

# Is there evidence of a 'cured' sub-population amongst women with screen-detected breast cancer?

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*Results from New South Wales, Australia, and the West Midlands region of England*



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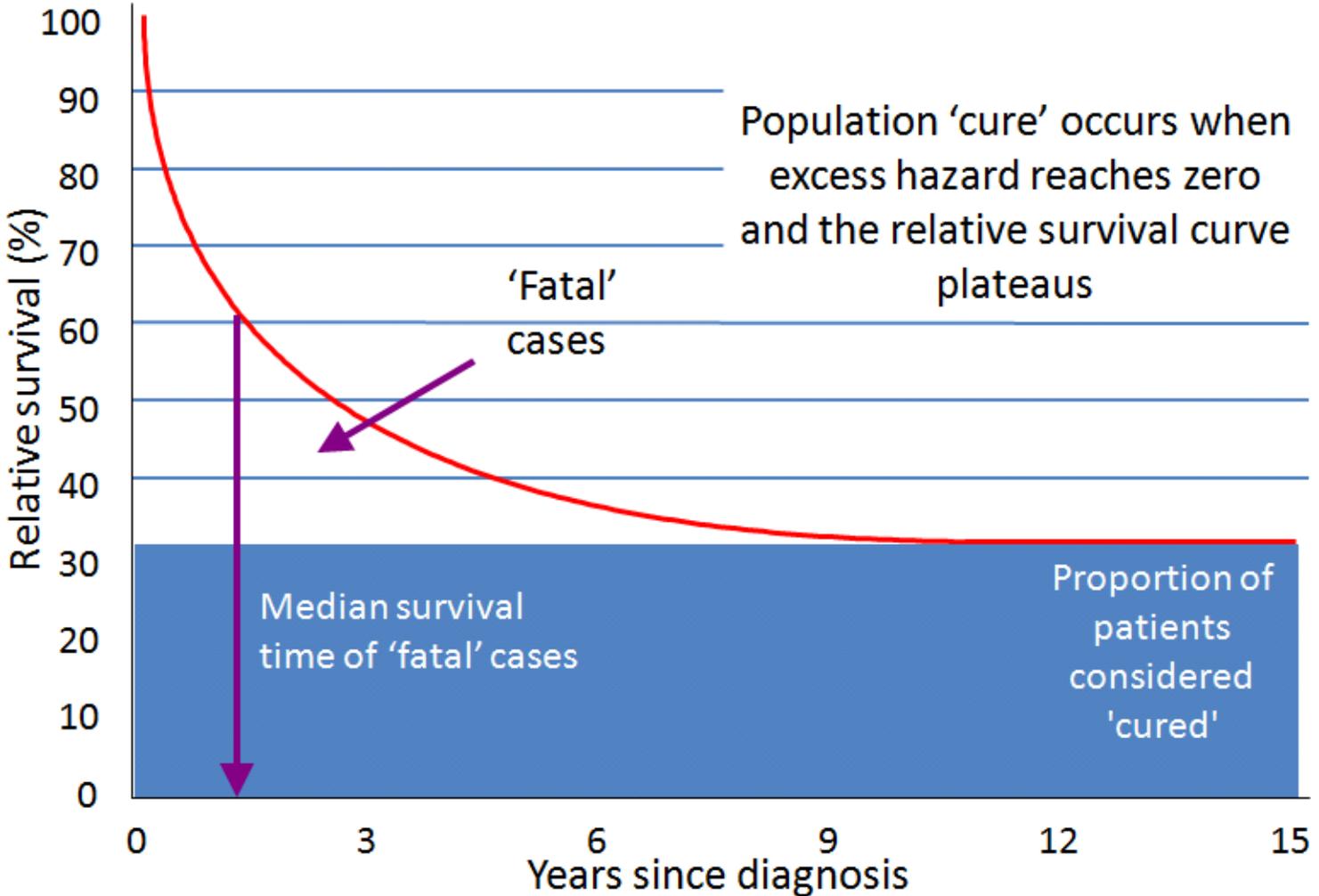
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West Midlands  
Cancer Intelligence Unit

# Concept



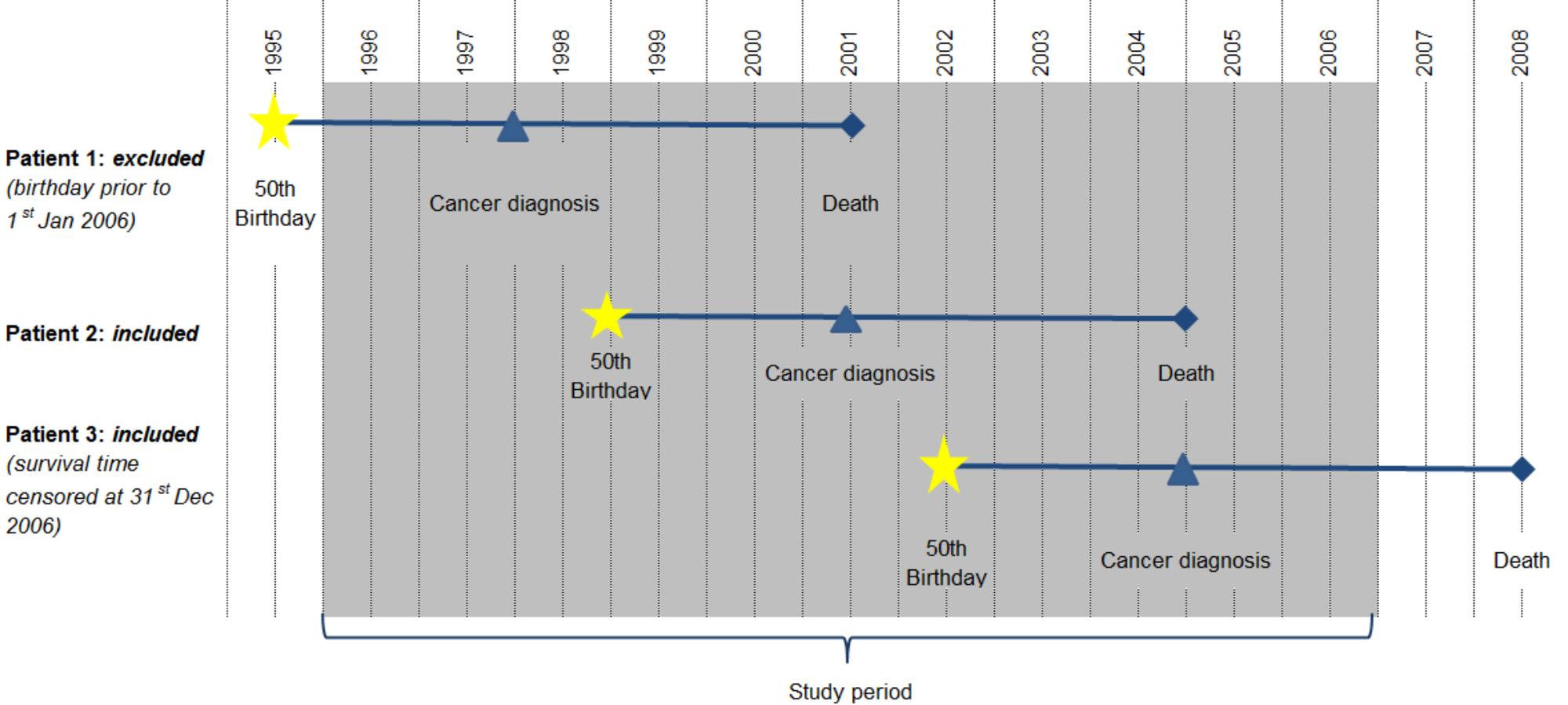
# Background

- Long-term excess mortality from breast cancer
- Our previous work:
  - Women with apparently localised disease
  - ‘Cure’ seldom attained
  - Inflexible approach?
- Statistical developments: flexible models
- ‘Cure’ and breast cancer screening

# Hypothesis

That a sub-population of women diagnosed with asymptomatic disease via screening have no excess mortality, in comparison to their counterparts, and that the presence of this 'cured' population could be detected using a flexible modelling approach.

# Cohort included in analyses



# Materials and Methods

- 6,396 women in New South Wales,
- 5,717 women in West Midlands
- Non-parametric flexible (spline-based) relative survival model, adjusted for age:
  - 'cure' option assumes zero excess mortality after the last knot
- Reduction of 3 AIC to indicate better fitting model

# Results

| Region | Screening category  | AIC non-'cure' model | AIC 'cure' model | Difference | Evidence of cure? |
|--------|---------------------|----------------------|------------------|------------|-------------------|
| NSW    | Not screen-detected | 3054.63              | 3067.33          | 12.70      | No                |
| NSW    | Screen-detected     | 774.97               | 775.01           | 0.05       | Yes               |
| NSW    | Lapsed attender     | 155.32               | 156.69           | 1.36       | Yes               |
| NSW    | Interval cancer     | 664.74               | 663.57           | -1.18      | Yes               |
| WM     | Not screen-detected | 2490.48              | 2510.85          | 20.38      | No                |
| WM     | Screen-detected     | 1138.46              | 1136.54          | -1.92      | Yes               |
| WM     | Lapsed attender     | 164.31               | *                | -          | -                 |
| WM     | Interval cancer     | 1555.11              | 1556.55          | 1.44       | Yes               |

# Conclusions

- Evidence of 'cure' for screen-detected women

## Next steps

- Examination by stage of diagnosis for the non-screened (missing values)

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