

# The Economics of Health: How do we decide?



## Making decisions

You may find it helpful to draw tree diagrams in questions 1 and 2.

1. There are two treatments available to people with certain tumours: a new drug, *Kamtabital* (KTB), or best supportive care (BSC), where symptoms are controlled rather than actively treating the tumours. The probability that KTB is effective in controlling the disease is 0.6, while the probability that BSC is effective is 0.3. However, patients taking KTB suffer from a relapse in 50% of cases, whereas those who improve under BSC generally do not.
  - What is the probability of patients having a good outcome given that they were treated with BSC?
  - What is the probability of patients having a good outcome given that they were treated with KTB?
  - In deciding which treatment to recommend, what other factors might you take into account?
2. There are two drugs used to treat disease X – which would you recommend?
  - Drug A costs £1000 per person successfully treated and is successful in 70% of cases
  - Drug B costs £2000 per person successfully treated and is successful in 90% of cases
  - The cost of unsuccessful treatment is £10,000 for both drugs.
3. Rheumatoid arthritis and osteoarthritis are often treated with NSAID (non-steroidal anti-inflammatory) drugs, such as aspirin and ibuprofen. These drugs, however, are very irritant to the stomach and gastro-intestinal tract and can cause ulcers. A new type of NSAID treatment has fewer side-effects, as well as being more successful in treating the arthritis.

23.8% of patients treated with old NSAIDs will suffer indigestion, and 48.9% of these will also develop an ulcer. Of those who develop an ulcer, 13.5% will be hospitalised, of whom 11.1% will require surgery. Of those who do not suffer indigestion, 10.3% will have a silent ulcer and of these 9.1% will be hospitalised.

1000 patients are treated with old NSAIDs. Use the decision tree provided to calculate how many of them would require:

- surgery
- hospitalisation

How many would not require any additional treatment?

The cost of old NSAIDs is 27p per person per day, and the cost of new NSAIDs is 40p per person per day.

- If there are 10 million people with arthritis in the UK, what is the cost of treating them all with new NSAIDs compared to old NSAIDs?
- If hospitalisation costs in the region of £400 per day and surgery in the region of £6000, are the new NSAIDs likely to be cost effective?

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