

Pricing Dread Disease Insurance

Edward Fabrizio and Warren Gratton 1994

Report presented to Institute of Actuaries of Australia meeting

Twenty years ago when life insurance agents roamed, it was probably impossible to not have had a conversation about protecting plans for you and your family in the event of illness or death. After major industry re-regulation and the shift in focus to unbundled investments there are now few insurance specialists left and these important conversations don't happen frequently enough. A multitude of industry studies suggest Australians are un- or under-insured. For example, less than 10% spend the about 1-2% of their annual income to protect it in the event of illness. Most peoples' level of death and permanent disability insurance cover are set by automatic formulae within super funds which generally underestimate needs and would only by coincidence match requirements.

Actuaries Fabrizio and Gratton researched the incidence of various types of traumatic (otherwise called critical illness or dread disease) and death-from-all-causes. They compiled tables which were used by insurers to price risk, ie. set premiums in response to the probability of occurrence. Over any one year period the incidence rates are small but when viewed over a longer term, eg. to age 55 or for 10 years, cumulative incident rates may surprise you. This type of information is rarely available as it inputs to how insurers compete when pricing premiums. It also needs to be interpreted carefully. Accordingly the following should not be relied upon to estimate personal risk. This study is dated and doesn't capture all types of life risk (incl. non-critical illnesses such as stress, chronic fatigue, back injury). Ironically one of the authors reportedly later passed away in an encounter with a hippopotamus on an African safari. These statistics would not have allowed for that.

The information that follows is a reminder that life doesn't always go to plan and you should periodically (and professionally) revisit your insurance needs and arrangements. Please take care.

Death and critical illness incidence (number pa at age per 10,000*)

Female

Condition \ Age	25	35	45	55	65
Death	42	60	123	340	891
Cancer	31	97	276	555	853
Heart attack	2	9	62	168	363
Stroke	8	15	50	109	252
Alzheimer's	0	1	4	21	118
Other dementia	0	1	4	21	118
Angioplasty	0	2	12	49	105
Bypass surgery	0	0	5	31	97
Other**	47	51	76	148	304

Male

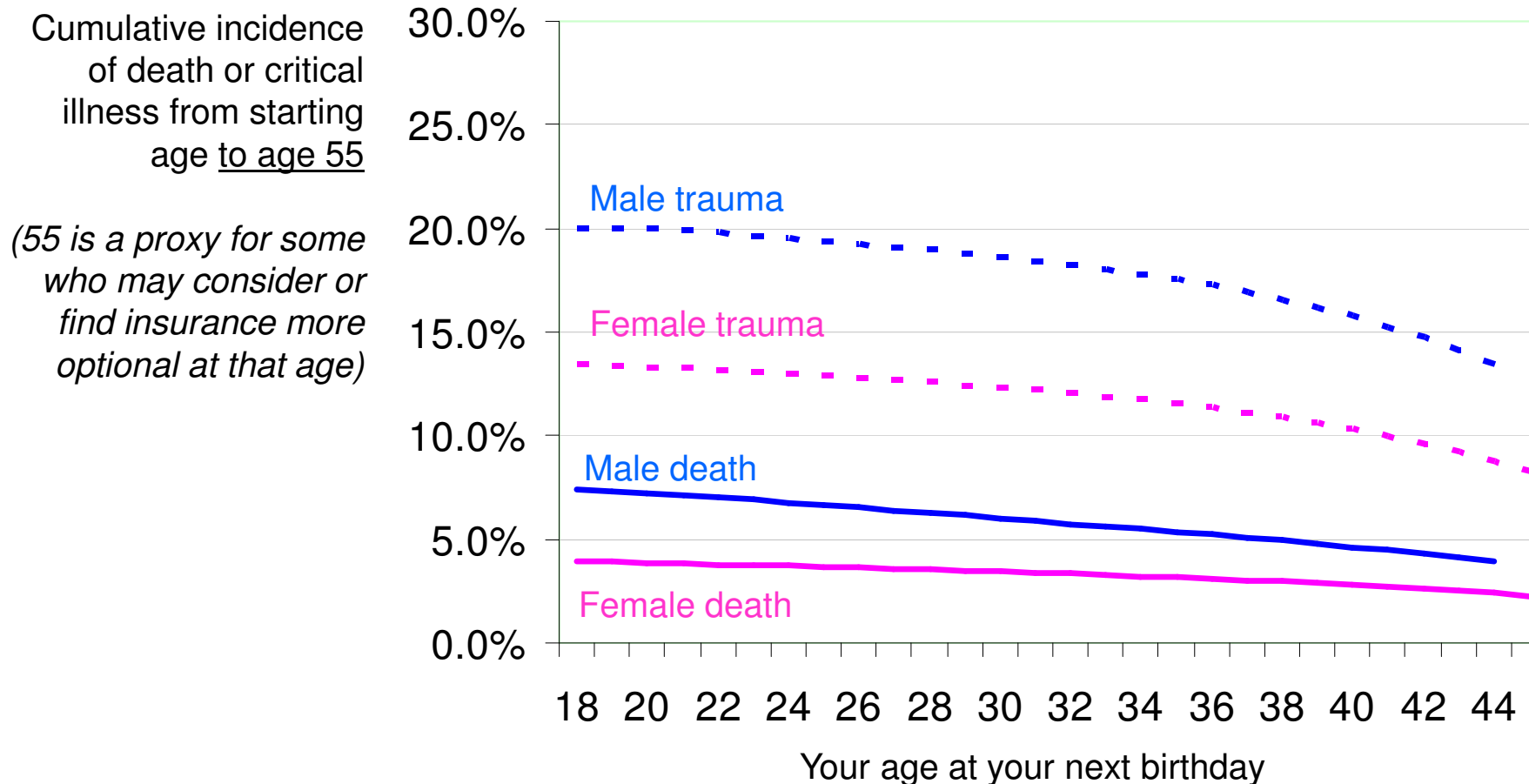
	25	35	45	55	65
Death	122	134	215	556	1,730
Cancer	35	67	144	505	1,420
Heart attack	4	45	241	490	844
Stroke	10	25	66	146	441
Bypass surgery	0	5	42	169	343
Angioplasty	1	13	66	176	252
Lung failure	3	4	6	33	152
Alzheimer's	0	1	4	21	118
Other dementia	0	1	4	21	118
Other**	90	101	134	294	461

*Ordered by decreasing frequency at age 65 for each sex to 100 / 10,000 (or 1% for that age). By way of reference, a large sporting stadium may hold from 50,000 to 100,000 (ie. multiply above by 5-10x to consider that way). Age is age at next birthday.

**Other includes (in order of decreasing likelihood at age 55 for a female, incidence / 10,000) is blindness 30, lung failure 25, Parkinson's disease 24, deafness 23, valve & aorta 20, cardiomyopathy 18, kidney 15, liver failure 8, multiple sclerosis 6, head trauma 5, motor neurone 5, paralysis 4 and (1 or less / 10,000) burns, organ failure, pulmonary hypertension, aplastic anaemia, coma, occupational acquired HIV, speech loss, loss of limbs, encephalitis

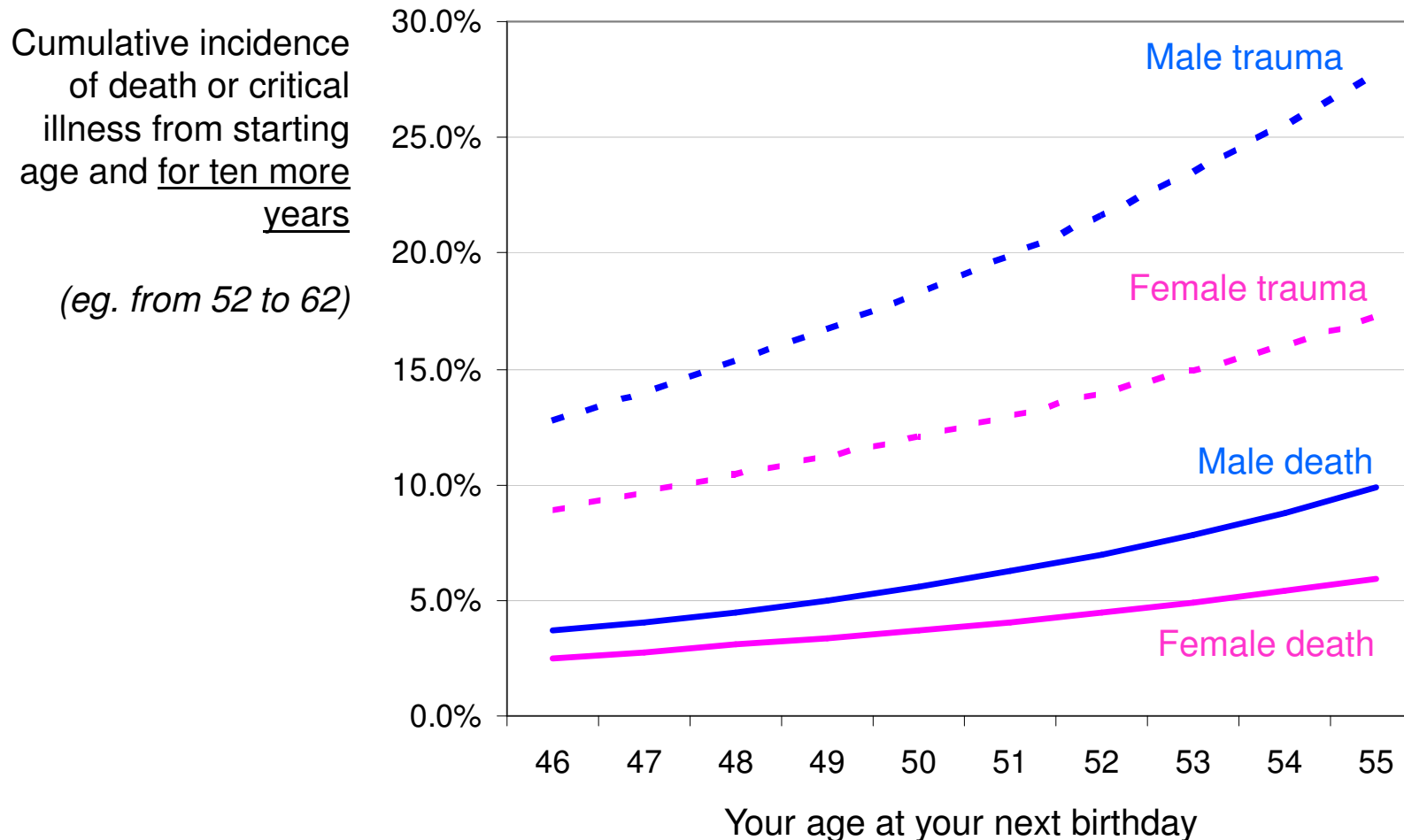
Individuals pay proportionally for the probability of loss plus a margin for insurers' costs and profit. Your decision about insurance should not be driven by expected incidence. Lower incidence for younger individuals or conditions means lower premium rates are charged.

So what are your chances? - if you are under 45



Note: This was calculated by totalling the age based incidence of death or trauma between the starting age (x axis) and age 55. It may be a rough approximation of the chance of reaching age 55 without incident (eg. male 40 to age 55, 5% death, 16% trauma). However for many reasons it is inaccurate and should not be relied upon (eg. changes in incidence since publication, no adjustment for those who have passed away, reoccurrence by same individual, does not allow for non-trauma disabling conditions like back injury). Note incident rates generally rise with age, however, the number of years to fixed age 55 declines, which explains the decline with starting age).

So what are your chances? - if you are 45 or older



Note: This was calculated by totalling the age based incidence of death or trauma between the starting age (x axis) and for ten years thereafter. It may be a rough approximation of the chance of living for ten years without incident (eg. female 48 to age 58, 4% death, 11% trauma). However for many reasons it is inaccurate and should not be relied upon (eg. changes in incidence since publication, no adjustment for those who have passed away, reoccurrence by same individual, does not allow for non-trauma disabling conditions like back injury). Curve rises with age as incidence rate rises.

Some other more recent statistics

Women

1 in 4 suffer a critical illness between 30 and 64¹

1 in 4 contract cancer by age 75²

1 in 11 will develop breast cancer³

1 in 3 chance of coronary heart disease for a 40 yr old “in the future”⁴

Men

2 in 5 chance of suffering a critical illness between 30 and 64¹

1 in 3 will contract cancer before age 75²

1 in 2 chance of coronary heart disease for a 40 yr old “in the future”⁴

1 in 4 over age 45 at risk of having a stroke⁵

(1) IFSA 2005,

(2) Australian inst. Of Health and Welfare, Australia's Health 2004

(3) Cancer Council NSW 2003

(4) AIHW- Heart, Stroke and Vascular Diseases 2004

(5) National Heart Foundation website 2005

All from Zurich Australia 2007 “Behind every statistic is a real person”

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