

# Cost-effectiveness of RediRoom

IPC Tour 2022

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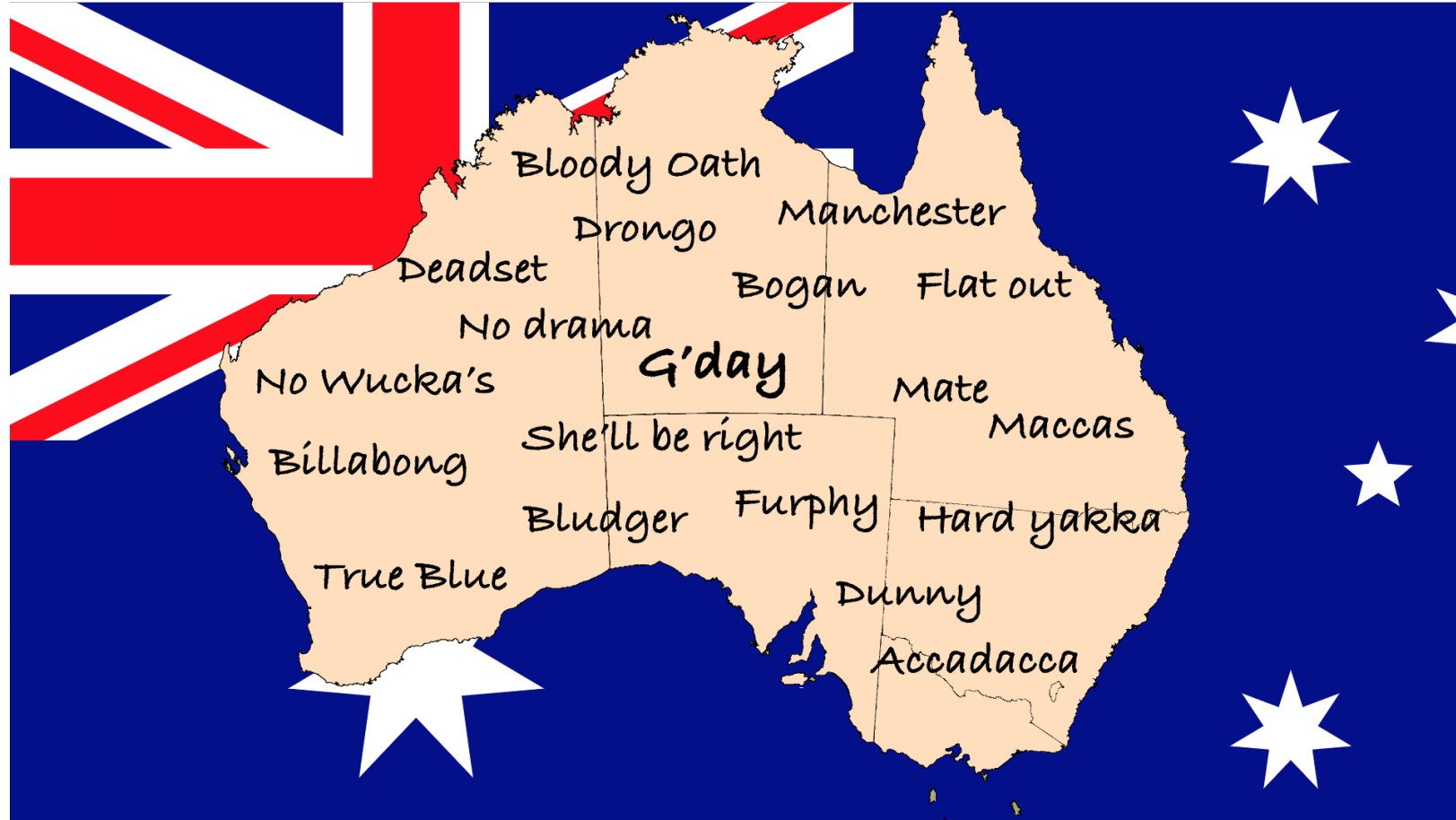
## Disclaimer/background

- Received no fees or payment for this talk
- Do not receive fees or payment from any associated with meeting
- Receive no royalties or similar related to the RediRoom.

# Cost-effectiveness



# IPC needs varying skills – need to know the lingo



# RediRoom



# Background

- Commissioned work, led by Prof Nicholas Graves
- Three publications (UK, Australia and Singapore)
  - Same methods, different data, similar results
  - UK – Published in Journal of Hospital Infection (accepted, published)
  - Aus – Published in Infection, Disease and Health (accepted, in-press)
  - Singapore – Value in Health Regional Issues (under review)
- Present Australian paper

# Background

- Model the potential economic changes from a decision to adopt 'Rediroom' into Australian public hospitals.
- By how much 'health care costs', 'cases of HAI' and associated 'health benefits' are expected to change from a decision to adopt 'Rediroom' into an Australian publicly funded acute hospital




# Background - challenges

- Model – all models are wrong, some are useful
- Real life study would be enormously expensive
- Some big ‘unknowns’ and assumptions – that isolation will reduce the risk of transmission and infection

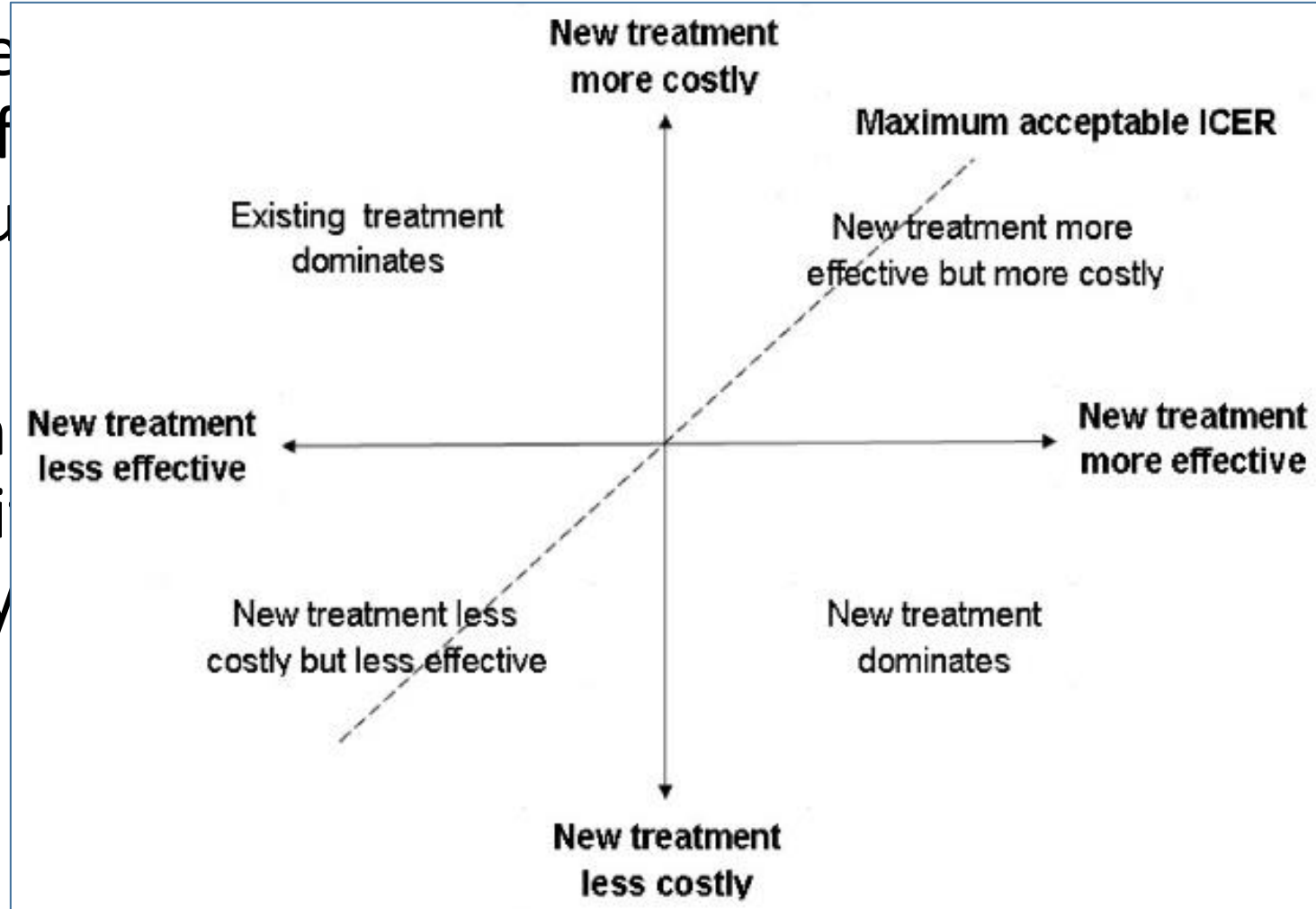


# Background

- Setting – Group A, Australian hospitals
  - Take the perspective of health services
  - Life years gained from reduced risk of death are the measure of health benefit.
  - Outcomes:
    - Expected number of patients with an HAI per year.
    - Number of acute care bed-days required to manage a HAI
    - Monetary value of bed days lost
    - Number deaths associated with HAIs
    - Life years lost
- 
- Builds on other work

# Background

- HAI of inter...  
difficile inf...  
(SSI) and u...
- An increm...  
'cost per li...  
commonly



provides  
action

as the  
cost  
\$28,000

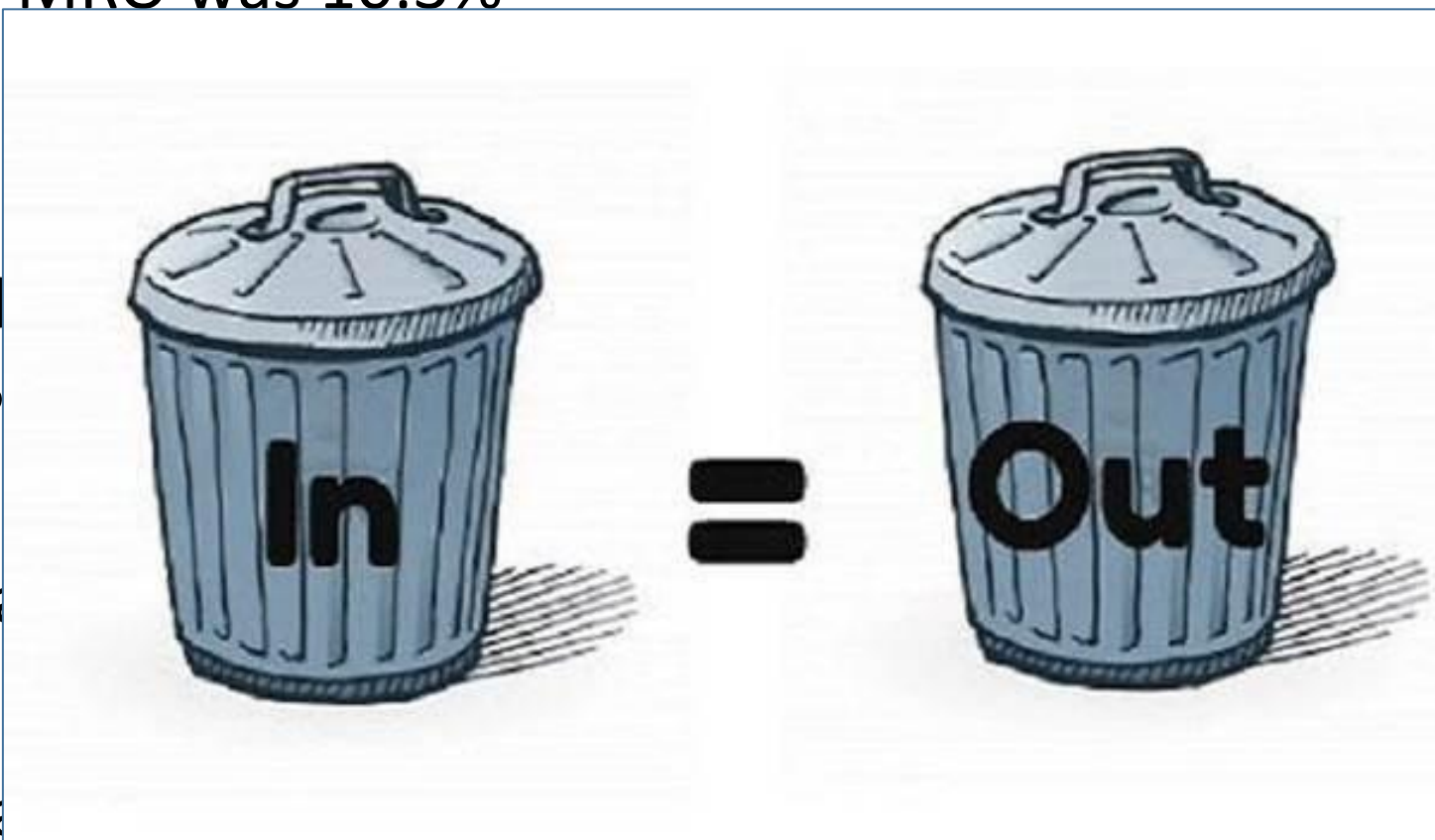
# Information in the model

- Used a PPS with 2767 patient **GIGO** hospitals included
- Prevalence MRO was 10.3%
- Approx 4.4

- Extra length
  - For BSI, 5

- Mortality r

- Cost bed d



-8 days

and cases per 100,000 occupied

rate	Cases per 100,000 occupied bed-days
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93

20

196

170

164

642

UTI	0.88%
All	3.47%

# Biggest assumptions

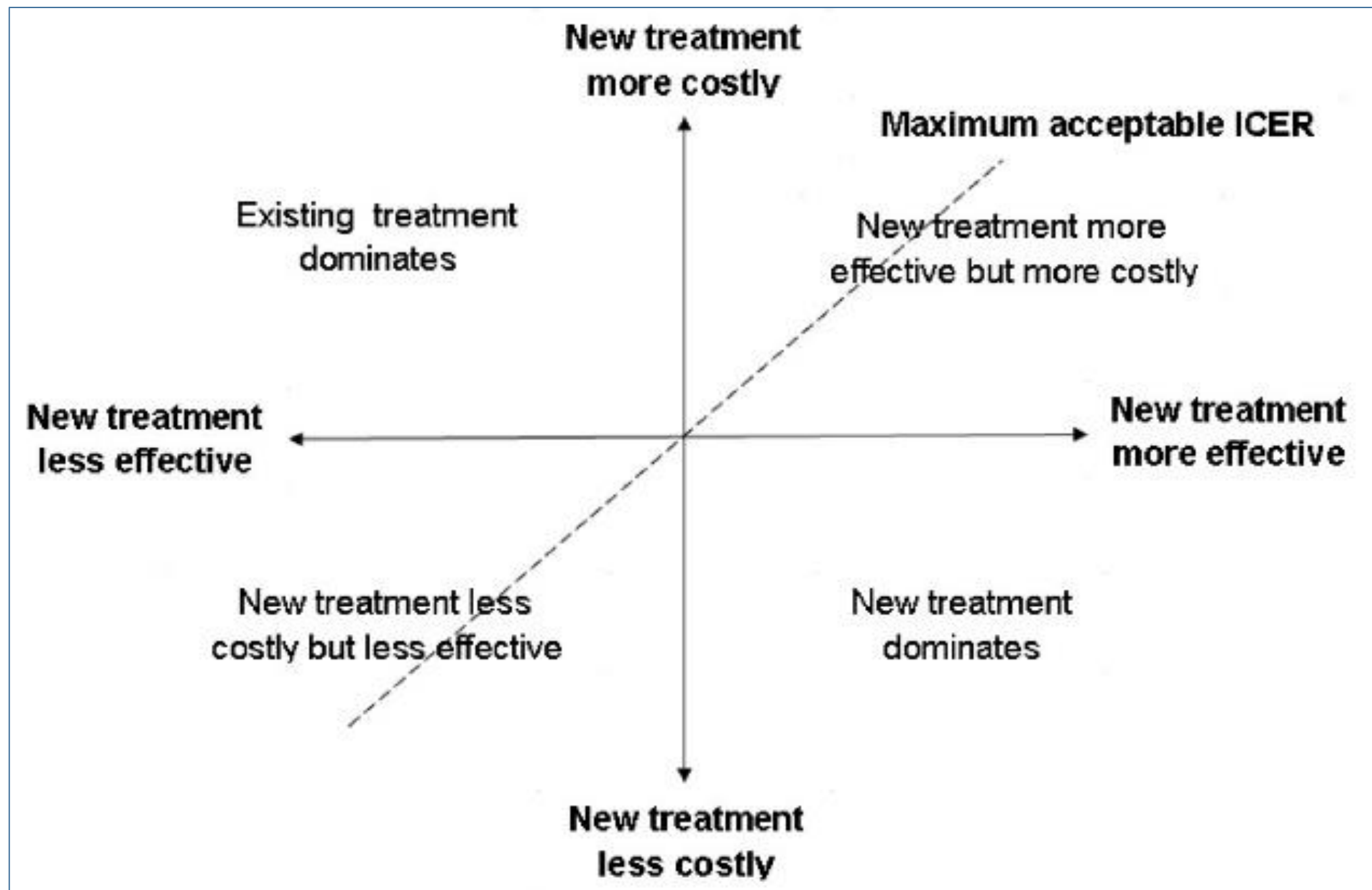
How much does isolation reduce transmission and infection?

Estimated about 30%

Modelled 14%-51%

# Results

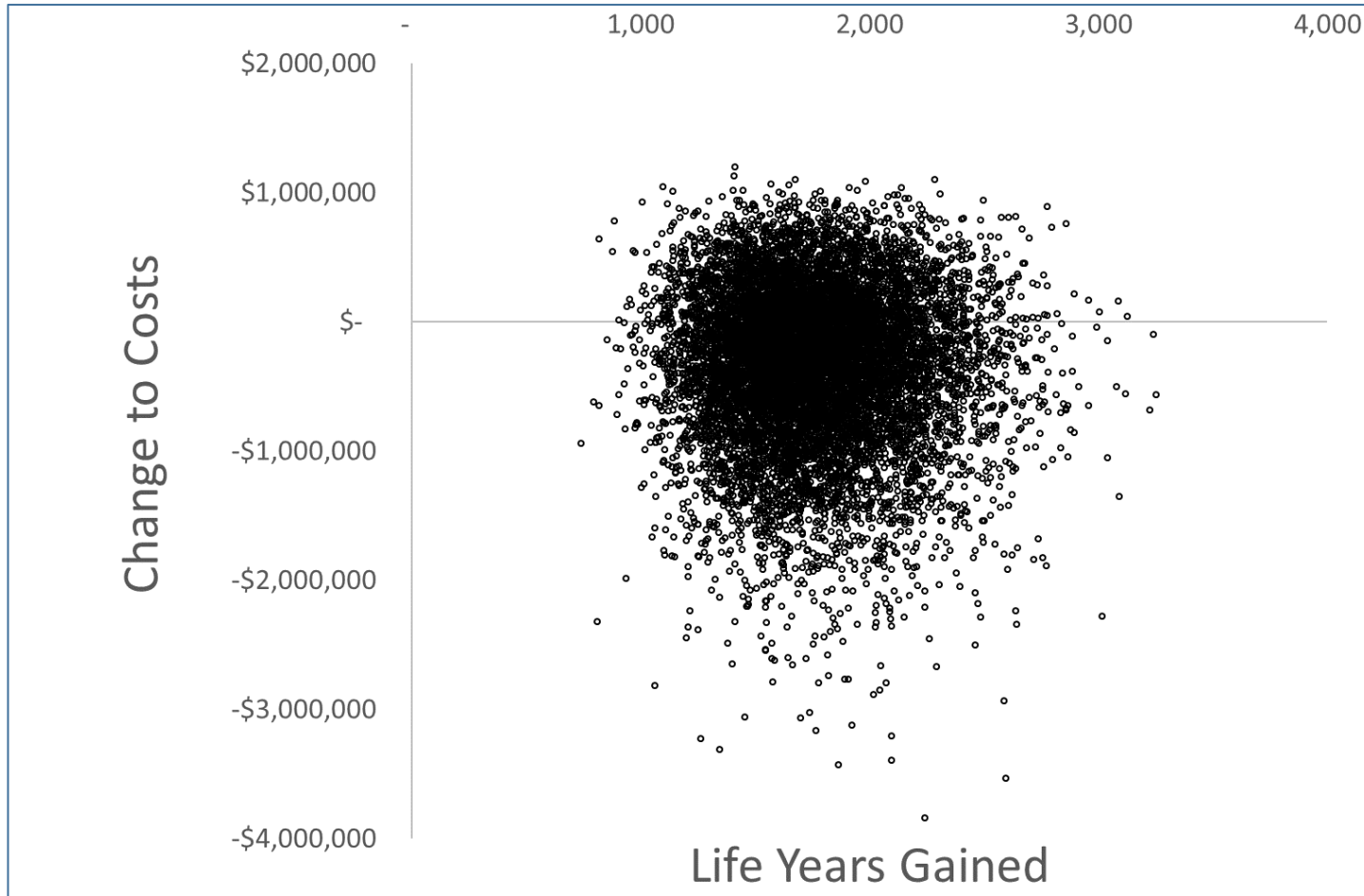
- Change total costs per 100,000 occupied bed-days by \$1,429,011 and generate
  - Health benefits of 436 life years.
  - The mean cost per life year gained is \$3278.
- The probability that adoption is cost effective against a \$28,000 threshold per additional LYG is 100%.
- The probability an adoption decision is cost saving is 2.1%.



# “Take-aways”

- Some evidence that adoption of ‘Rediroom’ into the Australian public healthcare system will be a cost-effective decision against commonly used thresholds.
- Data used are robust and largely come from Australian data
- Potentially low estimates of LOS for BSI and HAP – meaning result in conservative
- Availability of single rooms varies
- Useful for admissions deemed high risk who cannot be accommodated in an existing single rooms

# But what about UK and Singapore??

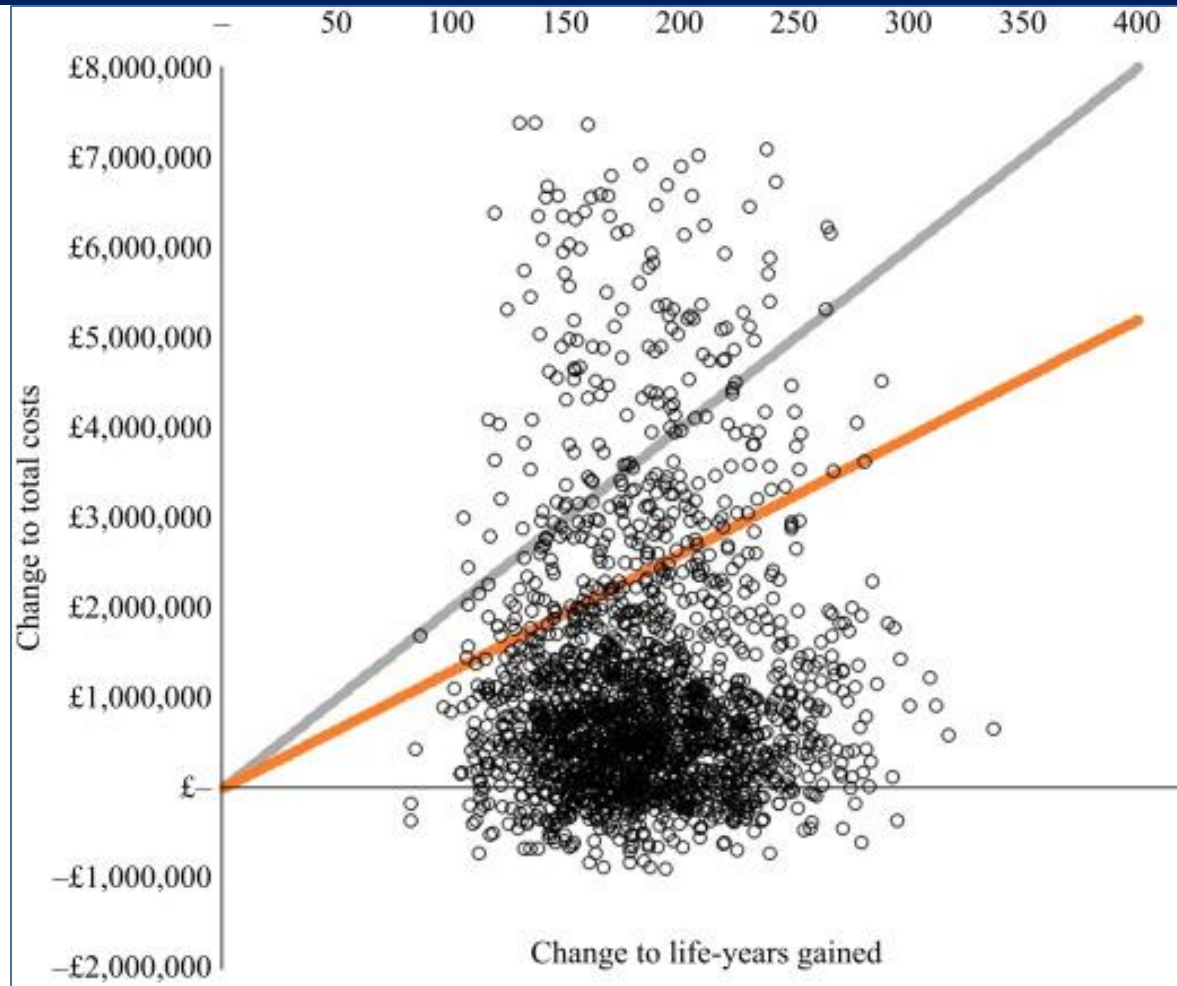


Singapore (under review)

- 67% probability that adoption will be cost saving
- 100% probability it will be cost-effective against the threshold value of \$SGD80,000 per life year gained.



# But what about UK and Singapore??



UK (published)

- Cost-effective against a £20,000 threshold per additional LYG is 93%,
- For £13,000 this is reduced to 87%.
- If the mean value for effectiveness were reduced to 16.5%, then the probability that adoption is cost-effective would exceed 50%.

# Importantly

- All models are wrong, some are useful
- Used 'real life data'
- Holds up in different models e.g. half effectiveness, half risk of death
- Well below WTP thresholds
- Not a real life study or clinical trial
- Other considerations, other than cost

# Questions?



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