

Chained time trade off and  
standard gamble methods:  
applications in oesophageal  
cancer

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# Oesophageal Cancer

- Increasing incidence of adenocarcinoma
  - 60-70% patients unsuitable for curative resection
- Relief from dysphagia is paramount
  - Wide variety of differing palliative treatments
  - Variety of costs and effects
- Patients have to make choices

# RCT of the cost effectiveness of palliative therapies

- Comparison between metal stents, rigid tubes and non-stenting techniques (eg radiotherapy, laser)
- Multi-centre (Newcastle, Bristol, Winchester, Southampton)
- Study sample 200 patients
- Study period Oct 1998-March 2001

# Aims

- Assess values for inoperable oesophageal cancer in terms of:
  - Health states (outcome)
  - Treatments effects (process)
  - Chained time trade-off and standard gamble techniques

# Study Sample

- Inoperable oesophageal cancer
  - Inappropriate to interview terminal patients
- Representative sample
  - Had curative oesophageal cancer surgery
  - Previously experienced dysphagia
  - Decision making re treatment
  - Stringent inclusion/exclusion criteria

# Respondents

- Criteria were applied to an oesophageal cancer patient database in a single, specialist UK centre

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Clinical records	112
Eligible	71
Non-responders	3
Interviewed	68
Not completed	12
Completed	56

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# Methods

- Randomisation
  - Computer-generated block randomisation
  - Standard gamble or time trade-off method
- Background information
  - Self-completed
    - Demographic
    - Rank current health state using Euroqol EQ-5D
- Valuation exercise
- Interview quality questions

# Methods

- 5 health scenarios
  - Describe symptoms and effect on quality of life
  - Mild to severe
  - Imagine a person living in the health states
  - After 12 months person would die
- Asked to rank from best to worst



# Chaining method

1: Good health vs Ranked 1  
2: Ranked 1 vs Ranked 2  
3: Ranked 2 vs Ranked 3  
4: Ranked 3 vs Ranked 4  
5: Ranked 4 vs Ranked 5

# Health Scenario Card

You find it difficult to eat hard solid foods

You eat less

You have some problems carrying out your usual daily activities

You may have 1 or more of the following symptoms:

Pain

Shortness of breath

Vomiting and regurgitation

# Treatment Scenario

- 3 treatment scenarios
  - Describe effects/success of treatment
  - Describes disruption to lifestyle/QoL
  - After 12 months person would die
- Asked to rank from best to worst

# Treatment Scenario

You have frequent problems carrying out your daily activities (these may include visiting friends /family, housework, leisure activities, going out for meals)

You are about to receive treatment which involves:

1. Making **1** trip to hospital
2. Being **admitted** to hospital for **2 nights**
3. Having **moderate** pain for a **few days** after treatment

After treatment you are less likely to have problems carrying out your usual daily activities

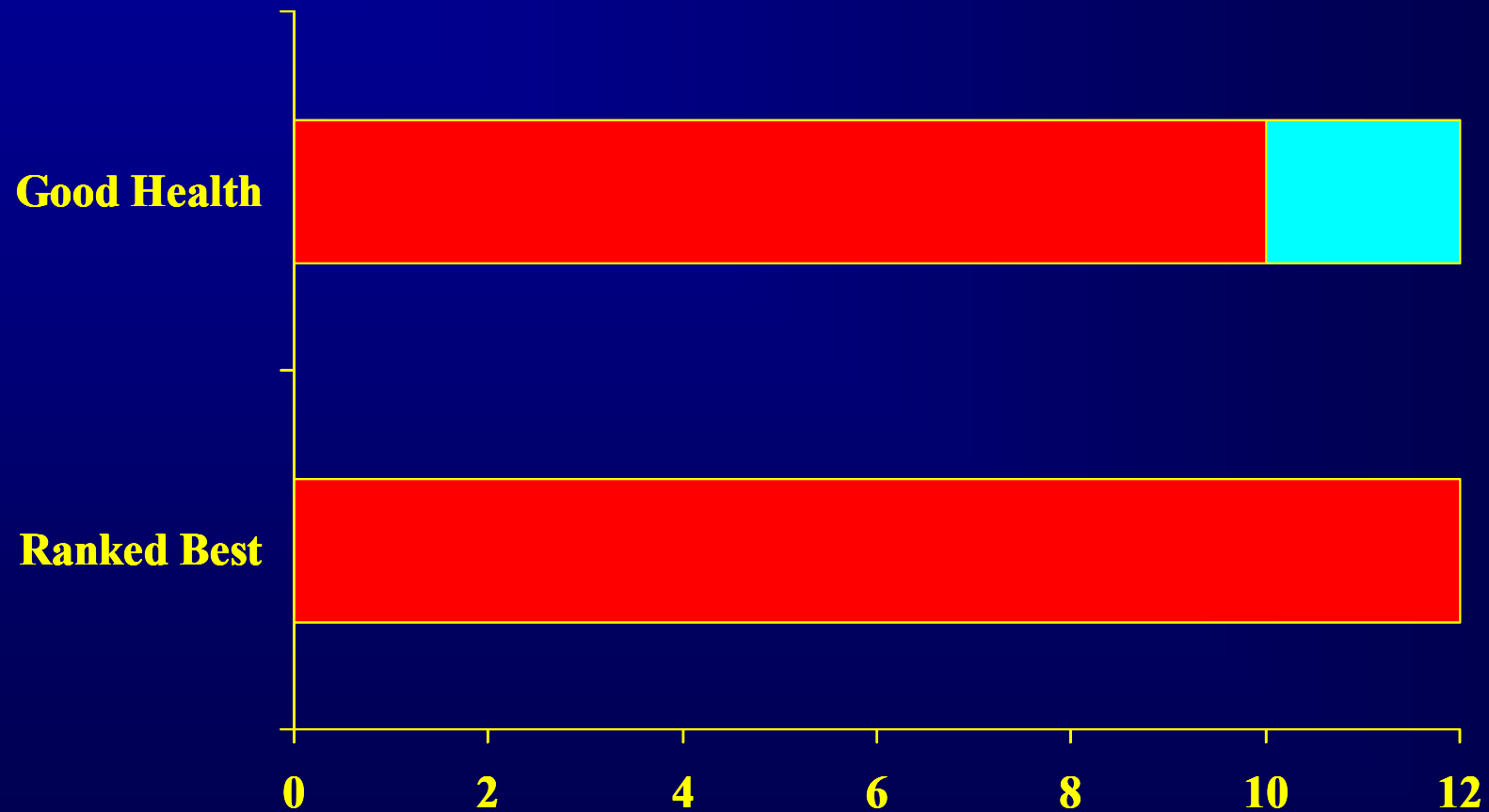
# Time Trade-Off

Time ( $\leq 12$  months) living with  
better quality of life

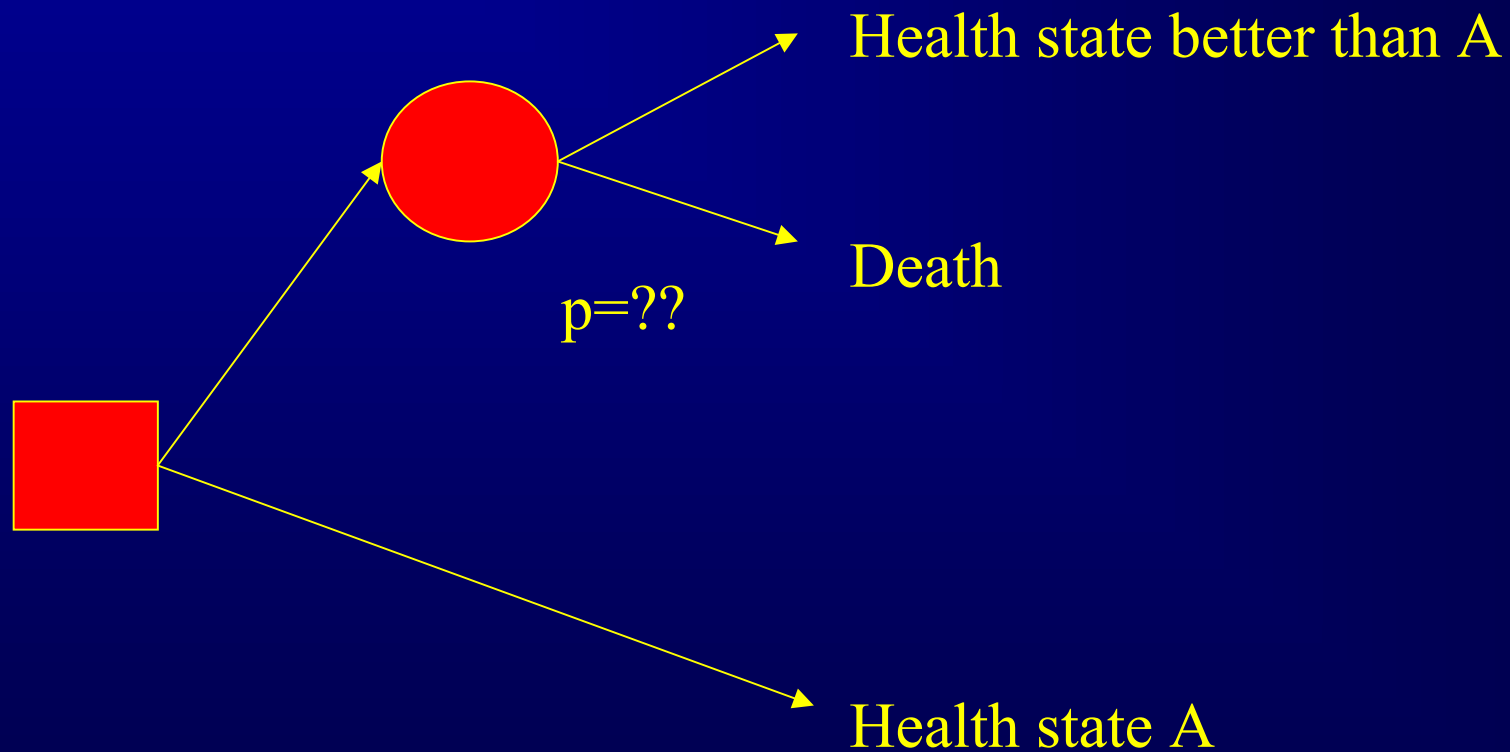
*versus*

12 months living with a worse quality of life

# Time Trade-Off Board

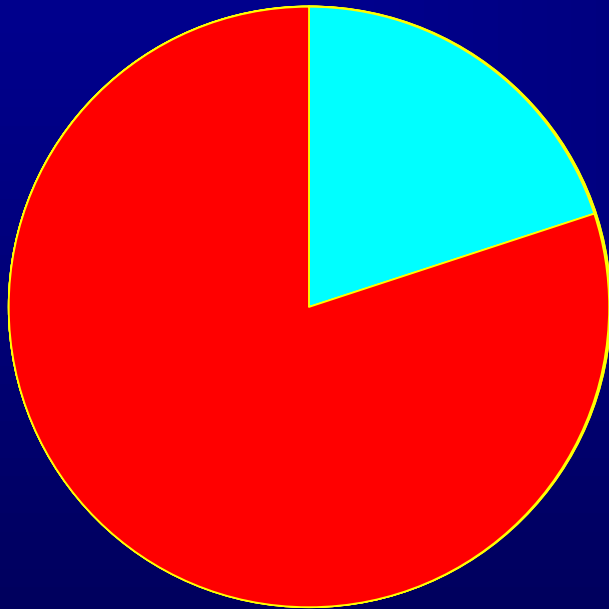


# Standard Gamble



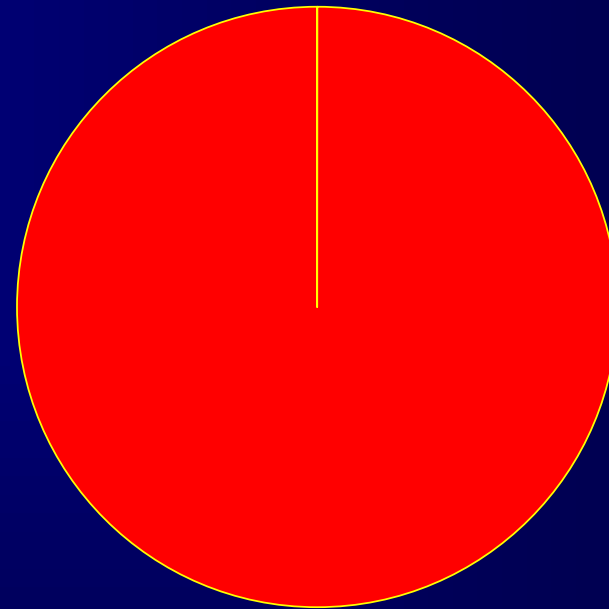
# Standard Gamble Board

**Choice A**



Good Health

**Choice B**



Ranked Best

Living  Dying 



# Results

- Demographics
  - Median age 67 years (range 47-81 years)
  - Male to female ratio 2:1
- EQ-5D at time of interview
  - heterogeneous population
  - majority had no current problems

# Health State Values

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Grade	TTO	SG
1 Few problems	.65	.77
2 Frequent problems	.44	.48
3 No solid foods	.35	.27
4 Liquid diet	.25	.19
5 Unable to swallow	.08	.08

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Perfect Health = 1.00

Death = 0

# Treatment Values

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Treatment	TTO	SG
Stent/Tube	.63	.60
Laser	.62	.59
Brachytherapy	.54	.61

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Perfect Health = 1.00

Death = 0

# Interview Perception

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Patient Perception	TTO	SG
Acceptable	75%	71%
Difficult/V.difficult	25%	29%

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Interview Quality	TTO	SG
Very good to average	82%	93%
Poor to v.poor	18%	7%

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# Conclusions

- Similarity of TTO and SG
- Chaining achieved significant differences in values
- Combine results with information on costs of treatments
- Establish cost effectiveness of different treatments

# Inclusion Criteria

- Previously treated histologically proven primary adenocarcinoma or squamous cell carcinoma of the oesophagus
- >6 months following potentially curative surgery
- No symptoms/signs of recurrence
- Signed informed consent
- Has experienced swallowing difficulties (dysphagia)

# Exclusion Criteria

- Histologically small cell carcinoma of the oesophagus
- <6 months following surgery
- Surgery was deemed palliative
- Currently under investigation for possible recurrence
- Overt symptoms/signs of recurrence
- Overtly distressed and anxious about self or medical condition
- Unable to communicate