The Actuarial Profession
making financial sense of the future

Health and Care Conference 2010
Maeve Fleming, Stuart Johnson, Karin Lloyd

Mortality in the under 40's

a deadly cocktail of drink, drugs & stress?

May 14, 2010

Speakers

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Agenda

Part 1
- Did you know? Some statistics for the actuaries
- What are we underwriting?
- What do claims say?
- What does the future hold?

Part 2
- Does our selection process make sense?
- The industry view
- What can we do about?

Part 3
- The control cycle – how can we use claims?

Basic Premise

Burgeoning evidence tells is there are three age-distinct domains of mortality risk

- Ages 18 – 35/39
- Ages 35/39 to ages 65/70
- Ages 65/70+

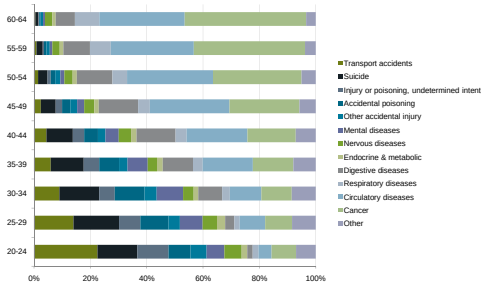
What makes these 3 age groups distinct?

- Ages 18 – 35/39 **TRAUMA**
- Ages 35/39 to ages 65/70 **CHRONIC DISEASE**
- Ages 65/70+ **FRAILTY**

Did you know?

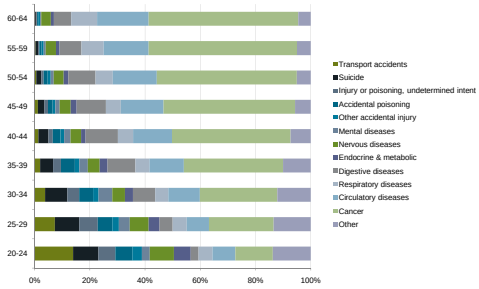
Source: drinkaware.co.uk

Main causes of death by age group Males - 2008



Source: Office of National Statistics

Main causes of death by age group Females - 2008



Source: Office of National Statistics

Key points

External causes

- Over 60% of male deaths for ages 20-24
- Reduces to less than 5% for ages 60-64

Cancer

- Less than 10% of male deaths for ages 20-24
- Increases to over 40% for ages 60-64

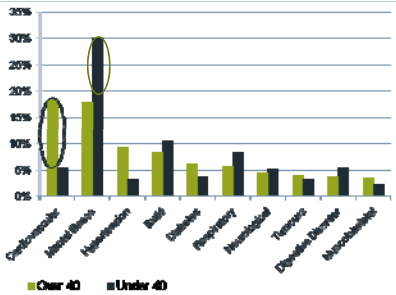
Respiratory diseases

- Less than 5% of male deaths for ages 20-24
- Increases to over 30% for ages 60-64

What are we rating?

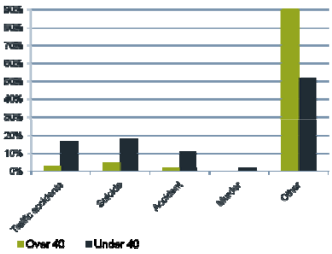
Sample of 9,801 cases:

- 70% of Over 40's cases rated
- 48% of Under 40's cases rated



Source: Medicals Direct

Mortality claims experience - Males
Sample large insurer



Lifestyle key risk factor for under 40's

What does the future hold?
The CMO view:

"The major changes in cancer risks from lifestyle in < 40 are in oral and oesophageal cancer. Both are showing significant epidemiological change in traditionally low risk age groups. Alcohol and possibly obesity remains a significant risk factor."

James D Brenton, Oncologist

"Smoking is declining in older populations but is on the increase in the young. In particular there is an increase in young women starting smoking which is concerning. COPD/chronic airways disease is related to the total amount you have smoked as is lung cancer. The risk of several other cancers (renal definitely and also oral cancer) are also increased with smoking."

Mark Westwood, Cardiologist

What does the future hold?
The CMO view:

"Alcohol is a major problem at the moment with 25% of all hospital admissions being related to acute or chronic problems from alcohol. In the young it is binge drinking and the 'alcopops' saga. What middle England drinks has changed and also the amount (especially in the 30-40 age group) has increased dramatically."

"There is no doubt that the use of cocaine since the 1980's has surged due to the falling price. Cocaine causes coronary artery spasm (sustained contraction of the coronary arteries) which can cause heart attack. This is often the cause in young people (in their 30's etc)."

Mark Westwood, Cardiologist

Does our Selection Process need to Change?

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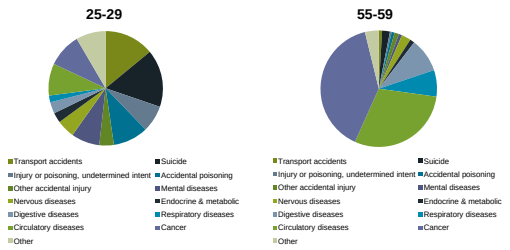
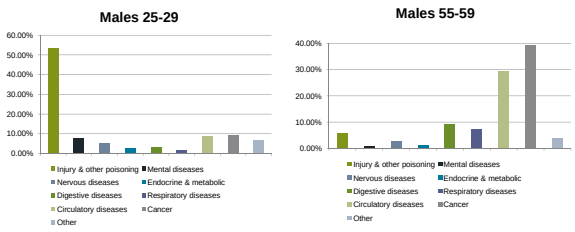
Leading Causes of death – Males 25-29 vs. 55-59



Source: Office of National Statistics

Risk Factors – Males 25-29 vs. 55-59



Source: Office of National Statistics

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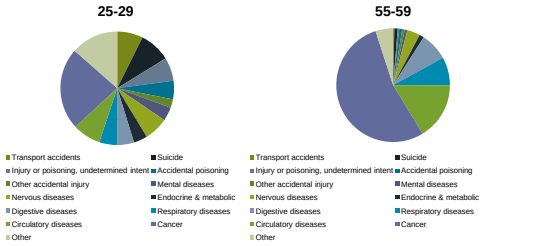
15

Leading cause of death – Females 25-29 vs. 55-59



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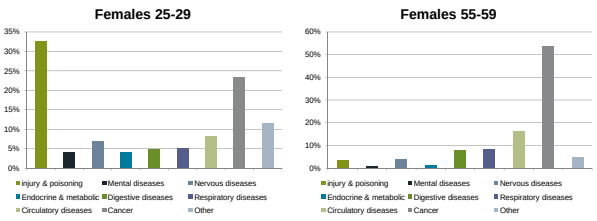
16

Risk Factors – Females 25-29 vs. 55-59



Source: Office of National Statistics

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17

Question

Based on this data – can there be a common application process across all ages and both sexes?

The logical answer is that there shouldn't be.

The industry view

We asked leading underwriters in the UK and Irish market to give their insight into how to solve this problem:

- Michael A Whyte, Aviva
- Matt Rann, Aegon
- Simon Jacobs, AXA
- Mike Taylor, AXA
- Lynda Mizen, Fortis
- Brian Allen, Zurich
- Jean Larkin, Aviva
- Michael Shelley, Irish Life
- Noel Finnegan, New Ireland

THANK YOU!

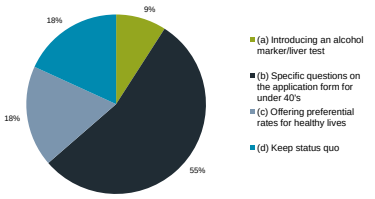
Question 1

What do you think would work best to improve the quality of your portfolio in respect of under 40's, all else being equal:

a) Introducing an alcohol marker/liver test
b) Changing the questions on the application form to have specific questions for the under 40's
c) Offering preferential rates for healthy lives
d) Keep status quo

Question 1

What do you think would work best to improve the quality of your portfolio in respect of under 40's, all else being equal:



Question 1

What do you think would work best to improve the quality of your portfolio in respect of under 40's, all else being equal:

"changing the questions is most important here, focusing specifically on lifestyle"

"could rate for motorcycling"

"questions still do not capture some of the key risks for this age group"

"I don't think the traditional tests of Gamma GT have too much use. More sensitive markers need to be used, e.g. CDT"

Question 2

Do you think the typical questions (see below) relating to alcohol elicit the truth from the under 40's?

A. How many units of alcohol do you drink per week?

B. Do you drink Monday to Thursday or just at the weekends and how many units?

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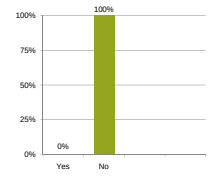

"better than nothing"

"we need to go further to understand the impact of alcohol in younger lives"

Question 3

How well do you think typical lifestyle questions pick up suicide risks?

What other questions could be asked?

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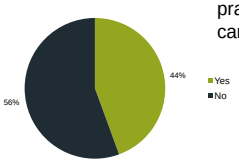
How well do you think typical lifestyle questions pick up suicide risks?

"adequate given the practicality of what we can actually ask"



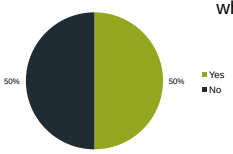
"in an ideal world I'd like to understand time off work, patterns of time off, attitude to illness or stressful situation"

"our claims are telling us a consistent story... alcohol/depression is the biggest area of non-disclosure, so we need to take action to reduce it"

Question 4

Do you feel we should be asking directly about penalty points/drink driving?

"potentially it's useful but I don't know what the legal view would be"



"I don't think anyone would admit to the criminal behaviour of drink driving"

Question 5

Do you believe waist/hip ratio details are useful in assessing the mortality and morbidity risk for under 40's (in addition to using BMI details)?

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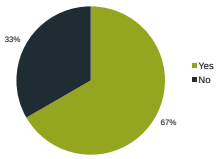
Do you believe waist/hip ratio details are useful in assessing the mortality and morbidity risk for under 40's (in addition to using BMI details)?

"Yes, preferably also using exercise"



"I am unconvinced and prefer BMI"

Question 6

Have you observed any change in the risk profile of your under 40's portfolio over the past few years?

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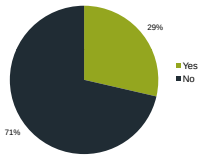

"yes, more ratings for obesity and also an indication that there are more deaths from violent acts"

"no – lifestyle is not the easiest area for proper data collection"

"younger lives are more aware of their health history, which does benefit solutions like tele-interviewing as a means for getting evidence"

Question 7

As a risk manager, do you have any other suggestions of how to better assess the mortality and morbidity risk for under 40's?

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As a risk manager, do you have any other suggestions of how to better assess the mortality and morbidity risk for under 40's?

"There are 3 key areas which are going to cause us problems over the next decade or two – obesity, drug use and alcohol. None of these are easy to assess or predict through traditional underwriting but we must find better ways drawing out these issues through increased lifestyle and behavioural questioning, perhaps using a very different and (unfortunately) possibly longer application form."

Question 7

As a risk manager, do you have any other suggestions of how to better assess the mortality and morbidity risk for under 40's?

"The key areas for younger lives are lifestyle driven, so better assessment of alcohol, weight and driving are essential. Other areas that need a greater focus to improve risk selection are drugs and smoking."

Question 7

As a risk manager, do you have any other suggestions of how to better assess the mortality and morbidity risk for under 40's?

"**In an ideal world**
- ask about exercise regimes/gym membership & frequency of use.
- include tick box for alcohol asking do you drink between 0-15 units, 16 - 30units, 31 - 45 units, more. Don't leave it to the client to disclose, give options
- ask if you're a weekend/social smoker
- ask specific question about drugs - do you/have you used cocaine, marijuana."

Question 7

As a risk manager, do you have any other suggestions of how to better assess the mortality and morbidity risk for under 40's?

"understand what your claims are telling you"

"asking the right questions & grouping similar risks together"

Question 7

As a risk manager, do you have any other suggestions of how to better assess the mortality and morbidity risk for under 40's?

"None that are practical or acceptable in the current IFA market!"

So… What can we do about it?

- Design application forms to reflect the risk?
- Design evidence protocols appropriate to the risks presented?
- Do nothing?

Application Form Questions to elicit lifestyle risks

- Alcohol Risk
  - Ask type and quantity of alcohol consumed (NOT how many units)
  - Ask if ever attended A&E for alcohol related reasons
  - Ask if ever convicted for driving whilst under the influence of alcohol
  - Ask how many days per week alcohol is consumed (will also help to identify binge drinking!)
  - Ask if ever advised to reduce/modify alcohol consumption
  - Ask if ever missed work due to alcohol

Application Form Questions to elicit lifestyle risks

- Accident Risk
  - Ask if ever convicted of drink driving offence
  - Ask if driving licence has been endorsed for speed related offense
  - Ask mode of transport (car/motorcycle)
  - Ask engine size
  - Ask about fractures/sprains

Application Form Questions to elicit lifestyle risks

- Suicide Risk:
  - Ask detailed questions around depression/stress/anxiety
  - Ask for details of time off work (number of occasions and days)
  - Number of visits to have GP in last 12 months
  - Family history of depression/ suicide
  - Ask regarding recreational drug use

Medical Evidence

How might our precious funds for risk management be reallocated to optimise the protective value of underwriting?

Additional Evidence

- Teleinterviewing – more widespread use
- Alcohol markers
- Drug screening

In Summary

- The current selection process is primarily based on product and generally doesn't take account of the age or sex of the applicant.
- The application process should elicit information relevant to the risk presented.
- Routine screening for some of the important risk factors should be considered.
- Wider use of teleinterviewing, nurse screenings & tests should replace GPR's as the cornerstone of underwriting.

Part 3

- Claims issues under age 40 and for these causes of claim
- The control cycle – how can we use claims data?

45

Sudden death under age 40

- Arguably a bigger shock for those submitting claim than for older lives
- Delays due to post-mortem, inquest, etc
- Less likely to have a will
- Can be difficult to distinguish between accident and suicide
- Can be difficult to obtain proof of alcohol or drugs contributing to death e.g. blood alcohol levels
- Can be difficult to pin down non-disclosure of substance abuse or mental illness - evidence open to interpretation

Non-disclosure scenario

- Male age 36 dies in RTA
- Application - alcohol consumption 15 units pw. Nil else
- Cover passed at ordinary rates, no further evidence
- Inquest reports deceased had been on a night out at time of accident. Blood alcohol - borderline. Previous conviction for drunk driving. Verdict - accidental death.
- GP report obtained - states he consulted 6 months prior to application for indigestion and was advised to reduce alcohol intake from 31 units per week, no further follow-up

Claim decision?

Could this risk have been selected out?

- Traditional application forms are restricted in number and style of questions
- Going back for clarification takes too much time and could threaten a sale
- Tele-interviewing allows more detailed probing into lifestyle risks through structured conversation e.g. patterns of drinking as well as amount
- Driving history

What would have been required to prove deliberate non-disclosure?

- Multiple corroborating questions - the more answered incorrectly, the more persuasive of intent to deceive
- Objective questions answered incorrectly e.g. medical consultations, hospital tests. It's hard to argue that you've forgotten these
- Time period that questions relate to e.g. traditional applications can only ask about current habits. Even a GP report showing a higher level a few months earlier cannot prove that the question was answered incorrectly *at the time of application*

What would have been required to prove deliberate non-disclosure?

- Question re: 'last time you visited your doctor' - in this case, it should have elicited the indigestion consultation. However, a traditional application would state 'exclude minor conditions' so we could not have argued that this was non-disclosed at claims stage
- Question re: 'have you ever been advised to reduce alcohol intake?' Most applications have this but on it's own, it is not enough. What % of the population haven't been told to lose weight, drink less and stop smoking by their doctor at one time?! Absence of further follow-up implies not a significant medical concern

Other issues

'My husband told the salesman but he said it was too minor to worry about'

- Detailed notes of sales conversation
- Recorded tele-interview

'We've now done over 100000 tele-interviews with one claims dispute.'

Andrew Gething, MorganAsh

The claim decision is just the beginning…

- The beneficiary is his wife (and two young children); no prior knowledge of husband's medical history
- If you decline the claim you may be telling this innocent party that she will not have any financial support because of a drinking problem she didn't know her husband had and which, as far as anyone knows, didn't cause his death
- *How* you communicate is as important as *what* you communicate
- Does your company employ people capable of being robust, sensitive and empathetic at the same time?

A line on drugs…

- Questions about drugs are fraught with problems
  - May require admission of a criminal activity
  - If non-disclosed, what can we do about it at claims stage? E.g. smoked cannabis at college - are you really going to apply a penalty? But where do you draw the line? Context is important
  - As per alcohol and smoking, difficult to prove what was true at time of application without drug screening at that time
- At claims stage proving a causal link is required before invoking an exclusion
- Drug addiction without non-disclosure is a legitimate cause of IP claim, so must be paid if no exclusion in place - no room for moral judgements

Morbidity due to alcohol, drugs, 'stress'

- No objective capability tests
- License/health and safety requirements to do job
- Unpredictable duration regardless of medical opinion
- Obtaining true picture of factors influencing return to work
- Lack of employer support for those in work and reluctance to take on new employees with this history
- For traditional IP, potentially high reserve to age 65
- Do the drugs in common use now cause future mental illness?

What do good claims teams do about it?

- Don't rely on GP predictions of return to work, manage intensively from day 1
- Talk to claimant in detail as soon as possible after notification
- Work co-operatively with claimant and others with vested interest e.g. spouse, employer
- Look at vocational rehab. options early, even for own occ. definition
- Get expert review of treatment plans
- Use tools such as trial periods, gradual rtw, work hardening, etc

Duration management best practice

- Timing of decision to stop work is critical and needs examining carefully to uncover factors influencing rtw
- Claims role is not to get people back to full *health*, it is to get people back to partial or full *functioning.* Improved health often follows

"Is work good for your health and well-being?" Waddell and Burton 2006

Health after moving off social security benefits: Claimants who move off benefits and (re)-enter work generally experience improvements in income, socio-economic status, mental and general health, and well-being.Those who move off benefits but do not enter work are more likely to report deterioration in health and well-being.

Duration management best practice - time to move on?

At the Protection Review in 2008 Mansel Aylward gave a summary of the results of recent research that has implications for claims best practice:

- Medical condition is one of the least important factors in determining future productive life yet typical claims practice follows a medical model
- Traditional to start thinking about rehabilitation once the medical sources have been exhausted - isn't this the wrong way round?
- People do better when they feel in control yet the typical claims process robs people of control e.g. reports are written about them and sent secretly between doctors and insurers
- Financial incentives to return to work are effective - do current products provide enough?

What can we learn from claims data?

- Critical examination of current risk selection criteria - do they work?
  - For mortality, mostly yes
  - For morbidity - no!
    - Incidence risk - currently underwritten based largely on medical model of likely development of illness
    - True nature of the risk is attitude once illness strikes and motivation to work, but this is a moving target
    - Duration risk - is this underwritten at all? This is the real financial issue

Are there common patterns in claims data that could lead us to develop new proxies for risk selection?

- Claims data to examine includes:
  - what has led to decision to stop work? Most IP claimants have worked WITH the illness for some time before deciding to cease work
  - previous work history
  - significant life events preceding illness
  - family situation
  - geography and economic conditions
  - nature of employment
  - frequency of job change, etc
  - exercise, holidays, how did people spend leisure time prior to illness?

Exploiting claims information

- A mass of lifestyle information is available as incidental detail from medical reports and claimant's own description of circumstances
- Collecting and recording it is a challenge - many traditional systems can barely handle the information needed to make a claim payment
- Technology is available to mine unstructured data
- Limited pilot studies can collect detail from a claims sample to prove concept
- Potential to turn what is learned into tele-interview questions - not possible on paper
- At point of claim should we collect info. beyond that needed for claim decision to test potential value of new risk selection questions? E.g. driving history

Claims prevention - improving the portfolio?

- Could/should insurers have a role in prevention once they've taken on a risk?

  Figures from one large company show the real story is men under 40 - almost half of all claims from this group are due to RTA, suicide, accident or murder, compared with 10% for over-40s

- Financial motivation - achieving a better result than the pricing model?
- Other motivations
  - As a differentiator?
  - New model of getting policyholders more engaged with their long-term cover, reduce switching, etc?

How?

- Raising awareness among those most at risk - transparent claims stats. on causes of claim, sources of help, etc
- Confirmation that seeking help for conditions developed since policy commencement will not compromise future claims but non-disclosure will
- Health promotion incentives
- Could we get brownie points as an industry for supporting public health initiatives?

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenter.