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# The IFoA Conference 2022

22–23 June – etc.venues, 133 Houndsditch, London



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# IMPAIRED LIVES INSURABILITY

A Brave New World

# Agenda

- Explore the nature of longevity improvements
- History and milestones of longevity improvements
- Implications
- Applications
  - Impaired life insurance



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# The Need To Be Addressed



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# Nature of Longevity Improvements: Traditional view

- By cause of death
- By age ranges at which improvements take place



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# Nature of Longevity Improvements: Alternative view

- Analyse improvements into two parts
  - Changes in disease-specific incidence rates
  - Changes in survival rates of those afflicted by these diseases



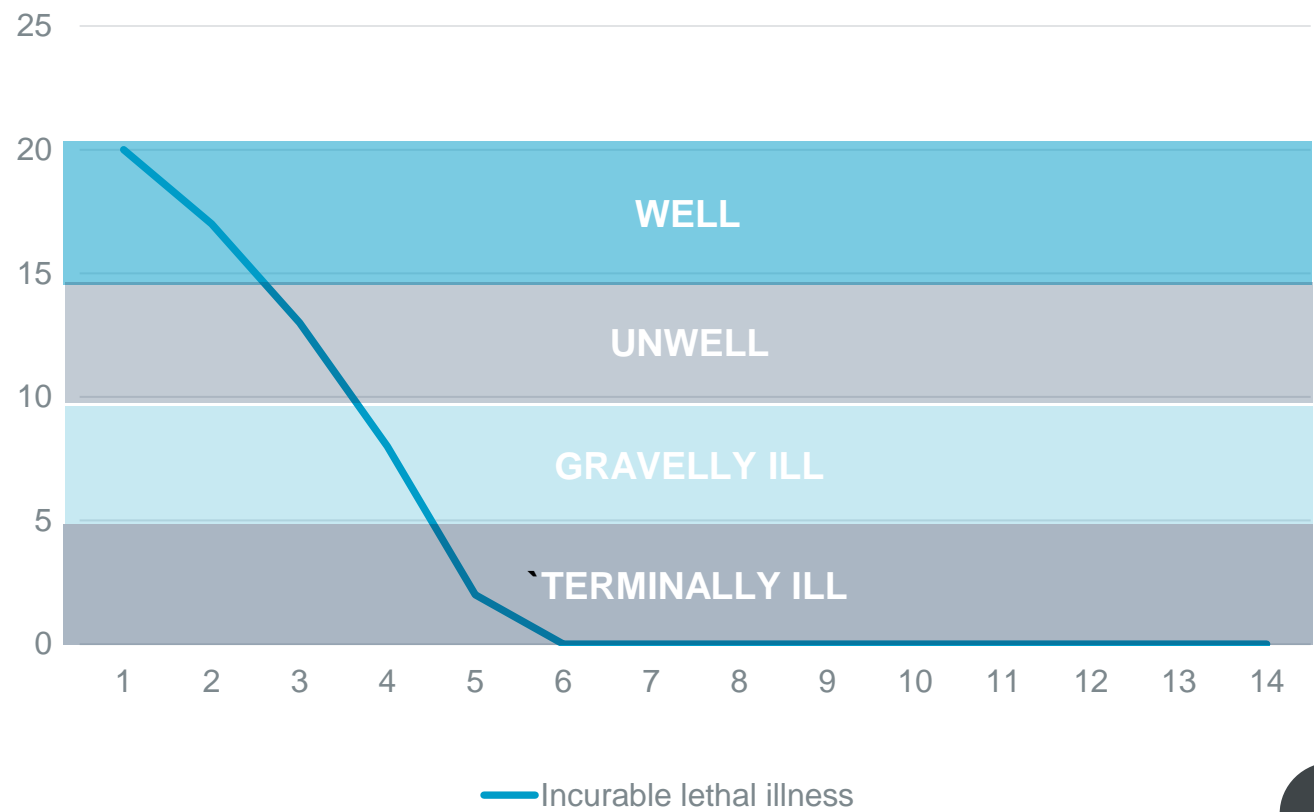
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# Lifecycle of morbidity

## Progression of illness



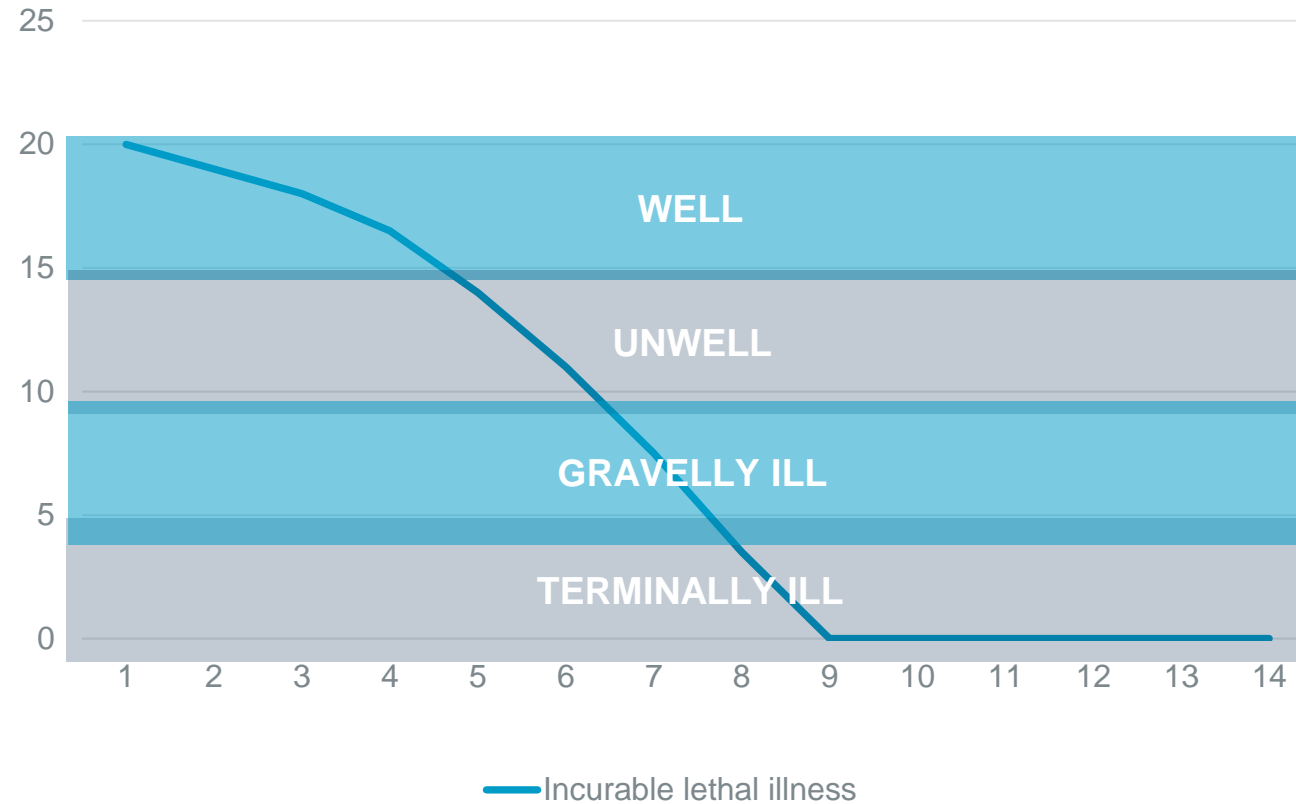
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# Lifecycle of morbidity

## Progression of illness

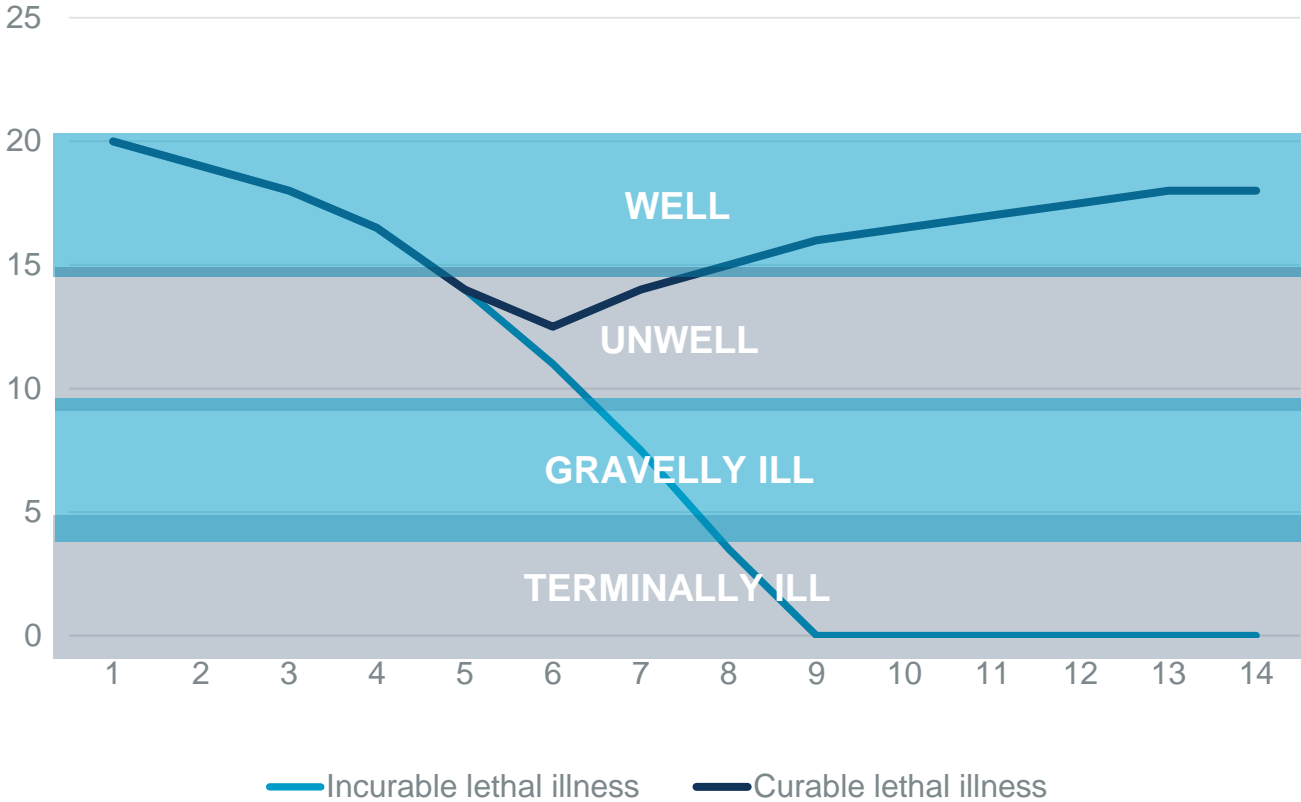


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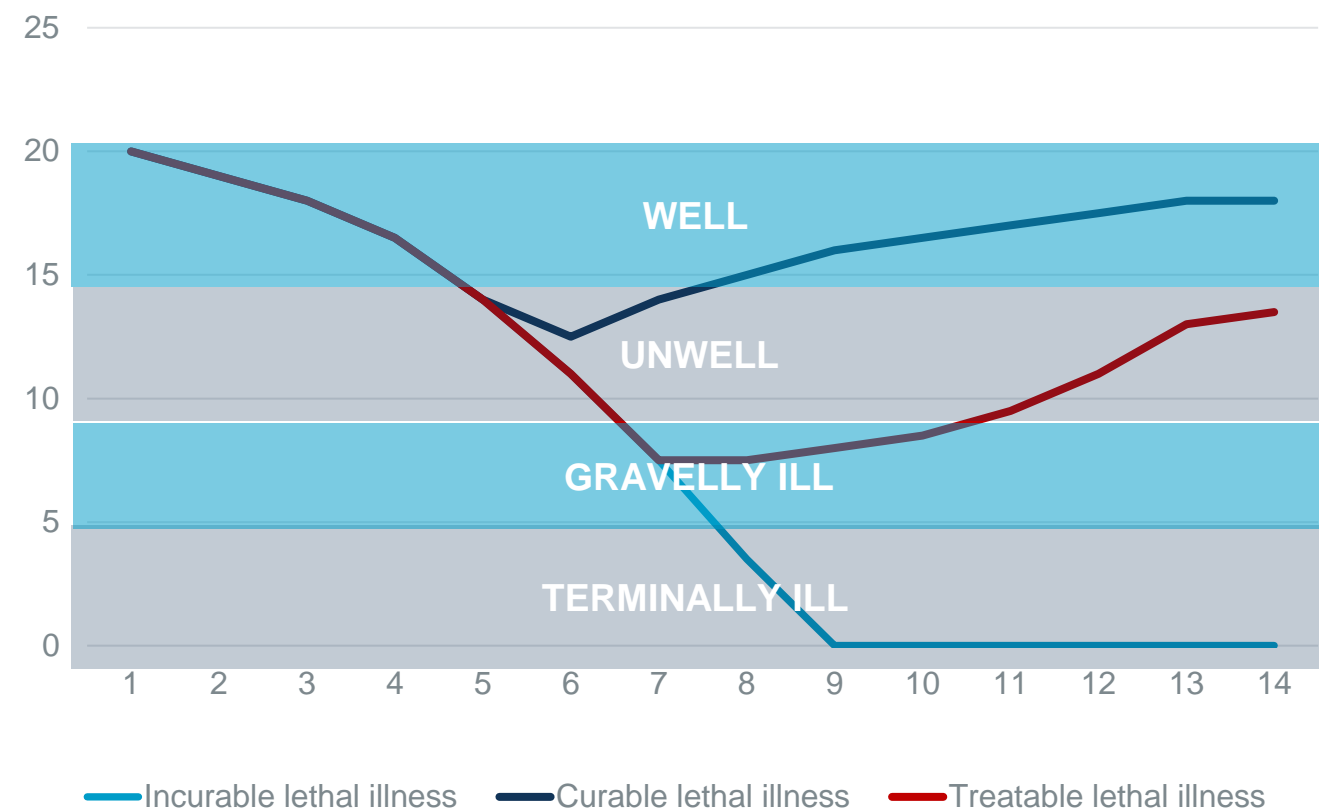
# Lifecycle of morbidity

## Progression of illness



# Lifecycle of morbidity

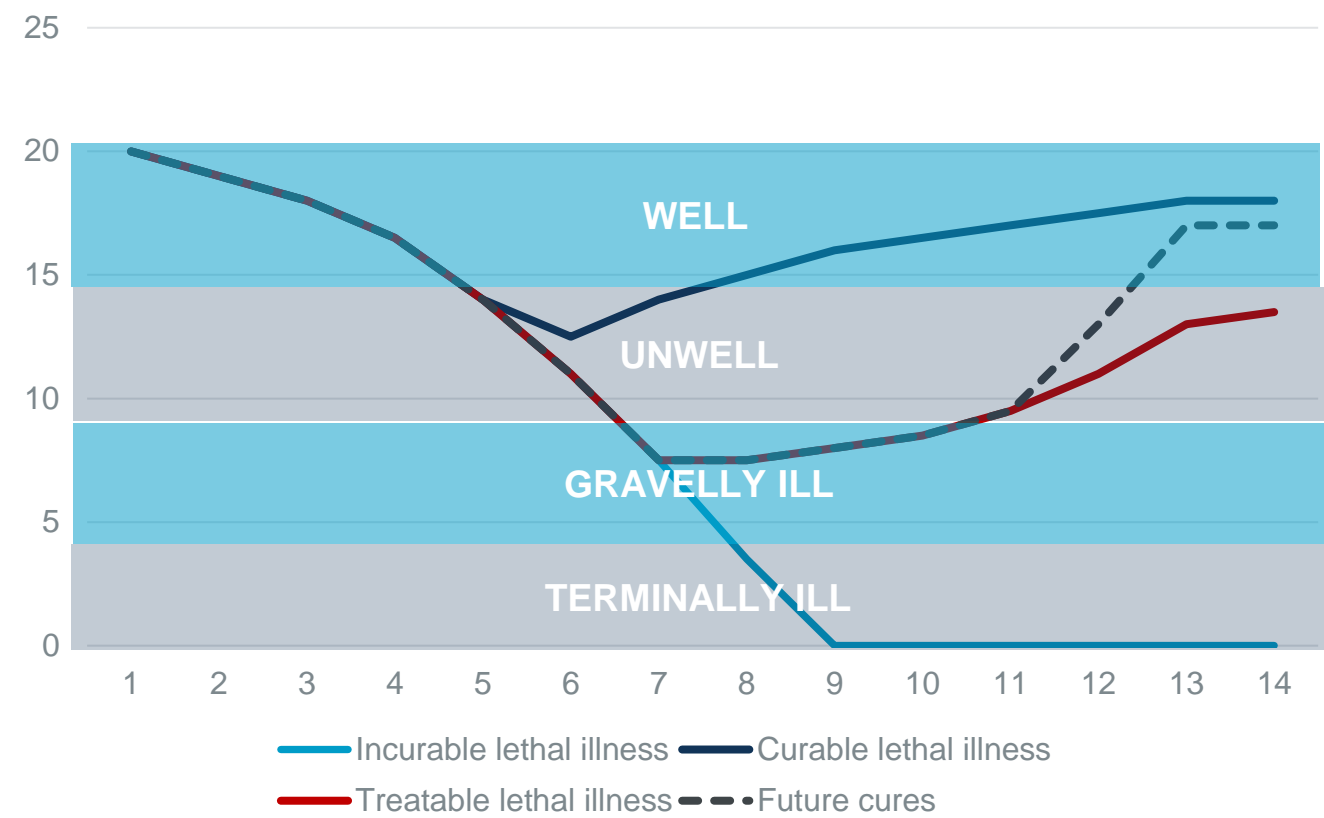
## Progression of illness



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# Lifecycle of morbidity

## Progression of illness



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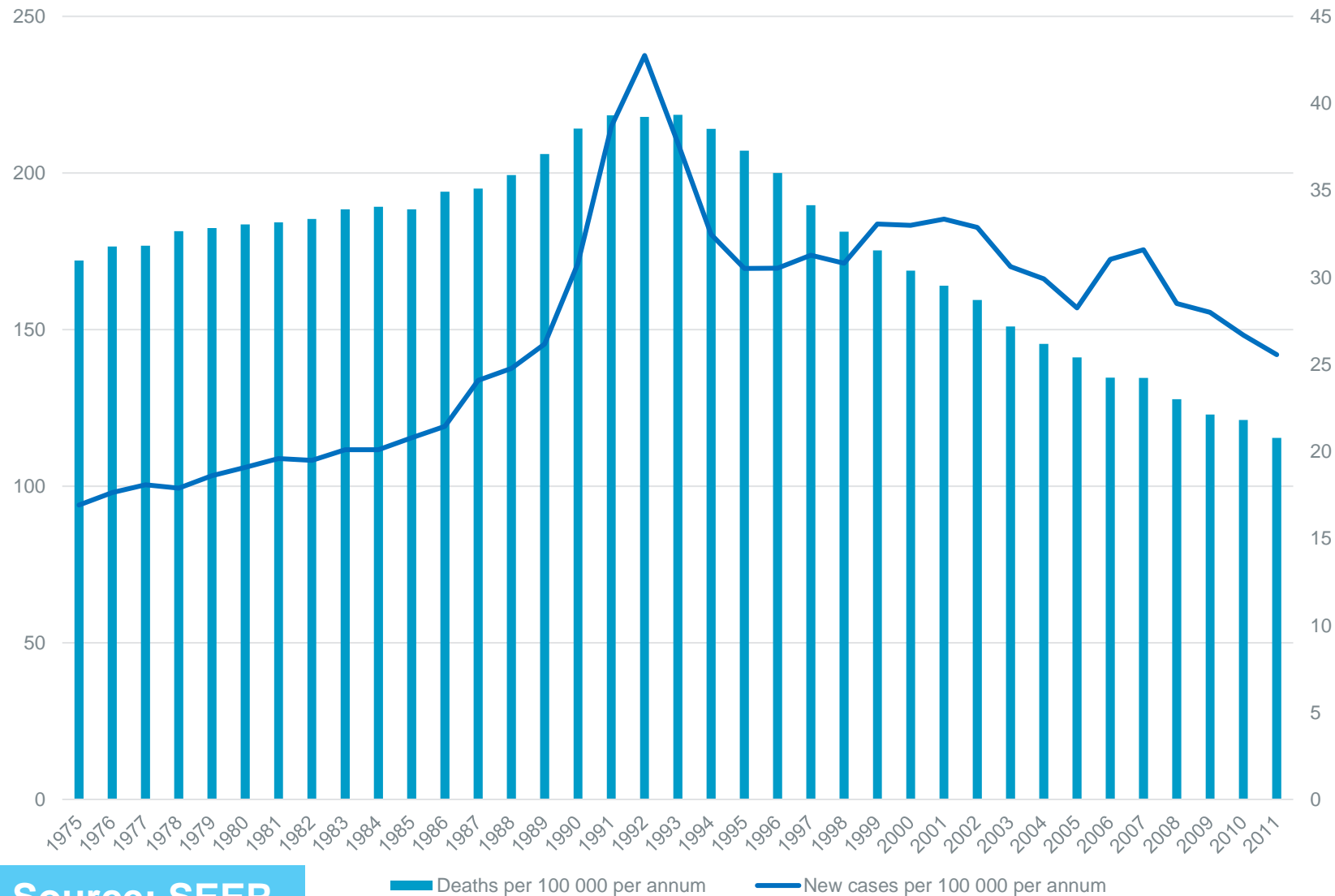
# Examples of Illnesses

- Prostate Cancer
- Breast Cancer



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# Prostate Cancer

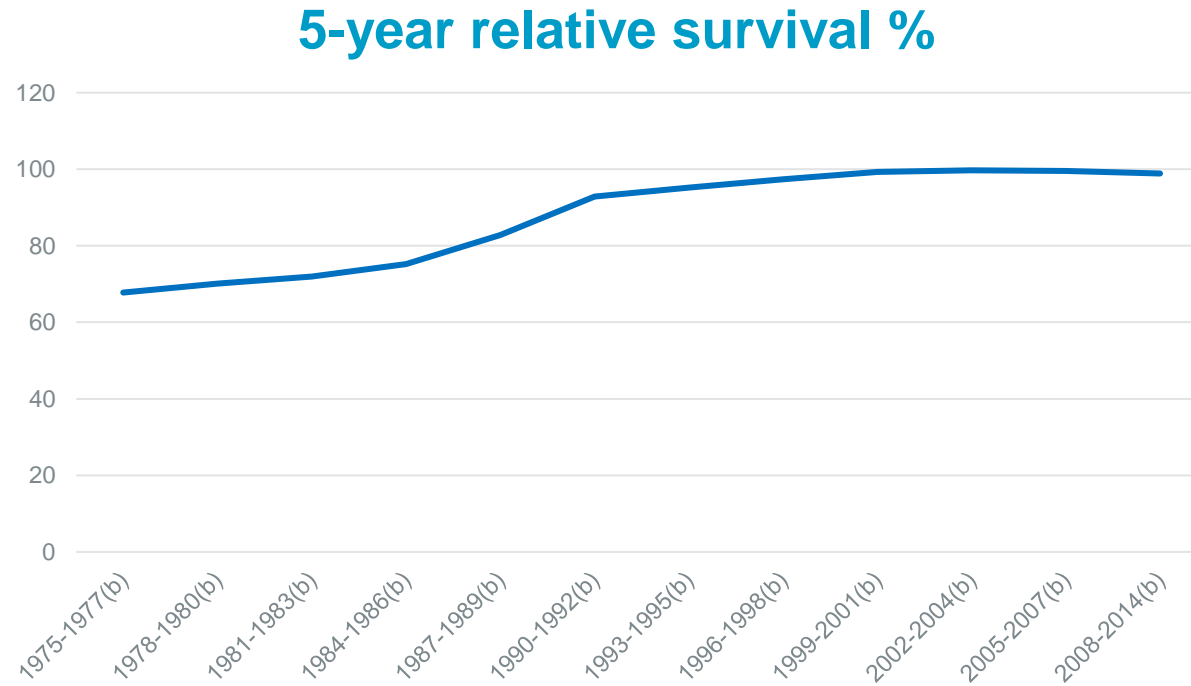


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# Prostate Cancer

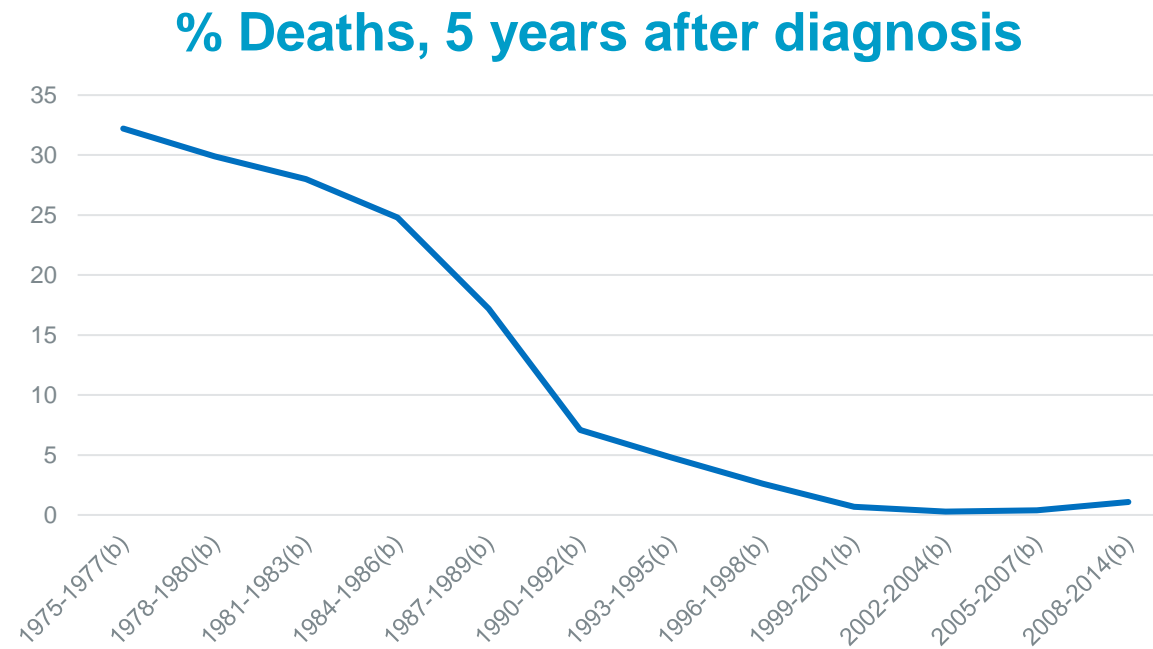


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# Prostate Cancer

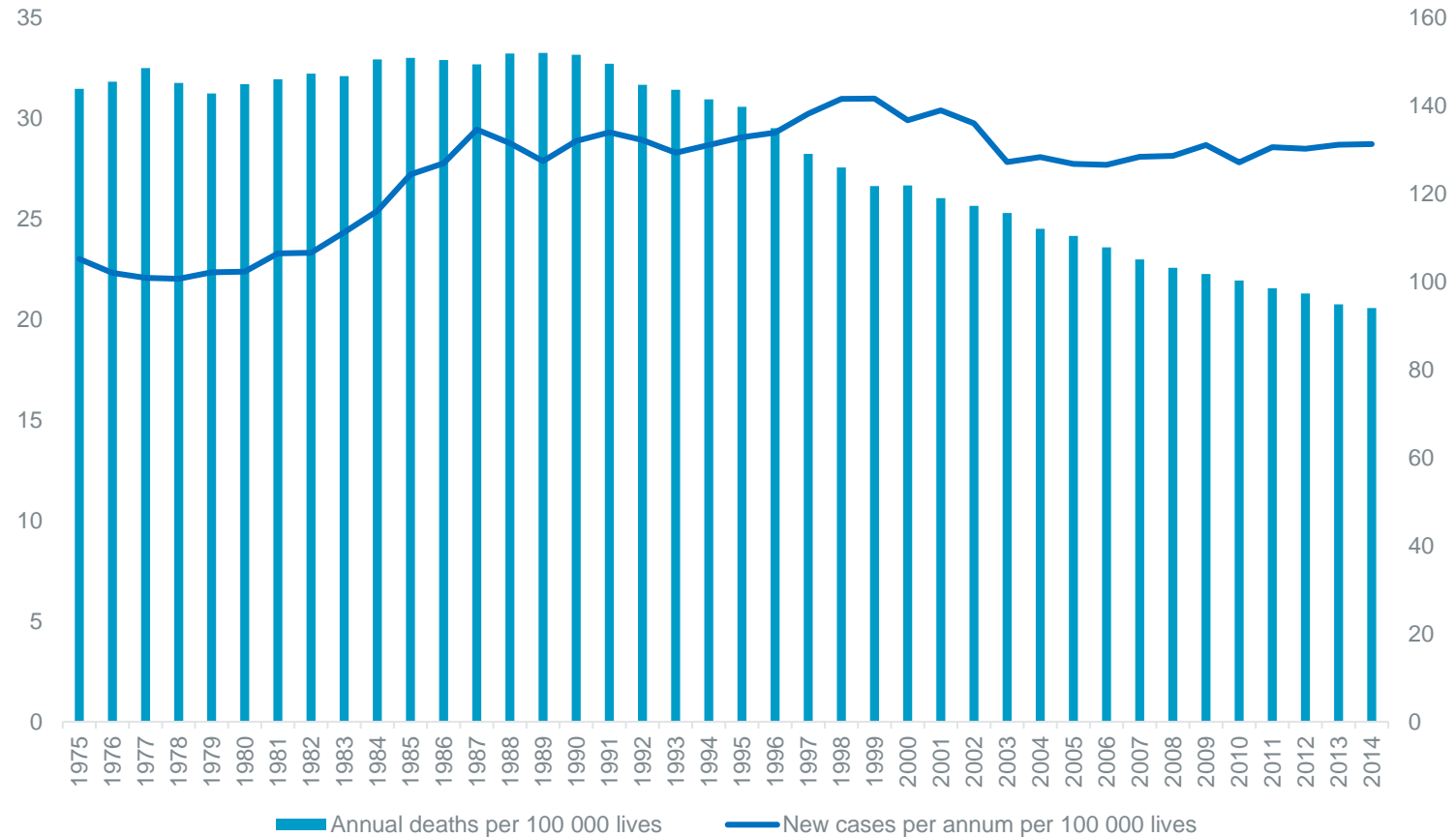


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# Breast Cancer



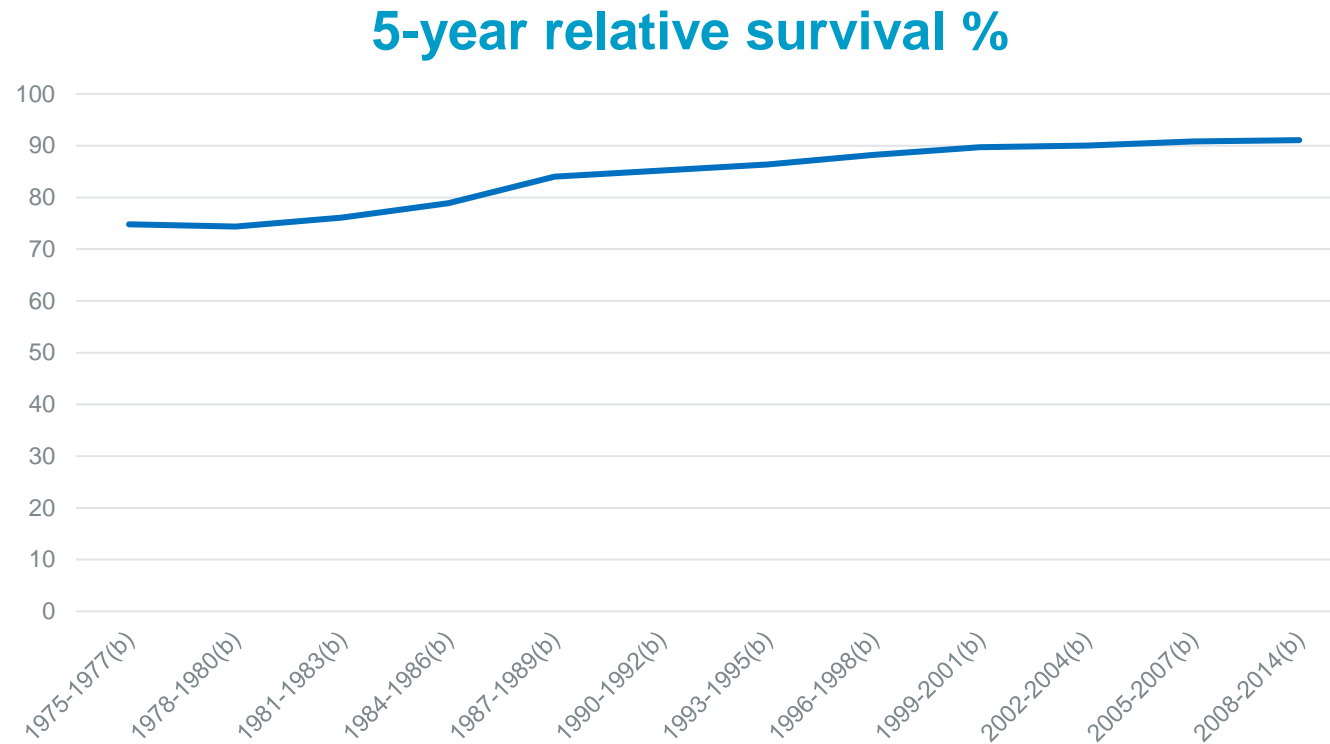
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# Breast Cancer

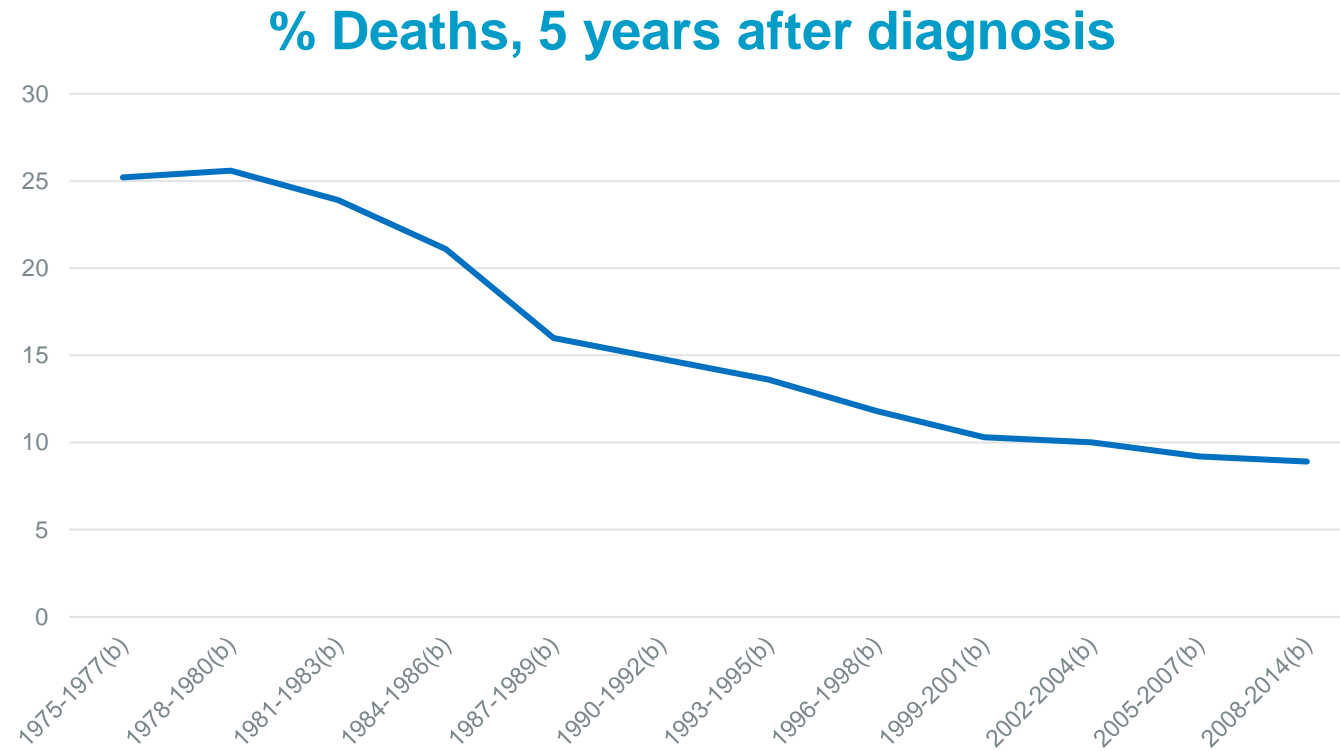


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# Breast Cancer



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# Implications & Applications



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# Financial Toxicity

- Prohibitive cost of cancer treatment due to
  - Substantial increase in treatment cost per case AND
  - Increase in proportion of population with cancer
- Biologics can easily cost over \$400 000 per course
- Even 3rd party payers (Insurers, Governments) are now  
passing on an increasing share of burden back to patients
- Result is financial toxicity



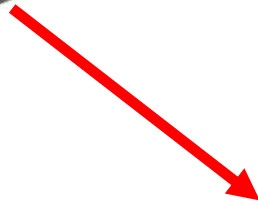
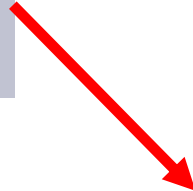
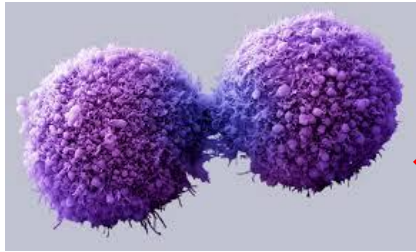
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# Cancer Treatment Financing



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# The Need



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# Swap Instrument

- Changes nature of treatment payment obligation
- From liability for treatment to liability for successful treatment
- Basic measure of success is survival



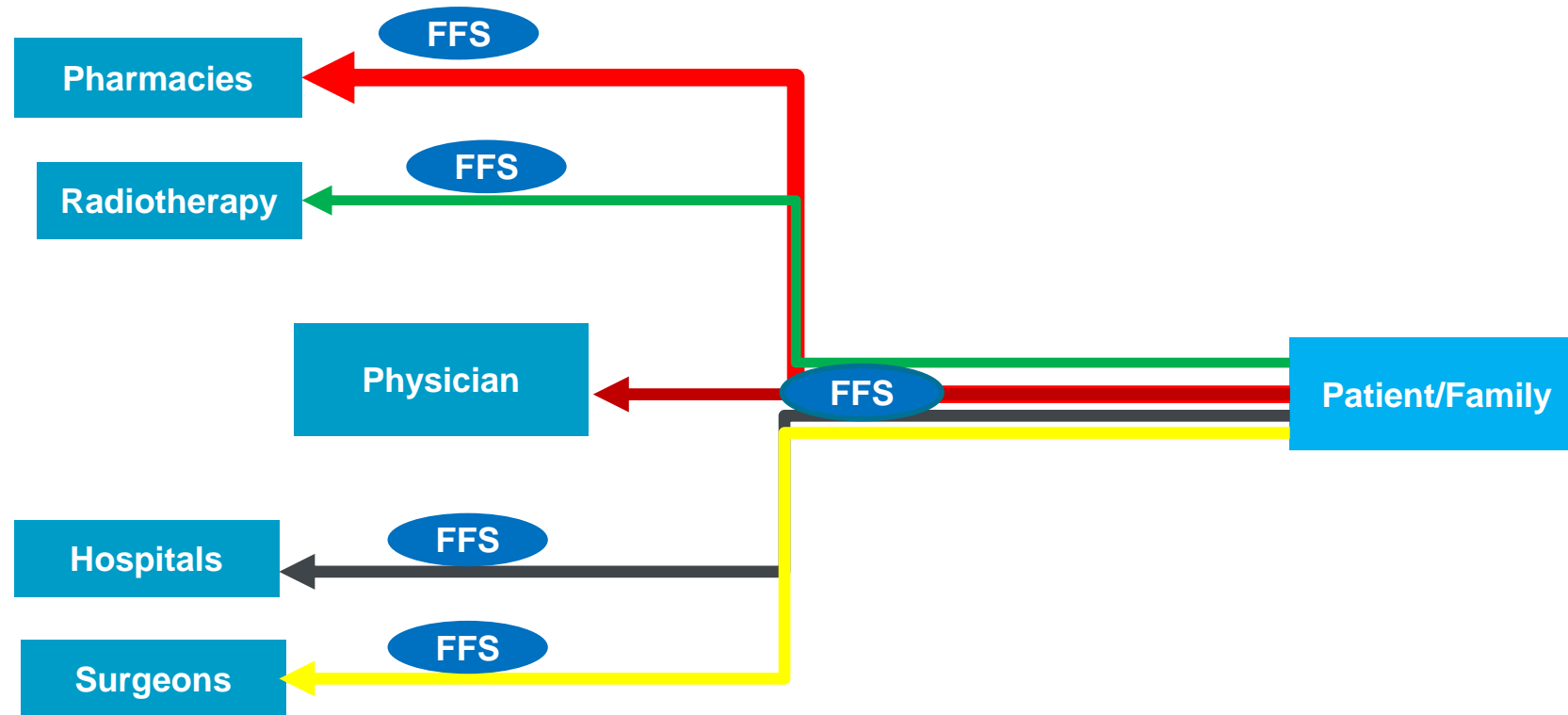
# Swap Instrument

- Other measures can be used as well (Remission, metastasis, relapse )



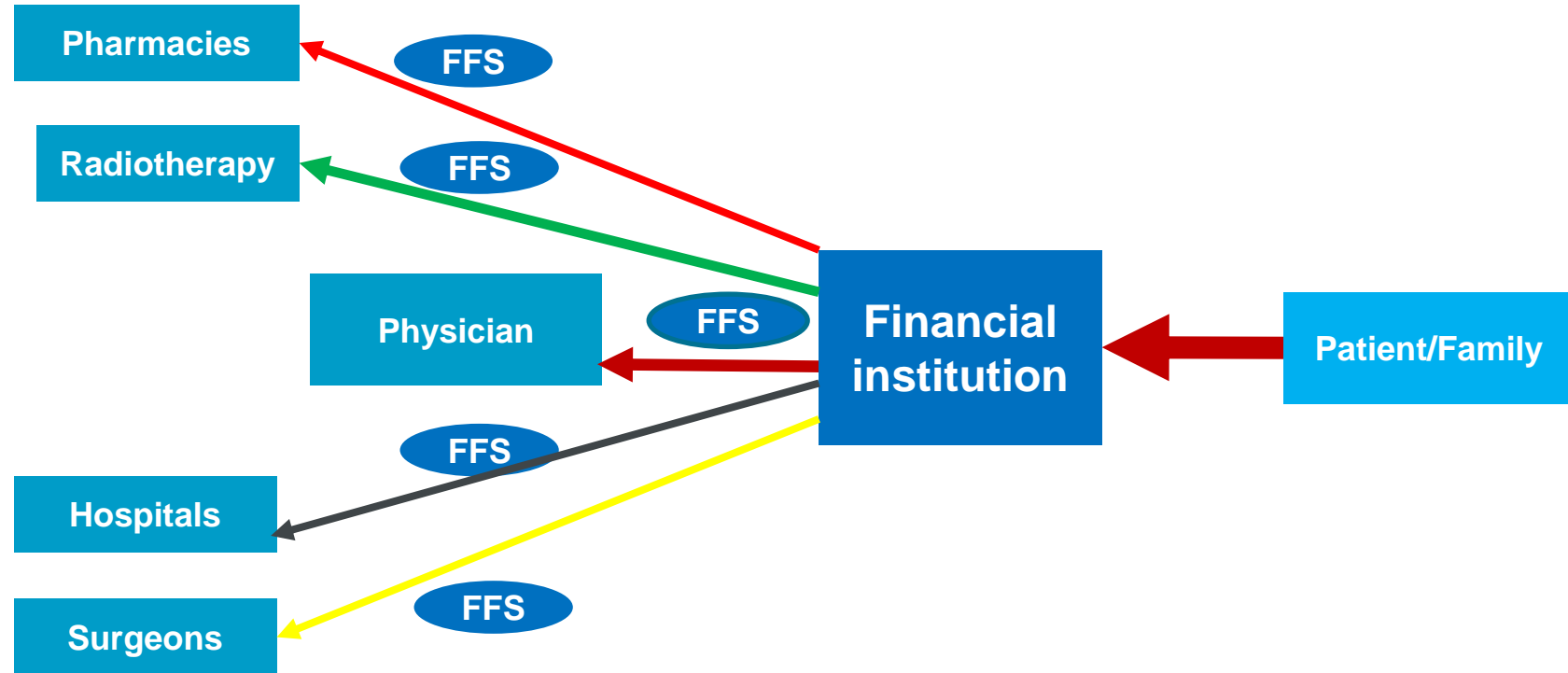


# Traditional Money Flows



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# Swap Money Flows



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# Why Now?



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# Insurable Risks

- Susceptibility to anti-selection:
  - Information asymmetry no longer so stark. Objective clinical measures of severity of malignancy
- Uncertainty of prognosis
  - Rich databases of cancer morbidity and mortality also now available



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# Insurable Risks

- Unacceptably high loss likelihood
  - Much higher survival rates
- Inconsequential financial losses
  - Modern treatment costs high-Losses now substantial



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# Parental Support Insurance



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# Parental Support

- Longevity primarily responsible for pensions crisis
- Compounded by shift from DB to DC
- Responsibility for pensioner support falling back to adult children (often middle aged themselves)
- Cost of support exacerbated by soaring medical costs



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# Parental Support

- This gives rise to an insurable interest for middle aged people with elderly parents
- Risk they pre-decease parents
- This risk can be mitigated by life insurance.



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# Questions

# Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

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



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