

2004 Life Convention
7-9 November

EICC Edinburgh Scotland
Changing Mortality Trends and Risk Factors
By Hamish Galloway & Amanda Jones

Introduction & Acknowledgments

- q The Past
- q The Present
- q The Future

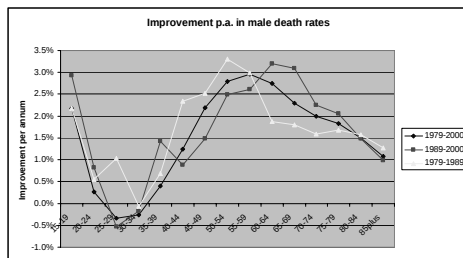
- q Acknowledgments
 - q CMI Data
 - q ONS Data
 - q CI Trends Working Party
 - q Richard Willets et al – Longevity in the 21st Century

RECENT TRENDS IN MORTALITY

THE PAST

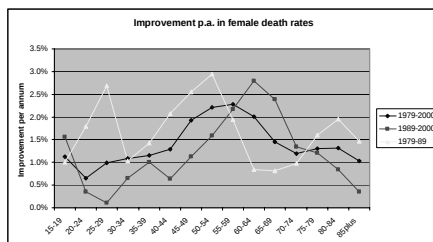
- q Aging of Mortality Improvement
- q Cohort Effect
- q Uncertainty at Younger Ages
- q Smoking Effect
- q Social Class Differential

Recent Trends in Male Population Death Rates



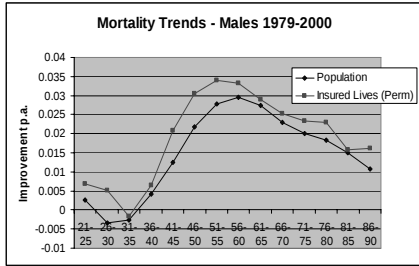
Log Linear fit to ONS Data

Recent Trends in Female Population Death Rates



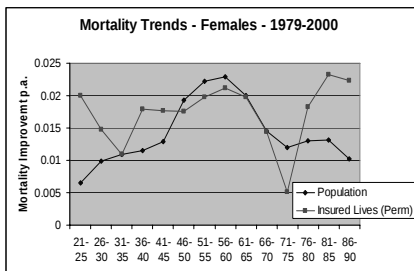
Log Linear fit to ONS Data

Insured Lives v Population – Males 1979-2000



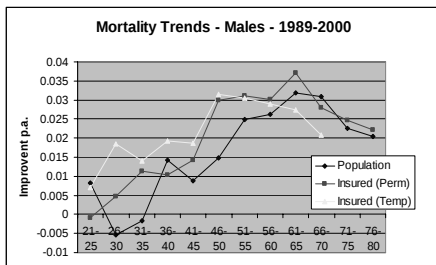
Insured Life data derived from CMI Ultimate Only

Insured Lives v Population – Females 1979-2000



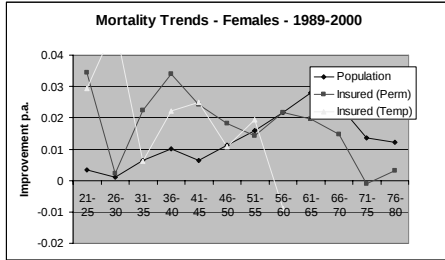
Insured Life data derived from CMI Ultimate Only

Insured Lives v Population – Males 1989-2000



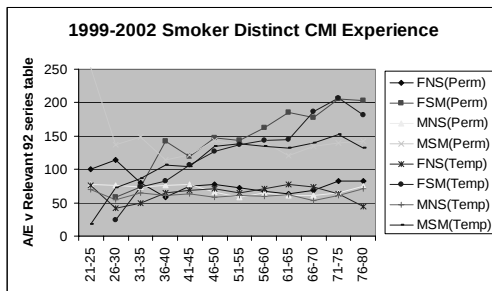
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Insured Lives v Population – Females 1989-2000

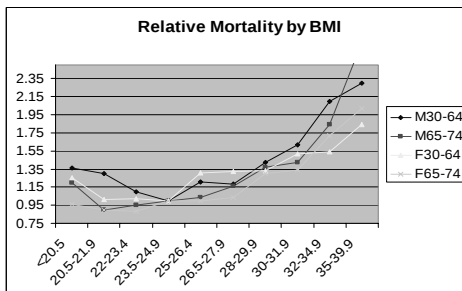


Insured Life data derived from CMI Ultimate Only

Effect of Smoking on Mortality



Effect of Body Mass Index on Mortality (US)



Source: Calle EE et al, NEJM, 1999 Oct 7;341(15):1097-105

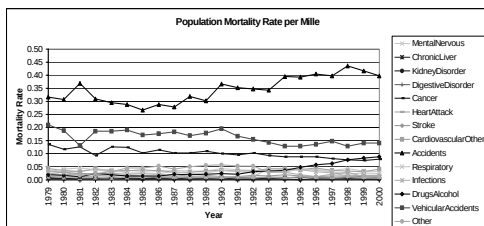
RECENT TRENDS IN MORTALITY BY CAUSE

THE PAST: Causes of Death

- q 1979 – 2000 Population data
- q 12 Graphs
- q 3 Age Bands
 - q 25-29
 - q 40-44
 - q 55-59
- q 2 Genders
 - q Male
 - q Female
- q Causes:
 - q All
 - q Minor

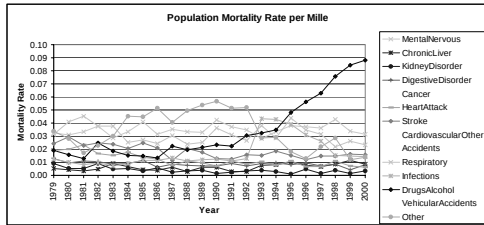
THE PAST – Population Mortality (1979-2000)

- q Males, 25-29, All Causes



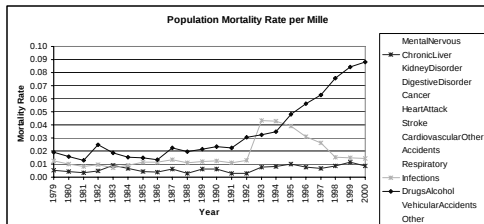
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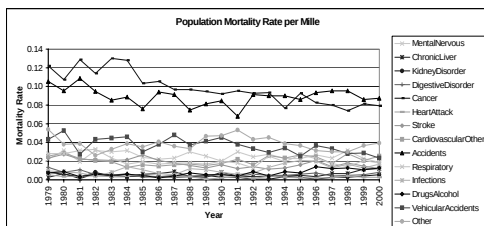
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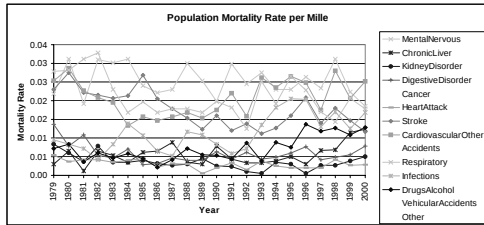
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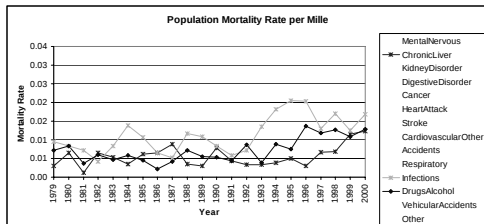
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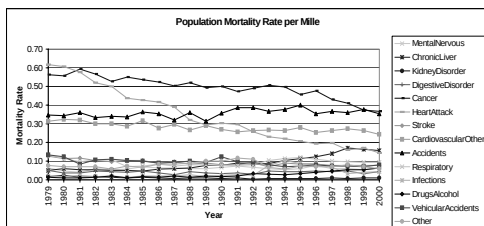
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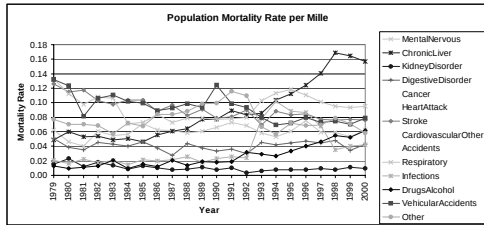
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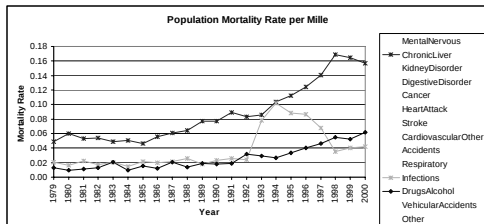
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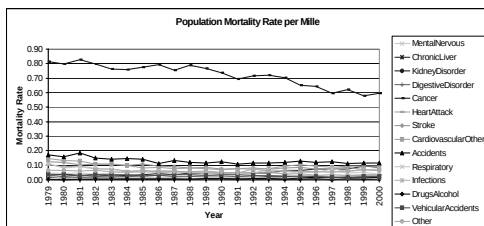
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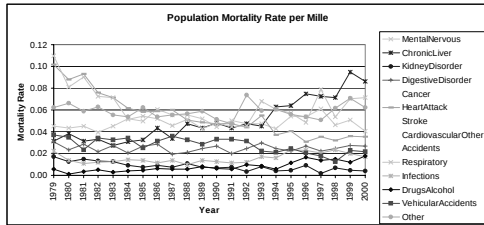
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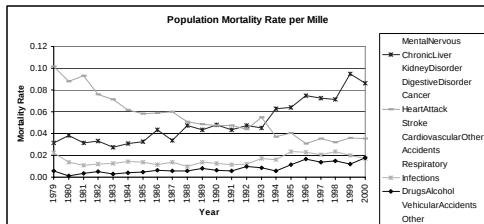
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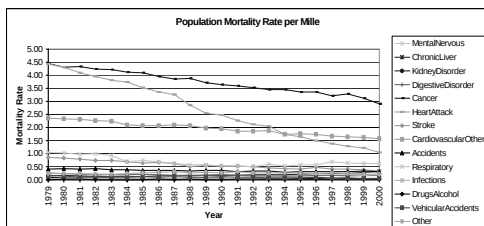
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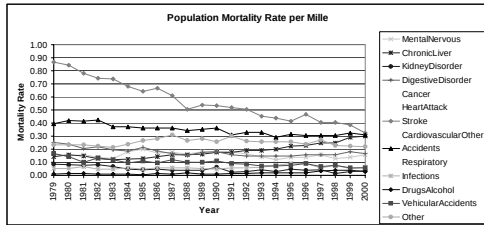
THE PAST – Population Mortality (1979-2000)

♂ Males, 55-59, All Causes



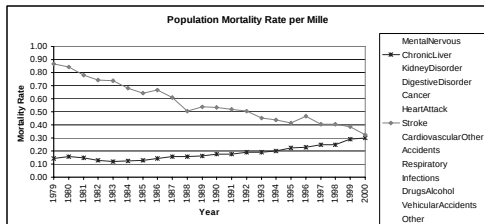
THE PAST – Population Mortality (1979-2000)

q Males, 55-59, Minor Causes



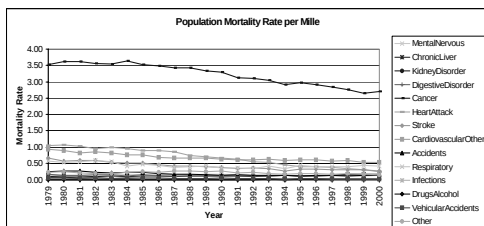
THE PAST – Population Mortality (1979-2000)

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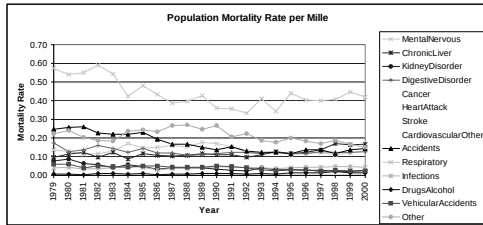
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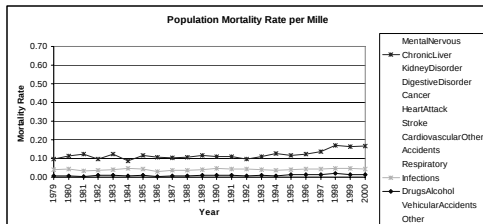
THE PAST – Population Mortality (1979-2000)

q Females, 55-59, Minor Causes



THE PAST – Population Mortality (1979-2000)

q Females, 55-59, Minor Causes



THE PAST – Population Mortality (1979-2000) - Trends

q Causes that show increasing trend

- q Drugs&Alcohol
- q Accidents (non-vehicular)
- q Chronic Liver
- q Infections

q Causes that decreasing trend

- q Cancer
- q Cardiovascular
- q Vehicular Accidents

THE PAST – Population Mortality (1979-2000) - Trends

Causes that show increasing trend

Drugs&Alcohol

Accidents (non-vehicular)

Chronic Liver

Infections

Lifestyle

Causes that decreasing trend

Cancer

Cardiovascular

Vehicular Accidents

Medical

POSSIBLE REASONS FOR CHANGES IN CAUSES OF DEATH

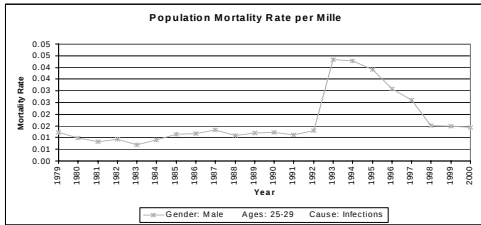
THE PAST – Population Mortality (1979-2000) – Possible Reasons

Data

12

THE PAST – Population Mortality (1979-2000)

q Males, 25-29, Infections

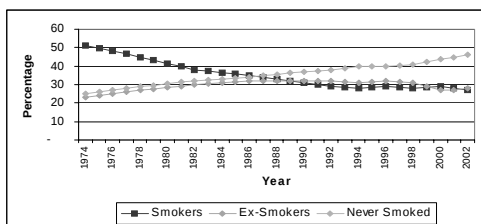


THE PAST – Population Mortality (1979-2000) – Possible Reasons

- q Data
- q Lifestyle
 - q Smoking
 - q Drinking
 - q Drugs
 - q Obesity
 - q Exercise

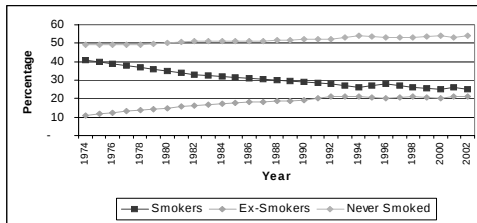
Smoking Trends

q Males: Cigarette Smoking (1974-2002)



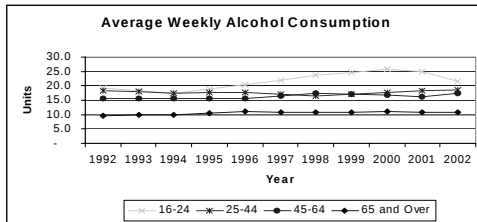
Smoking Trends

q Females: Cigarette Smoking (1974-2002)



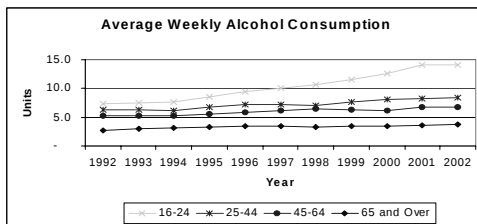
Drinking Trends

q Males: Drinking (1992-2002)



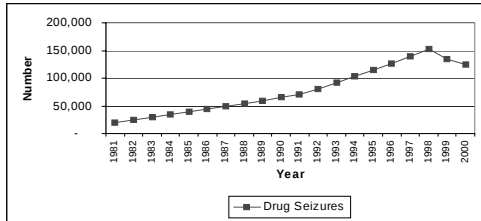
Drinking Trends

q Females: Drinking (1992-2002)



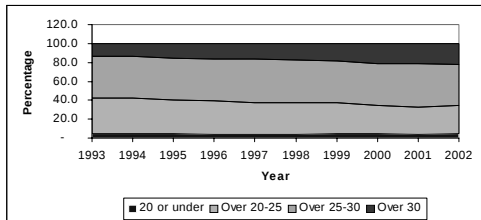
Drugs

Seizures of selected drugs (1981-2000)



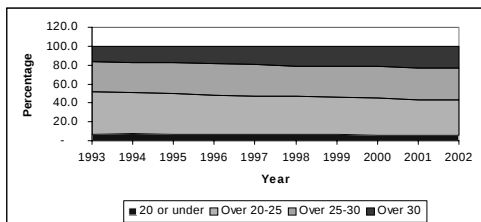
Obesity

Males: BMI (1993 to 2002)



Obesity

Females: BMI (1993 to 2002)



Exercise

q Exercise (1987 to 2002)

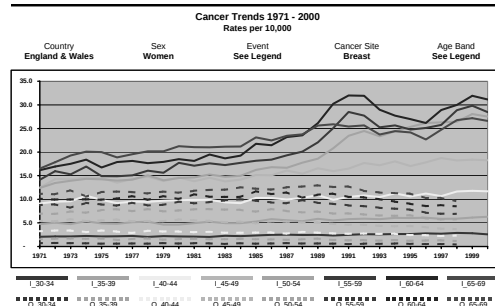


THE PAST – Population Mortality (1979-2000) – Possible Reasons

- q Data
- q Lifestyle
 - q Smoking
 - q Drinking
 - q Drugs
 - q Obesity
 - q Exercise
- q Treatment
 - q Screening
 - q Improved Surgical Techniques

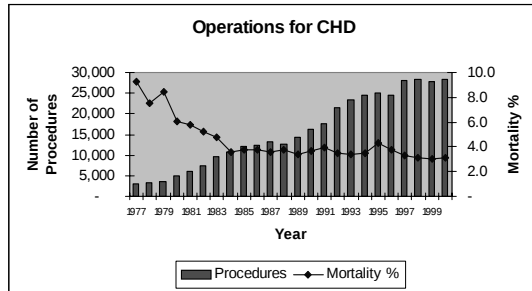
Breast Cancer Screening Actual Outcome, 1971 to 2000

Trend in breast cancer registrations, by age group



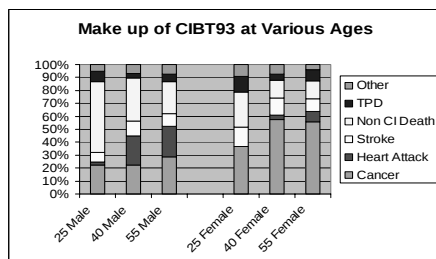
Operations for CHD 1977 to 2001, United Kingdom

Number of Procedures and Mortality Rates

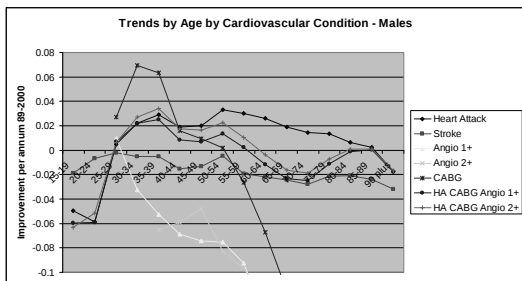


RECENT TRENDS IN CI INCIDENCE BY CAUSE

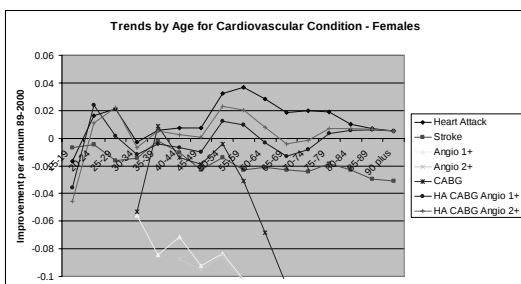
Critical Illness Product



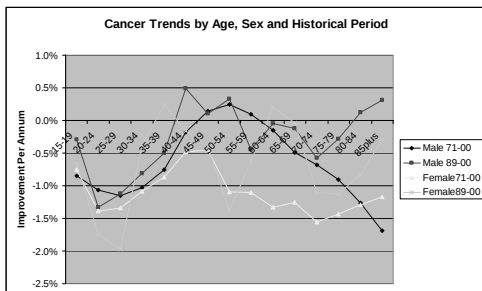
Cardiovascular trends - males



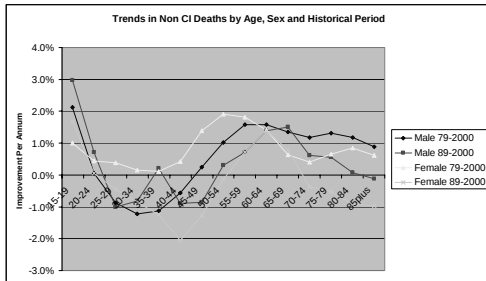
Cardiovascular trends - females



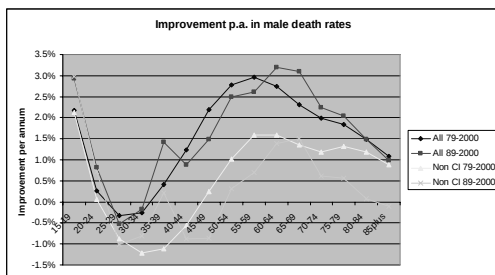
Cancer trends



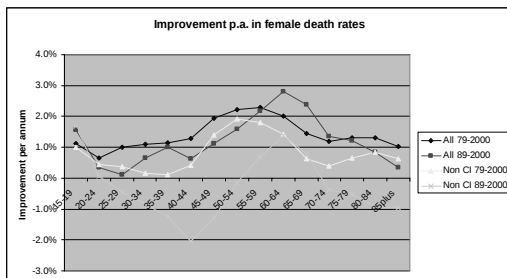
Non CI death trends



Comparison of Trends in All and in Non CI Deaths



Comparison of Trends in All and in Non CI Deaths



EFFECTIVE UNDERWRITING

Conclusions

- q Causes of Mortality are different at different ages
- q Trends in Mortality are different at different ages
- q Therefore underwriting should do different things at different ages

Underwriting – Major Causes of Death

- q Older Ages
 - q Cancer
 - q Heart Attack
 - q Other Medical Causes
- q Young Age
 - q Accidents
 - q Lifestyle
 - q Cancer

Underwriting

- q Underwrite
 - q Ask the right questions
 - q Do the right medical testing
 - q Put in the appropriate warnings
- q First things first
 - q Smoking
 - q BMI
- q Verify this information
 - q And then get other information and use it – (preferred life!)
 - q Or get the client to provide it

Underwriting young ages

- q Next underwrite accident risk directly
 - q Driving record
 - q STD
 - q Alcohol
 - q Drug Abuse
 - q Hazardous pursuits
- q Obtaining and Verifying Information
 - q Parameds
 - q Tele-underwriting
 - q Cost – not as much as you might think
 - q Marketing Disadvantage – new method can be made a virtue

The Future

- q It will happen
 - q Someone will use this as the next step down in price
 - q All other portfolios will suffer
- q Will you lead or will you follow?
