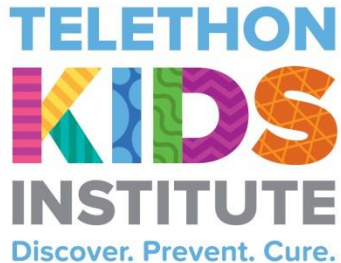


Economics of rheumatic fever prevention



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Outline

- Definitions and concepts
- Disease pathway for rheumatic fever
- History of economic evaluations for rheumatic fever prevention strategies
- Considerations for future evaluations





Health Economics

- **Economics** is a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses¹
- **Health economics** is a scientific discipline that applies economic principles to health and health care²

1. Robbins, Lionel (1932). An Essay on the Nature and Significance of Economic Science, p. 15..

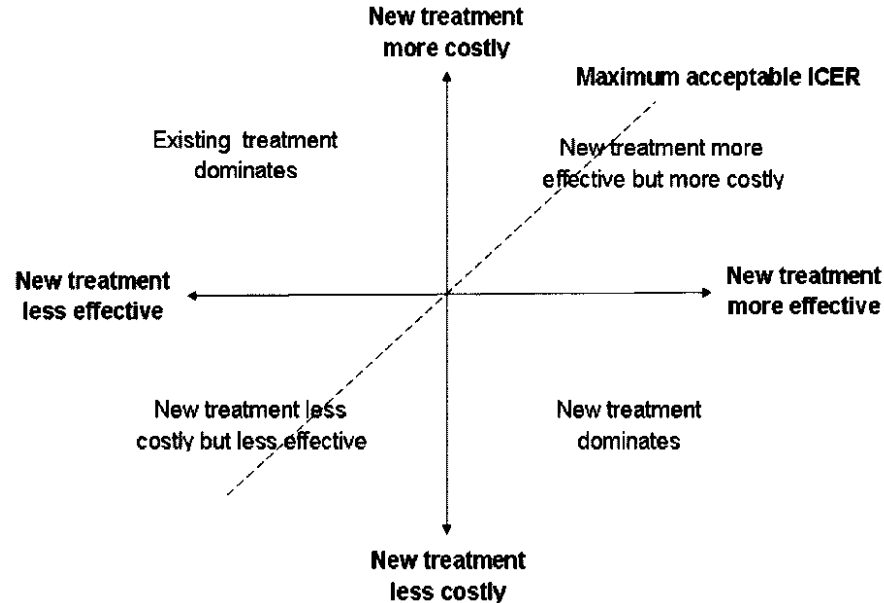
2. Phelps, C. (2009) Health Economics, 4th ed. Addison Wesley: London, UK



Concepts

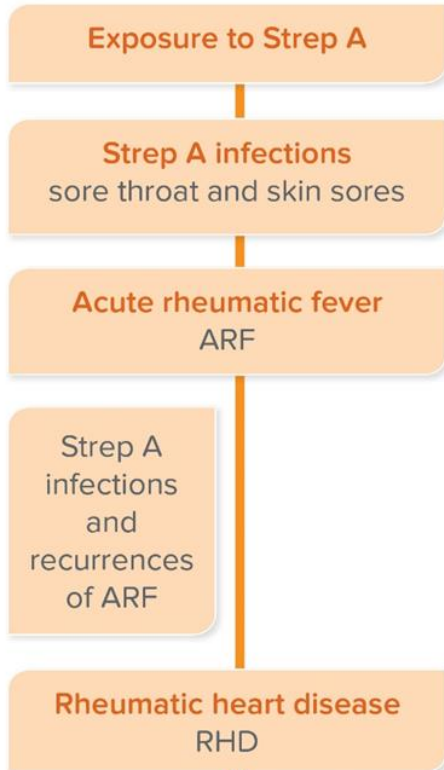
1. **Perspective** – health sector (public, private).
2. **Opportunity cost** – the cost of foregoing the next best alternative
 - Work absenteeism and presentism
3. **Efficiency and equity**

Health economic evaluation



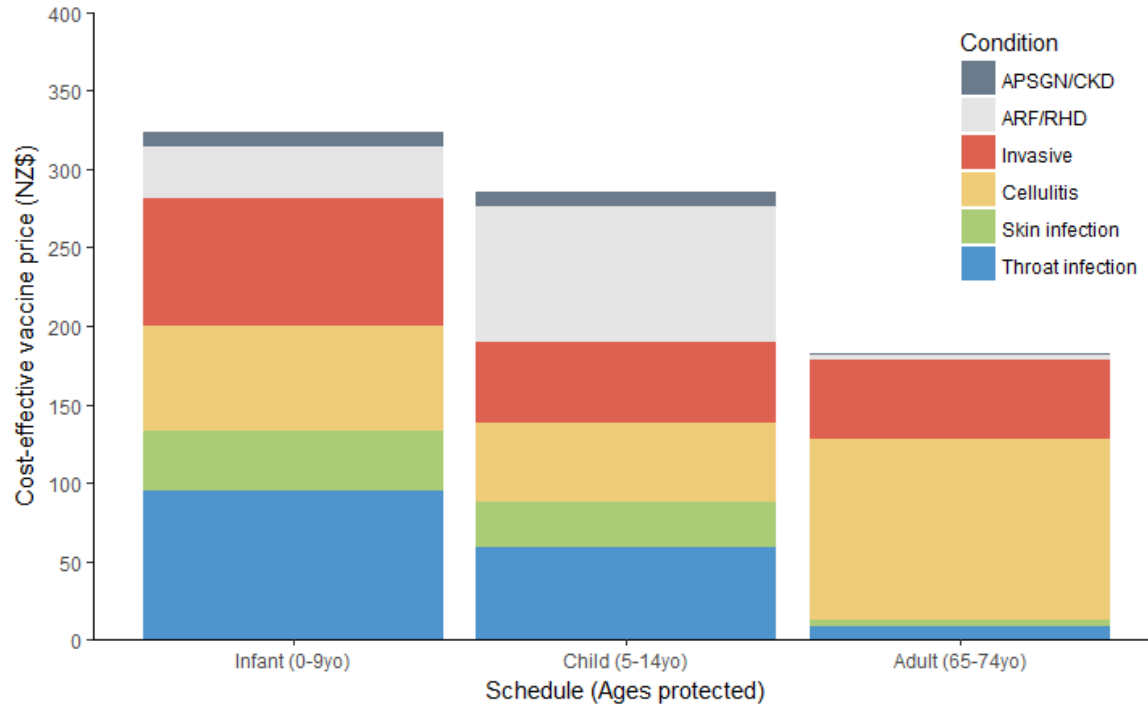
ICER (incremental cost-effectiveness ratio): marginal cost for an increase in effect ($\Delta\text{cost}/\Delta\text{effect}$)

Preventing Rheumatic Fever



- Active case finding of Strep A infection
 - Saslaw *et al*, 1965 (school-based)
- Passive case finding of Strep A infection
 - Robinson, 1971 (state-funded pathology program)
 - Who to test and what technology to use
- Echocardiographic screening for RHD
 - Targeted more towards preventing clinical RHD and adverse outcomes
- Vaccination

Value of a Strep A vaccine, NZ

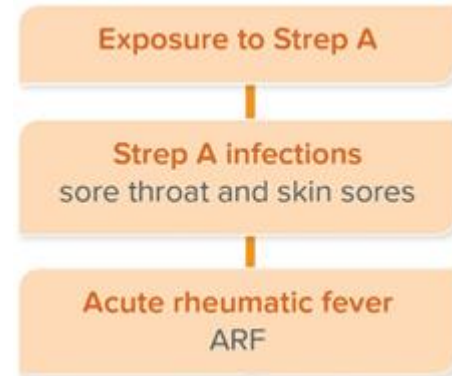


Cannon J, Jack S, Wu Y, Baker M, Geelhoed E, Fraser J, Carapetis J. The health and economic burdens of group A streptococcus in New Zealand. Manuscript in preparation



Economic considerations for prevention strategies

1. Reduce exposure (primordial prevention)
 - ✓ Prevents entire disease pathway (Strep A and other pathogens)
 - ✓ Reduces antimicrobial use and risk of antimicrobial resistance
 - ✗ Likely costly with long implementation timeframe (LMICs)
 - ✗ Who does not qualify?
2. Treat infection (primary prevention)
 - ✓ Proven effective
 - ✗ Relies on diagnosis and treatment of infection
3. Vaccination
 - ✓ Affordable proxy for primordial prevention
 - ✓ Can be implemented globally
 - ✗ Not ready to implement
 - ✗ Unknown short and long-term effectiveness





Public health value proposition of a vaccine

- Investment cases from different perspectives
- More consideration of broader health, economic, and social benefits
 - Education
 - Labour and productivity
 - Intergenerational benefits to family and community
 - Reduced antimicrobial use





Thank you

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