proportionate differences are permitted, if
 - Age or disability is a determining factor
 - Based on relevant actuarial principles AND relevant and reliable statistical data or, WHERE NOT AVAILABLE, medical knowledge
 - Providers shall provide information justifying the decision

* Based on latest proposal from the Belgian presidency
12/2010

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And elsewhere?

- Australia: Section 46 of the Disability Discrimination Act 1992
 - Discrimination acceptable if decision can be reasonably based on the relevant information
- New Zealand: Human Rights Act Guidelines 1993/2007
 - Regarding disability, insurers can rely on reputable medical or actuarial advice or opinion, if reasonable
- HK: Disability Discrimination Ordinance 1995
 - Differential treatment if it is effected by reference to actuarial or other data from a reliable source

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UN CRPD (Article 25 (e))


UN CRPD

- States shall prohibit discrimination against persons with disabilities in the provision of health insurance, and life insurance ..., which shall be provided in a fair and reasonable manner

Singapore Interpretation

- A difference in treatment ... is permissible if this is deemed **fair and reasonable**
- Fair and reasonable is defined where this is based on actuarial or statistical data, clinical surveys, or studies, which are statistically robust or significant

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Where do we stand?

- Industry is constantly challenged to justify decisions and being examined for fairness
- The burden is upon the industry
 - Using appropriate discriminating factors
 - Asking relevant questions to elicit critical information
 - Differentiating based on evidence
 - Offering transparency
 - Being at the forefront of medical research
 - Collecting data
 - Lobbying for the “right to underwrite”

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Rationale for EBU

Appropriateness

- To ensure underwriting guidelines used are based on suitable actuarial and medical research

Justification

- To have reasoned and defensible evidence available for our recommended underwriting guidelines

Alignment


- To ensure underwriting manuals are justifiable in terms of equality and anti-discrimination laws

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Rationale for EBU



Updates

- Mortality/Morbidity improvement/deterioration and medical advances require regular reviews

Competition

- To offer terms to as many people as possible – also at the edges

Profitability


- To write all risks (incl. sub-std. risks) with a reasonable chance of success

Know How

- To demonstrate the industry's knowledge of risk assessment / risk categorisation

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Is the work clear-cut?



Lack of data

- Lack or paucity of 'local' medical, statistical or other data
- Lack of 'insured' lives data
- Lack of co-morbid effects

Interpretation

- Statistics alone – as frequently suggested by legislator – would not result in a common underwriting guideline

Bringing it together

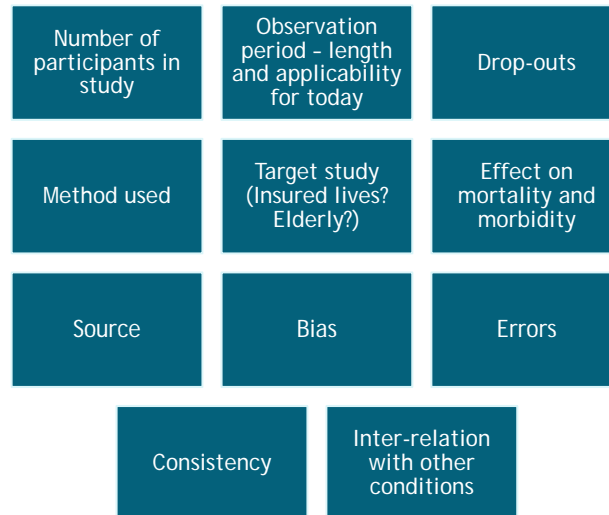
- Need to have experts who can interpret the material and identify what is important and how to make it work for our purposes!

Methodology

- Important are a robust EBU approach and an experienced inter-disciplinary team

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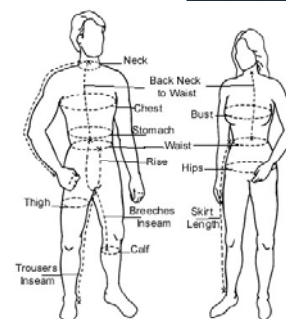
Minimum Standards of Research

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Example: Under-/Overweight: Measuring up

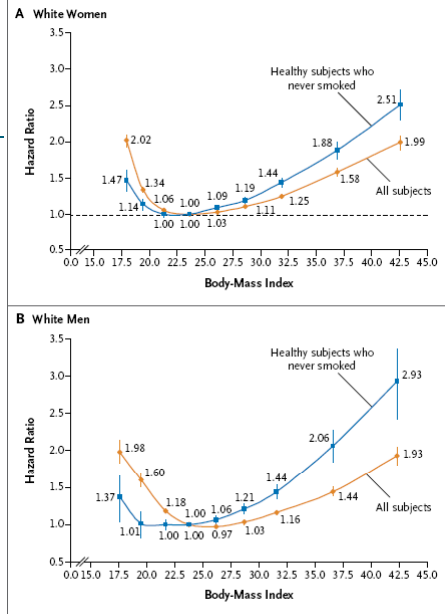
- Causes for extreme weights
- Which complications are caused?
- Trend / Differences in population groups
- Co-morbidity
- What evidence is available?
- What is „Standard“?
- What shall/can be measured? BMI!
 - Proxy
 - Correlates with amount of body fat

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Evidence

- US population study (example)
 - Pooled data from 19 studies
 - 1 460 000 participants
 - More than 160 000 deaths
 - 10 years median observation period
 - White adults only

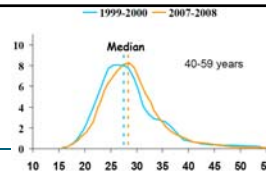


Berrington de Gonzalez et al.
 BMI and Mortality among 1.46 Million White Adults.
 N Engl J Med 2010;363:2211-9.
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Adjustments

- Multiple adjustments for insurance purposes
 - Insured vs Population
 - E.g. the range of standard (in the study a BMI of 22.5-24.9 has the HR of 1.0)
 - Trend
 - Finer age differentiation
 - Applicable to other population groups?
 - Co-morbidity
 - Extrapolation
 - For which BMI levels is data unreliable or is level of co-morbidity too high?



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Expectation

- EBU requires every effort is made to ensure a comprehensive study of all relevant and available statistical, medical and empirical data is made
- This is expected from the industry to ensure insurers operate within the bounds of equity and fairness

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UK CMI on impaired assured lives

- “The CMI believes that the information yielded by this investigation has strategic importance to the insurance industry, in demonstrating the need to underwrite, to charge additional premiums for impaired lives...” CMI Working Paper 36: The mortality of impaired assured lives: Report on 1995-2006 experience and consultation on the future of the investigation
- CMI has ceased collecting data for this investigation after 2006

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Conclusion

- Legislation requires evidence for risk categorisation
- Industry needs to collect more data
- Actuaries have to get involved and this requires
 - More experience in biostatistics
 - Thorough understanding of the underwriting process
 - Understanding differences between clinical and insurance medicine
- Need to lobby more for the need to risk classify

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