
MACH
Melbourne Academic
Centre for Health
2026 Research Design Webinar Series
MISCH Hub
Methods and Implementation Support
for Clinical and Health research
Centre for Digital Transformation
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MELBOURNE
DATA ANALYTICS
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MACH acknowledges the Traditional Owners of the land on which it works, the Wurundjeri People of the Kulin Nation, and we pay our respects to Elders past, present and emerging.

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Making Digital Health Stick: Implementation Science & Health Economics in Action

Date: 1 April 2026

Presenters: Dr Portia Cornell and Dr Debbie Passey

The Validitron

Presenters



Dr Portia Cornell
Senior Health Economist
Centre for the Digital Transformation of Health University of Melbourne
https://mdhs.unimelb.edu.au/digitalhealth



Dr Debbie Passey
Implementation Science Specialist
Centre for the Digital Transformation of Health University of Melbourne
https://mdhs.unimelb.edu.au/digitalhealth

About Me



I am a senior research fellow in the Centre for Digital Transformation of Health and the Centre for Health Policy at the University of Melbourne.

My current research interest is in optimising the care of older Australians through equitable access to digital health. My expertise is in understanding and evaluating care models using methods and theories from health economics and large datasets from administrative and medical records.

In previous work, I have studied the impact of social workers in primary care and improving care transitions in the US Veterans Health Administration; quality of care in nursing homes, post-acute skilled nursing facilities, and assisted living communities; and underwriting in long-term care insurance markets. You can read some of my papers in the Journal of Health Economics, Health Services Research Journal, and Health Affairs.

I enjoy talking to students and am available to supervise masters' theses and capstone projects. Portia.Cornell@unimelb.edu.au

LinkedIn: https://go.unimelb.edu.au/sx82

Bibliography: https://go.unimelb.edu.au/8x82

Learning goals

Section 1: Health Systems (economic lens)

1. **Describe some economic concepts that inform our understanding of adoption of digital health technologies.**
2. **Identify the major features of the Australian health care system and its funding, to better understand where new digital health technologies will fit in the funding scheme.**

Section 2: Economic Evaluation

1. **Types of economic evaluation**
2. **Budget impact analysis**

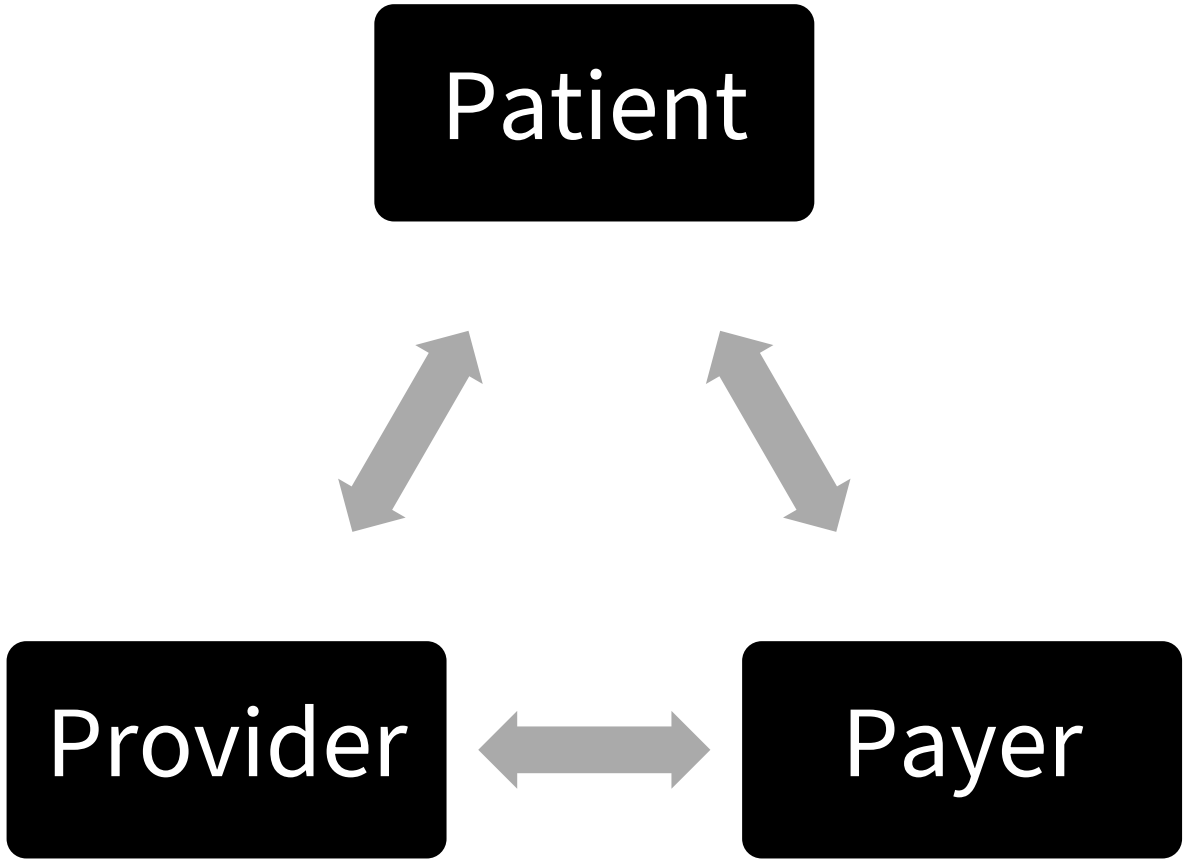
Section : Australian health care system *(an economic lens)

What make health care different?

The core problem: Healthcare is expensive and unpredictable — a single hospital stay can cost tens of thousands of dollars

The solution: pool risk across many people so no one person faces catastrophic costs alone.

Why are health care system markets not like other markets?



The "Patient-Provider-Payer" triangle makes health economics a little different.

Government intervention

Uncertainty

Asymmetric information

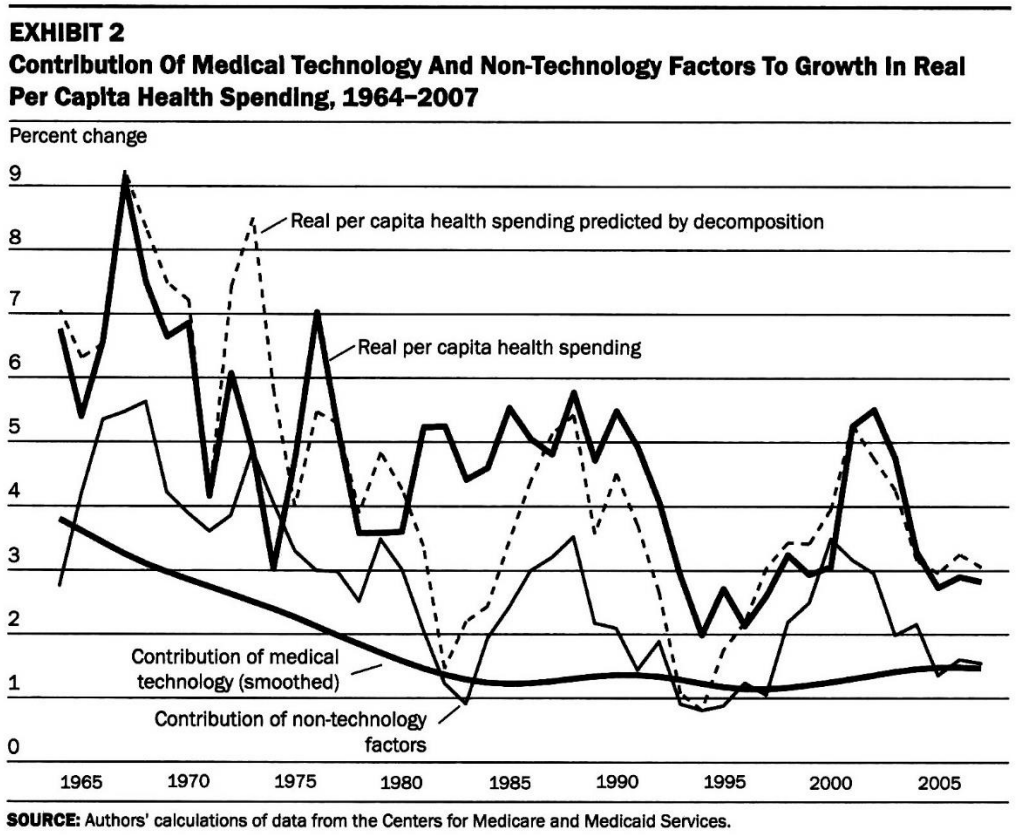
Barriers to entry

Externalities

Moral hazard

Fundamental right to health care

What does health spending do? It increases!



Medical capability-technology is the primary driver of health spending growth.

Causal factors of growth in real health spending (USA):	
Income effects	29%
Relative medical price inflation	5%
Demographic effects	7%
Changes in insurance coverage	11%
Technology	48%

Smith S, Newhouse JP, Freeland MS. Income, insurance, and technology: why does health spending outpace economic growth?. Health affairs. 2009 Sep;28(5):1276-84.

Trade-off of risk and accountability in payment schemes

“You get what you pay for”

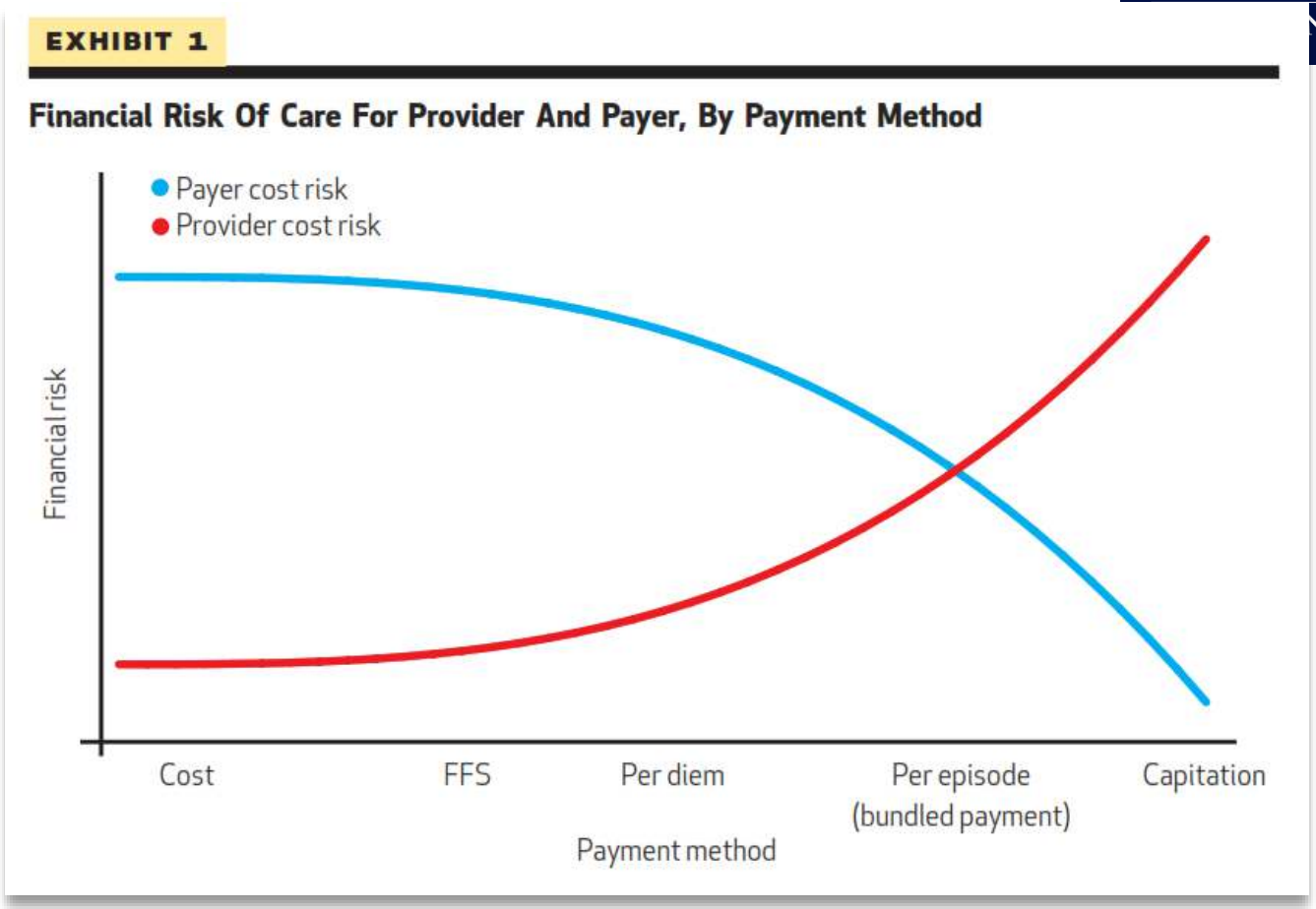
What is the financial incentive in fee-for-service models?

One solution: pay for outcomes, not services

In theory, putting risk on providers encourages innovation and efficiency

But how much risk can they bear?

Beware the unintended consequences!



Frakt AB, Mayes R. Beyond capitation: how new payment experiments seek to find the ‘sweet spot’ in amount of risk providers and payers bear. Health Affairs. 2012 Sep 1;31(9):1951-8.

Trade-off of risk and accountability in payment schemes

“You get what you pay for”

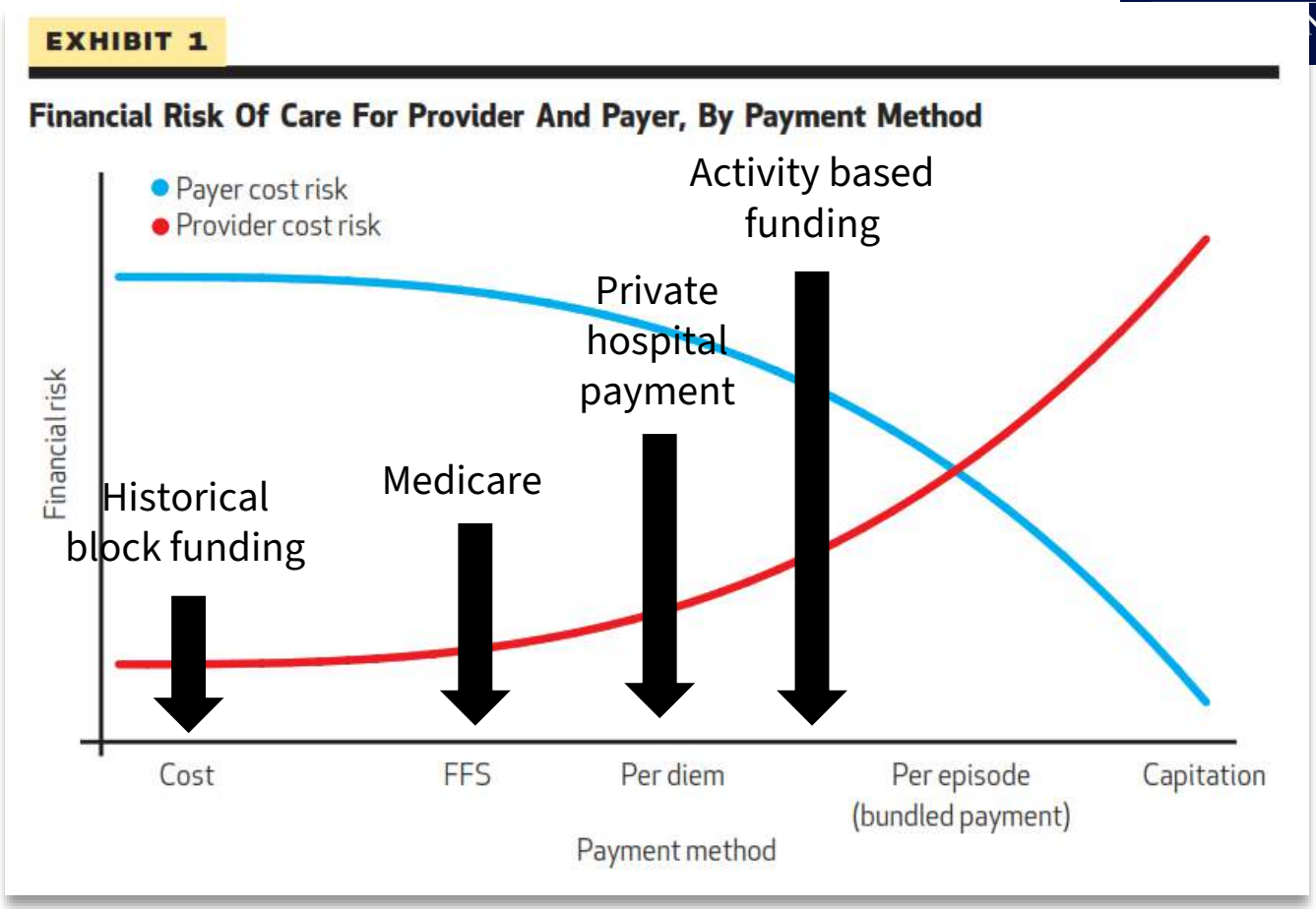
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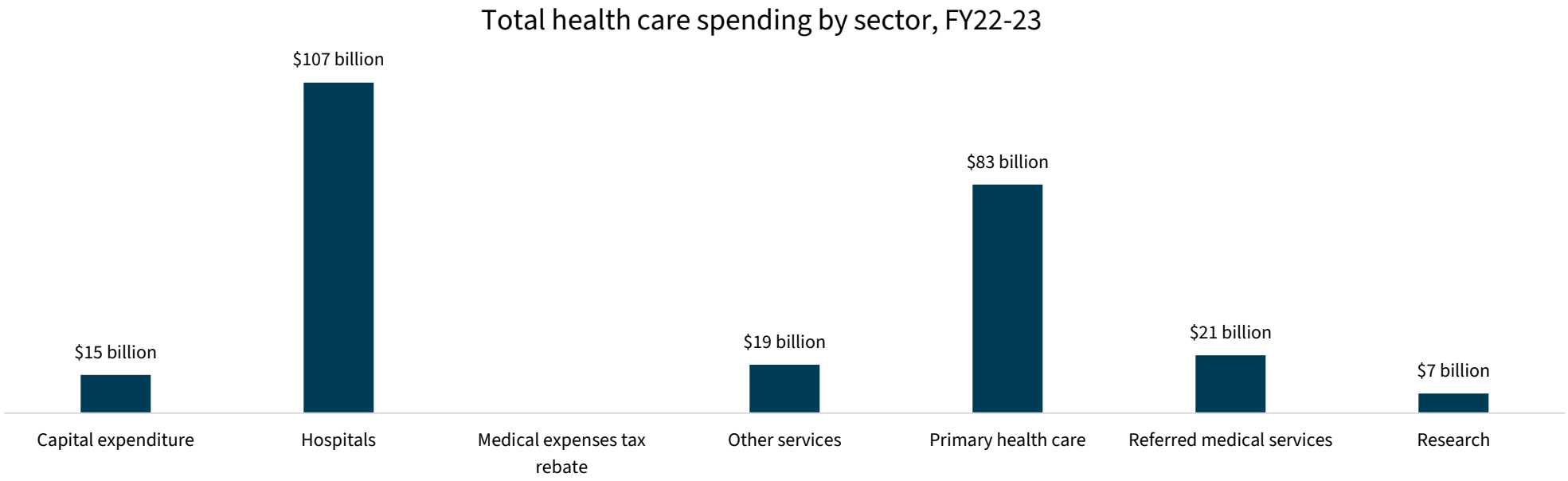
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Frakt AB, Mayes R. Beyond capitation: how new payment experiments seek to find the ‘sweet spot’ in amount of risk providers and payers bear. Health Affairs. 2012 Sep 1;31(9):1951-8.

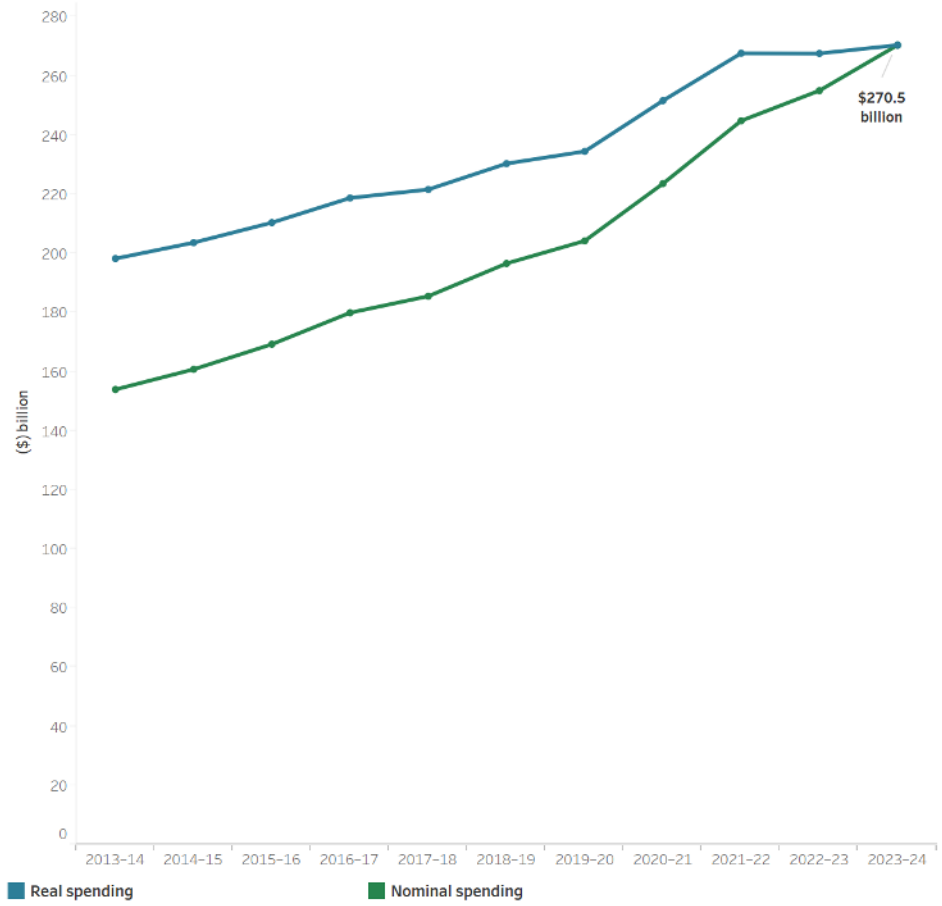
Health spending in Australia

Australia spent $9,597 per person on health care in FY 2022-23



Australian Institute of Health and Welfare. “Health Expenditure in Australia 2022-23 data cube.” Available at: https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2022-23/data

Health spending growth in Australia

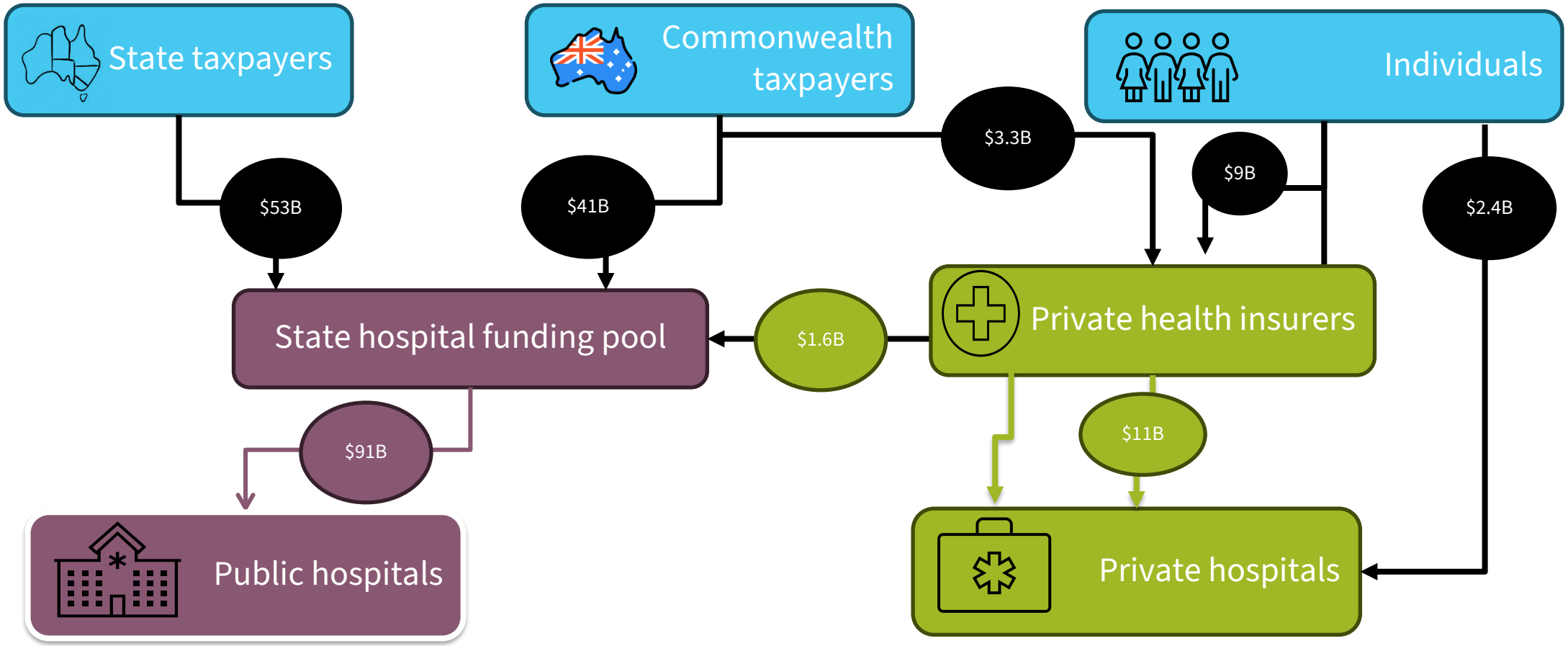


Shows health spending in real (current) dollars.

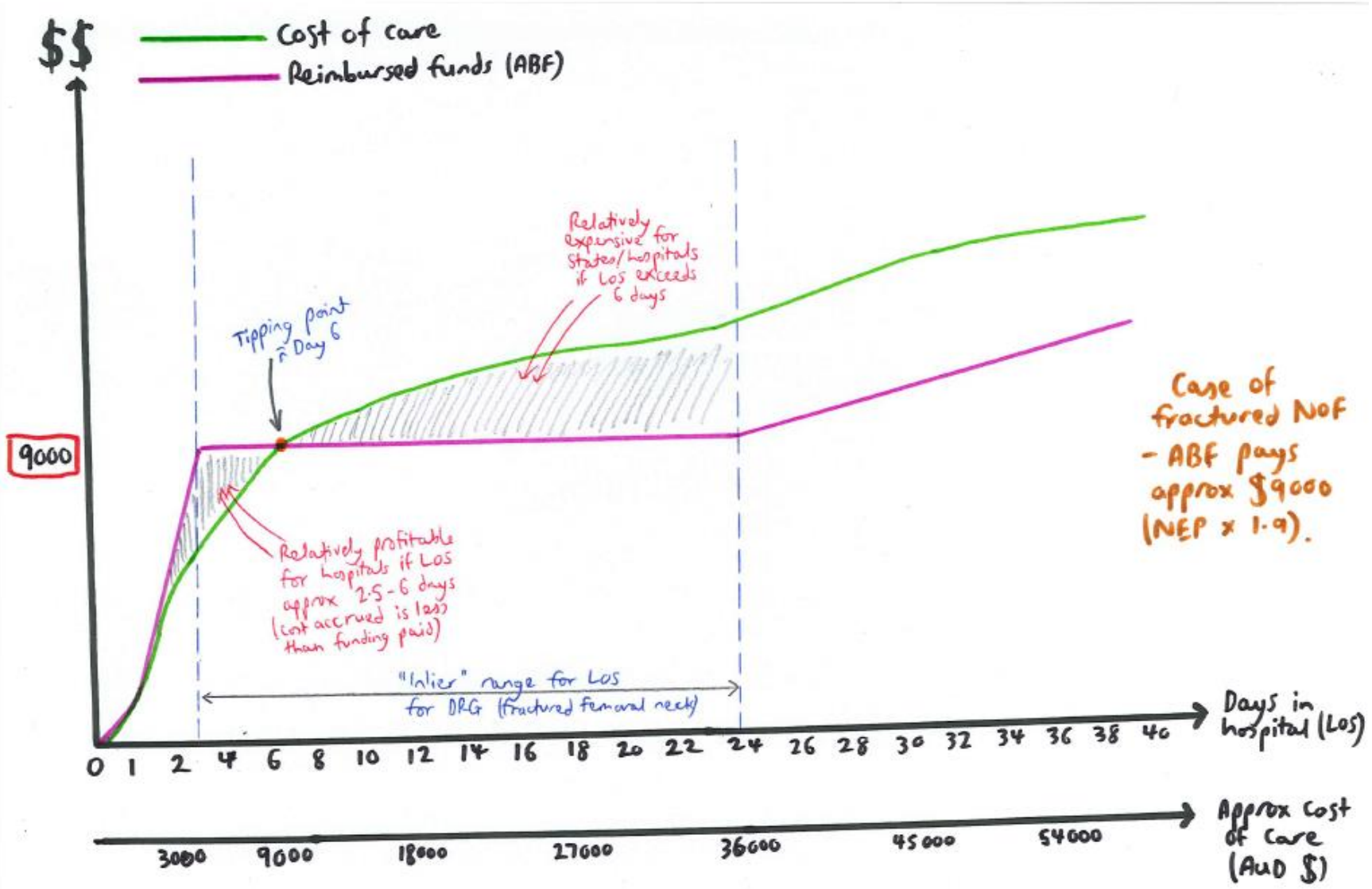
Ratio of health expenditure to GDP is relatively stable: 9.8% in 2014, 10.1% in 2024.

Why is spending growth different between the U.S. and Australia?

Australian hospital funding



Activity-based funding: hospital episode



Explainer: hospital funding in a nutshell | InSight+

Section 2: Heatlh economic evaluation

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What is health-economic evaluation?



What is HTA?

Health Technology Assessment (HTA) is a ***multidisciplinary*** process that uses explicit methods to determine the ***value of a health technology*** at different points in its ***lifecycle***. The purpose is to inform decision-making in order to promote an equitable, efficient, and high-quality health system.

HTA Glossary (http://www.htaglossary.net)

Note 1: A health technology is an intervention developed to prevent, diagnose or treat medical conditions; promote health; provide rehabilitation; or organize healthcare delivery. The intervention can be a test, device, medicine, vaccine, procedure, program, or system (definition from the HTA Glossary; http://htaglossary.net/health+technology).

Note 2: The process is formal, systematic, and transparent, and uses state-of-the-art methods to consider the best available evidence.

Note 3: The ***dimensions of value*** for a health technology may be assessed by examining the intended and unintended consequences of using a health technology compared to existing alternatives. These dimensions often include ***clinical effectiveness, safety, costs and economic implications, ethical, social, cultural and legal issues, organizational and environmental aspects, as well as wider implications for the patient, relatives, caregivers, and the population***. The overall value may vary depending on the perspective taken, the stakeholders involved, and the decision context.

Note 4: HTA can be applied at different points in the lifecycle of a health technology, that is, pre-market, during market approval, post-market, through to the disinvestment of a health technology

HTA processes in Australia

Governed by :

Pharmaceutical Benefits Advisory Committee (PBAC) – covers pharmaceuticals

Medical Services Advisory Committee (MSAC) – covers medical services (procedures, therapeutic, investigative and diagnostic tests)

Prosthesis List Advisory Committee (PLAC) – covers protheses

Therapeutic Goods Administration (TGA) – market authorisation for regulation

Factors that influence decision making:

- **Clinical need**
- **Improvements in health**
- **Cost of technology relative to health benefits (cost-effectiveness)**
- **Patient affordability in absence of PBS subsidy**
- **Predicted use in practice and financial implications on PBS and the Australian Government**

Other considerations: confidence in evidence, equity, presence of effective alternatives, severity of disease, value of knowing, organisational issues

What is economic evaluation?

Comparison of health interventions

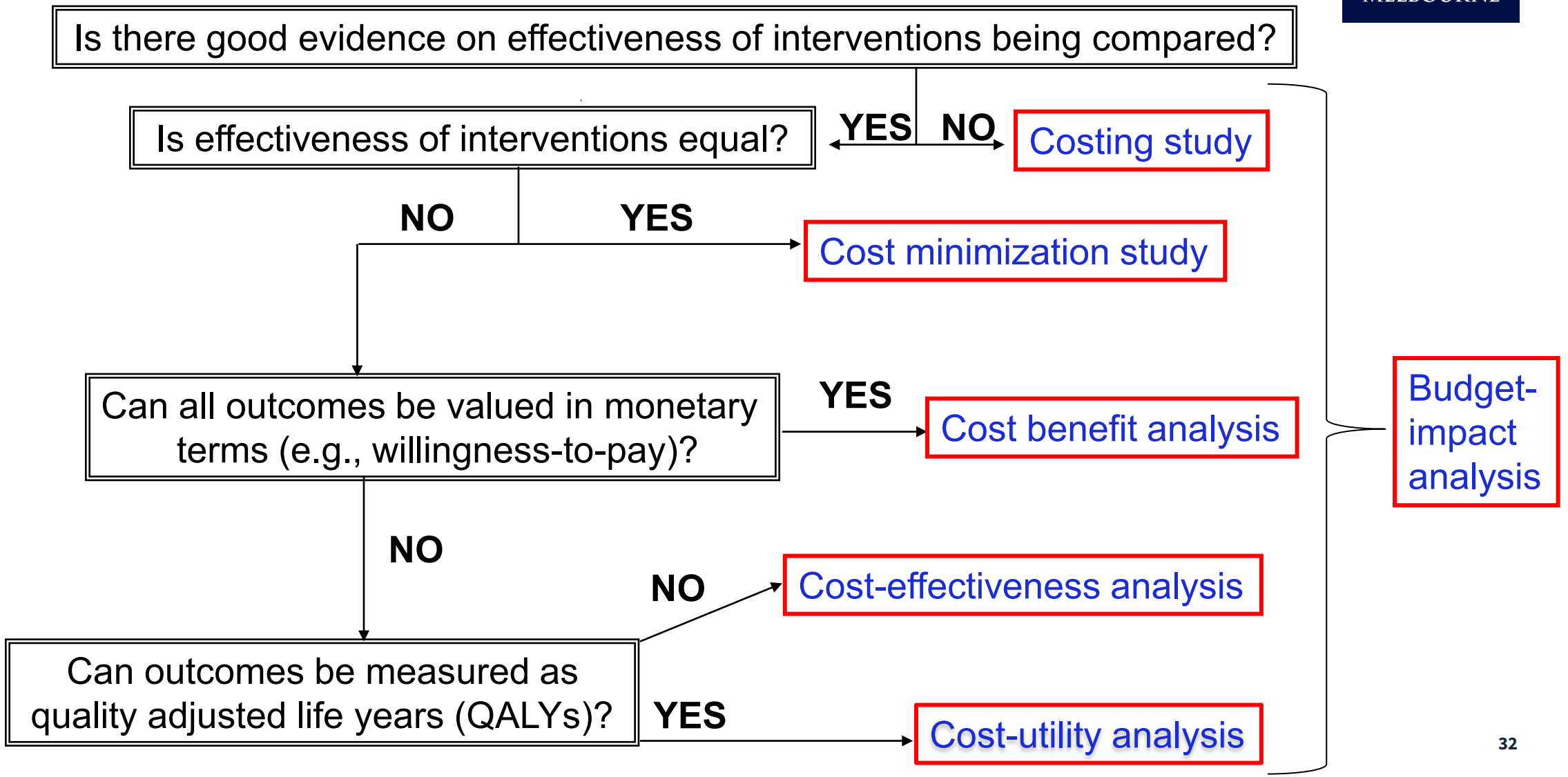
Takes into account both costs and outcomes

Informs on effectiveness and cost-effectiveness of interventions



Allocation of limited funds to *maximise* population health gains

Types of economic evaluations

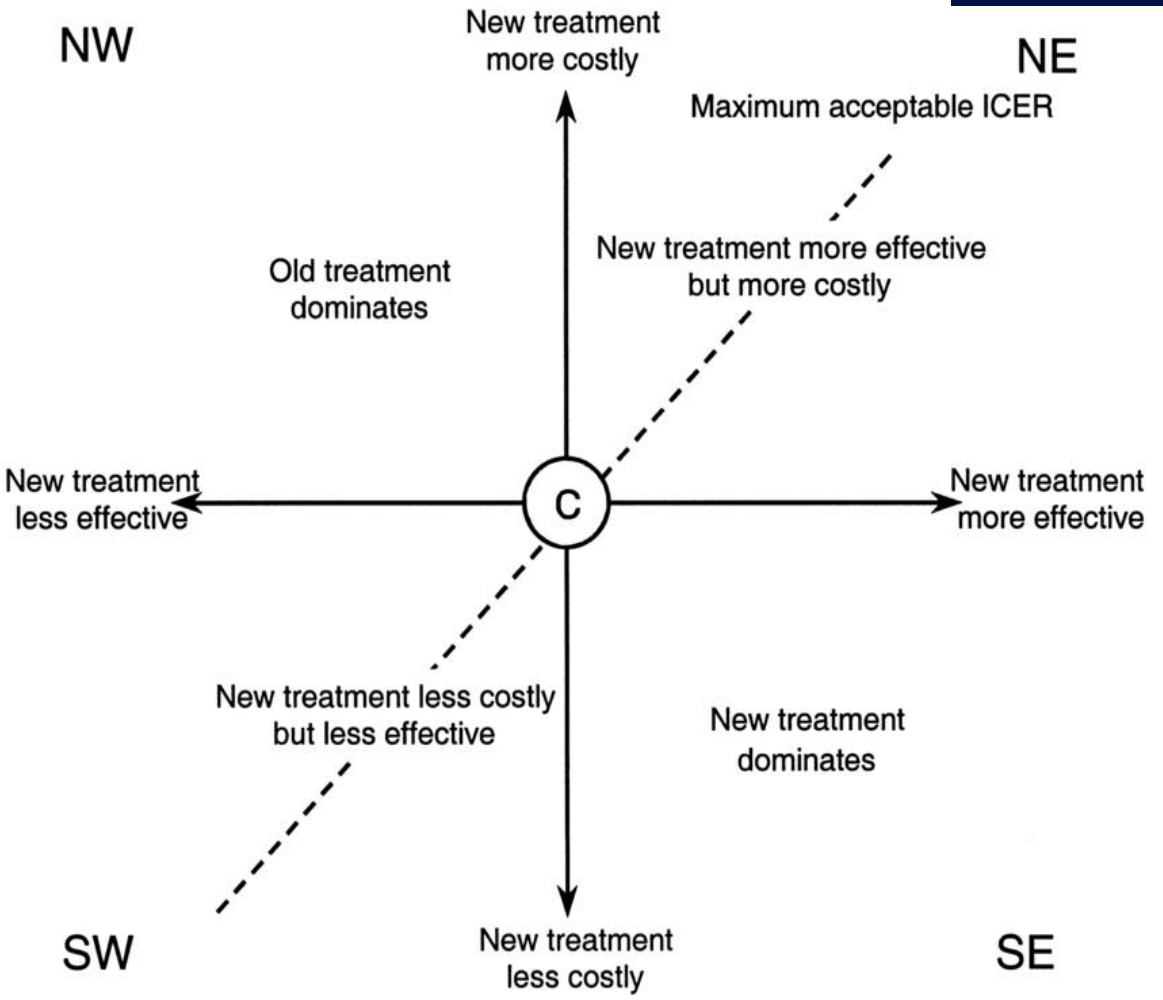


ICER & cost-effectiveness plane

$$ICER = \frac{Costs_{Intervention} - Costs_{Control}}{Outcomes_{Intervention} - Outcomes_{Control}}$$

Incremental cost-effectiveness ratios (ICERs) can be presented as:

- **$$$ per case detected**
- **$$$ per death prevented**
- **$$$ per life year gained**
- **$$$ per QALY gained**
- **$$$ per infection averted**



Sourced from DOI: 10.1177/009286150103500441

Budget Impact Analysis

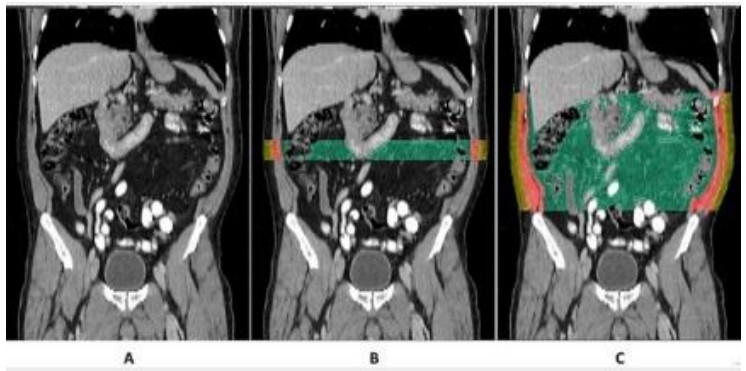
- Focus on affordability of health care interventions
- Most relevant to health services and physician practices (also required for commonwealth applications)
- Perspective of the budget holder
- Treatment mix, resource use, and outcomes before and after adoption of technology
- Simple “cost calculator” approach for ease of use by budget holders
- Validation with decision makers for face validity
- Data sources: published clinical trial estimates and comparator studies, where possible

Sullivan SD, Mauskopf JA, Augustovski F, Caro JJ, Lee KM, Minchin M, et al. Budget impact analysis—principles of good practice: report of the ISPOR 2012 Budget Impact Analysis Good Practice II Task Force. Value in health. 2014;17(1):5-14.

Budget impact analysis: components

Parameter	Description	Resources
Population	Regional or national prevalence of target condition, workforce, size of system, total no. of beds or hospital admissions	National registries and foundations, government data, hospital historical data
Timeline	Length of period for costs to accrue	Attention to the budget and political timeline of payer
Direct costs	Cost of your tool or intervention	Internal data, market data, staff salaries for training and use
Resource use	Indirect costs of health service use due to effectiveness of intervention	Independent Health and Aged Care Pricing Authority https://www.ihacpa.gov.au/
Methods	Spreadsheet-based is recommended for accessibility to stakeholders	NICE Budget Impact Template
Effectiveness	Expected outcomes from use of the device, program, or intervention	Published trials or reports on similar interventions retrospective observational studies; key informant interviews;
Base case	Clearly define the “comparator” assumptions	
Scenarios	Bound your scenarios with high/low effectiveness and cost parameters.	Market research and evidence gaps: what scenarios represent areas of uncertainty and risk?

Case study: Budget impact analysis of AI-supported clinical decision support



- A clinical decision support platform could personalise chemotherapy dosing to reduce chemotherapy toxicity.
- Machine learning measures lean body mass measured from CT scans, instead of the current outdated calculations using height and weight.

Hypothetical business case for a hospital that treats 200 colorectal cancer patients per year:

- **Reduce toxicity-related hospital admissions from 70 per year to 48.**
- **Cost of the platform: $160,000 per year**
- **Saves the health system: $280,000 per year.**
- **Hospital gets ABF reimbursement, but with 13% loss on unplanned hospitalisation**
- **Net cost to hospital: $63,000**

Make it make sense?

How could you change the payment design to make a better incentive for high quality patient care?

The value of early HTA

Grutters et al (2017) retrospectively analysed 32 early-stage health economic modelling assessments

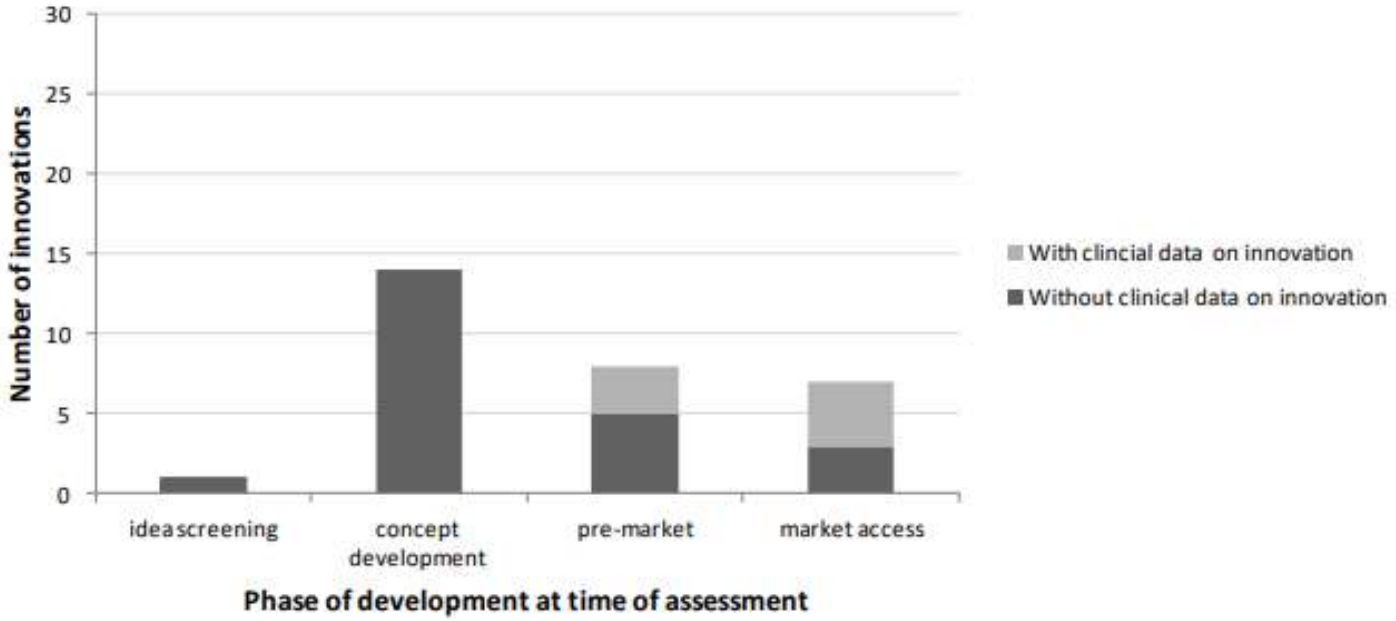


Figure 1. Overview of the Phases of Development at the Time of Assessment.

Early HTA provided insights into:

- ***Potential cost-effectiveness*** *and* ***key parameters*** *that influence this*
- *Recommendations for* ***further research and development*** *to maximise value for money*
- ***Steering future research*** *more specifically; e.g. endpoints, target populations, study types*

What does early economic evaluation look like in digital health innovations?

- **Taking into account human factors evidence, to understand drivers of the costs and benefits, key performance characteristics**
- **Identify target outcome depending on the potential payer/consumer**
- **Headroom analysis: transparent assumptions**
  - *What is the maximum price point, depending on expected effectiveness?*
- **Break-even analysis**
  - *What level of effectiveness would clinical studies need to show to have neutral cost?*
- **Clinical evidence is incorporated if and when it is available.**
- **In its absence, build various scenarios and carry out sensitivity analyses to consider boundary conditions of device performance and inform future study designs.**

Early stage economic analysis is exploratory and understanding where your technology would fit to maximize its value.

Ni, M., Borsci, S., Walne, S., Mclister, A. P., Buckle, P., Barlow, J. G., & Hanna, G. B. (2020). The Lean and Agile Multi-dimensional Process (LAMP) – a new framework for rapid and iterative evidence generation to support health-care technology design and development. *Expert Review of Medical Devices*, *17*(4), 277–288. https://doi.org/10.1080/17434440.2020.1743174

Early economic analysis: Exploratory economic evaluation

- Before clinical studies
- “effectiveness gap” or “headroom method”: what is the maximum additional effectiveness that could be achieved?
- When estimating the costs of production, compare with the results of headroom analysis to put an upper bound on the maximum price or investment

Intermediate phase: Value of Information (VOI) analysis

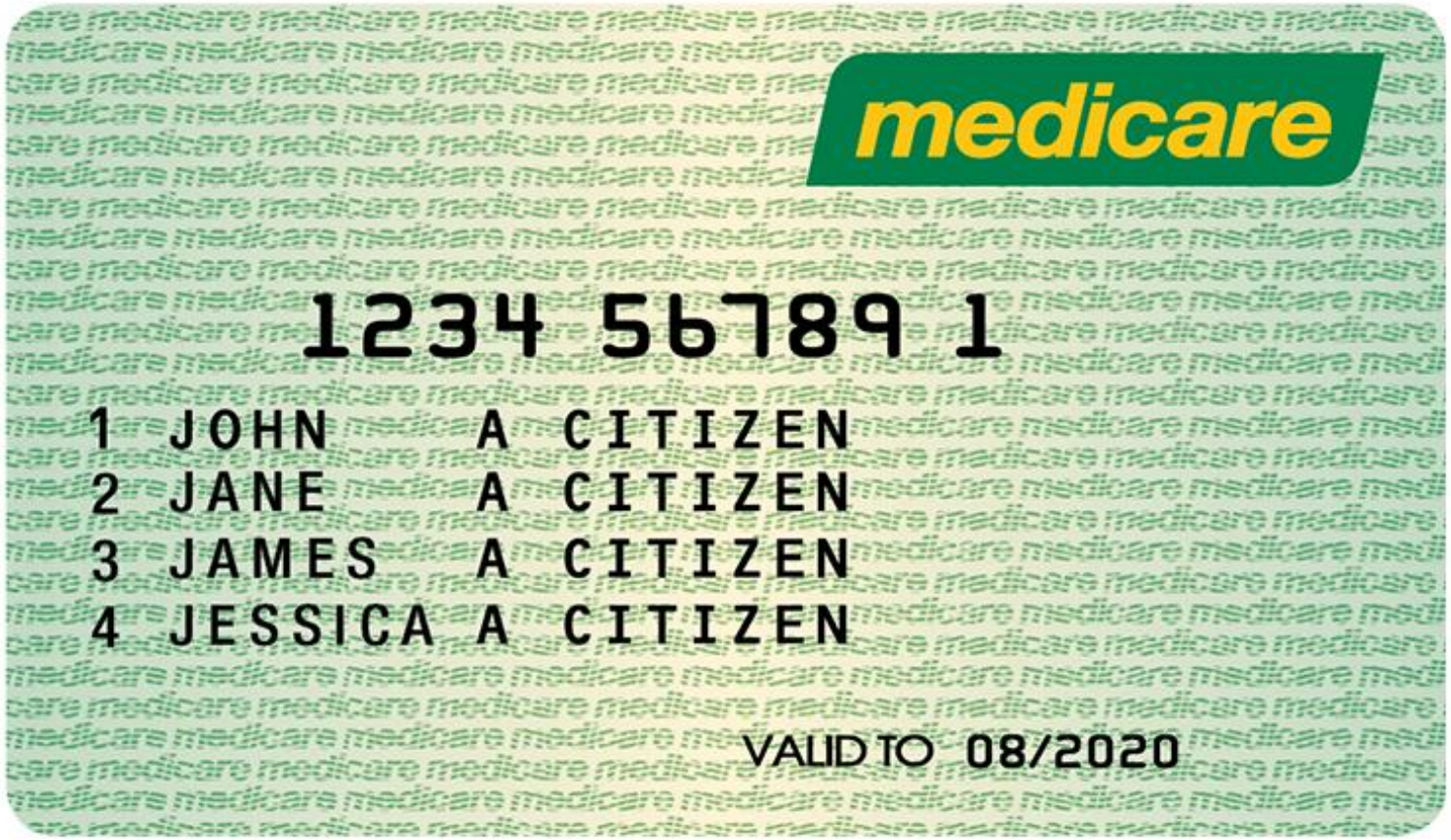
- Whether to adopt given existing evidence?
- Is more information required to support this decision in the future?
- Sensitivity analysis can identify what key parameters are influencing the cost-effectiveness or budget impact of a product
- Will gathering more information (changes in initial parameters OR changes in the precision) make a meaningful difference in the model outcomes?
- Insights into the value of carrying out further research and highlight variables in the model for which additional information would be most valuable

Late phase: Economic evaluation alongside prospective trials

- **Collect cost data as part of a trial or evaluation**
- **Inform reimbursement decisions**
- **Design the trial to address parameters of uncertainty:**
  - performance of the intervention?
  - Downstream treatment costs?
  - Long-term impact?

Medicare benefits schedule

- Medicare Services Advisory Committee (MSAC) determines funding level for new services or technologies, and amendments to services or technologies
- Non-MBS funding: health delivery programs such as cancer screening and health support programs
- Imaging, pathology, surgical
- Codependent health technologies
- **Uses a Health Technology Assessment (HTA) framework**



Adverse selection in insurance markets

Definition: When buyers have more information about their own risk than sellers, high-risk individuals disproportionately purchase insurance — driving up premiums and potentially collapsing the market.

1 ROOT CAUSE

Information Asymmetry

You know your own health status. The insurer does not. A person with a chronic condition knows they will claim more — but the insurer prices the policy on population averages.

2 MARKET FAILURE

The Death Spiral

Healthy people see premiums as bad value and opt out. The risk pool gets sicker. Insurer raises premiums. More healthy people leave. Repeat until market collapses.

3 SOLUTIONS

Policy Responses

Mandatory coverage (Medicare), community rating (everyone pays same premium regardless of health), and penalties for opting out all counteract adverse selection.

AU **Australia fixes this with:** Medicare (mandatory universal pool) + Community Rating (insurers must accept all applicants at the same premium) + LHC loading (penalises opting out late)

Government Incentives — Why You'll Care After Uni

⏰ Lifetime Health Cover (LHC) Loading

A time-penalty function with a hard deadline at age 31.

- If you don't take out private hospital cover by 1 July after your 31st birthday, you pay +2% on your premium for every year you were uninsured (max 70%)
- Example: delay until 41 → premiums are 20% higher, permanently
- This loading disappears after 10 continuous years of hospital cover
- Think of it as an optimisation problem: the cost of waiting compounds like a penalty function with no cap until age 31

💸 Medicare Levy Surcharge

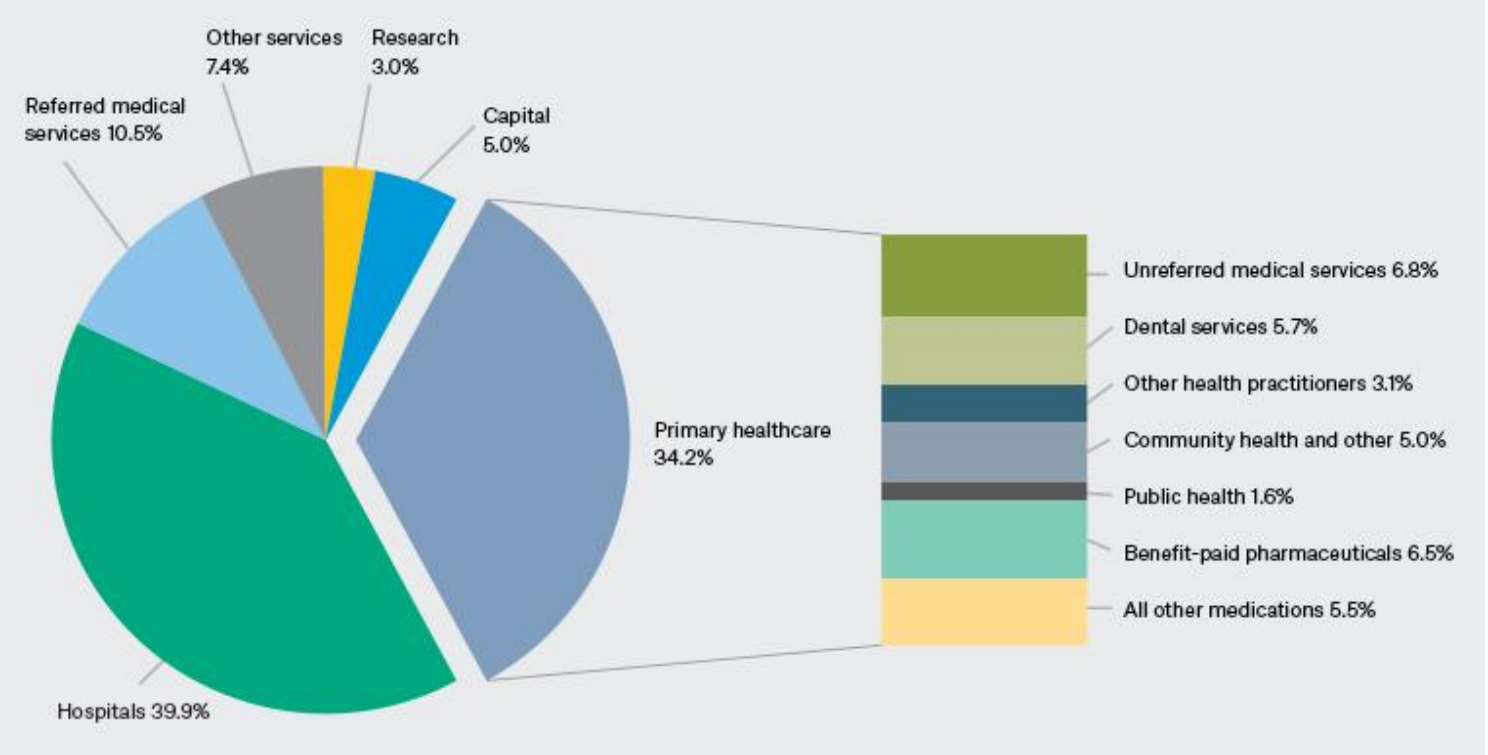
- Earn over ~$93,000/year with no private hospital cover?
- Pay an extra 1–1.5% in tax

🌍 International Students

- You may NOT be eligible for Medicare — depends on your country and a reciprocal agreement with Australia
- OSHC (Overseas Student Health Cover) is mandatory for your visa

Primary care

- Disease screening, management of acute problems, support for chronic illness, and health promotion
- GPs, allied health, nurses, pharmacists, paramedics…
- Paid primarily fee-for-service model
- Medicare rebates have not kept pace with wage growth
- GPs charging higher co-payments for non-bulk-billed payments
- Payment reform has attempted to introduce incentives for better care coordination



Classication of total health expenditure and breakdown of primary care spending. Source: Australian diture Australia 2017–18. Health and welfare expenditure series no. 65. Canberra, ACT: AIHW, 2019

Closing thoughts

Payment is not an end goal in health care – but neither should it stand in the way.

Understanding how incentives work for – or against – equity, efficiency, and quality can help scale and sustain digital solutions that work.

About Me

Health services researcher (PhD) and implementation scientist with a background in health promotion and occupational health

- Research Fellow at the Centre for Digital Transformation of Health

Some projects I have worked on in the past:

- Telehealth wellness program for long-haul truckers
- Implementation of UV disinfection robots in hospitals
- Telehealth pharmacy program for rural Veterans
- Usability testing of the Link-Me+ mental health care model

Debbie.passey@unimelb.edu.au

https://www.linkedin.com/in/debpassey



Digital Health Interventions

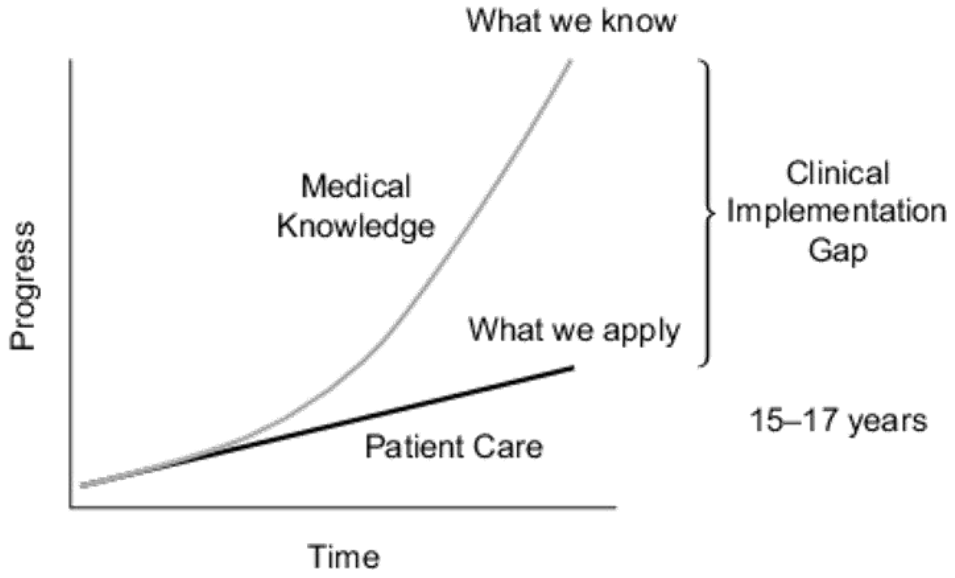
The intervention is the “the thing” you are implementing

Examples:
Mobile app aimed at improving medication adherence
Online mental health screening for patients booking an appointment with their GP
Perioperative frailty checklist embedded into EMR
AI-enabled radiology imaging aimed at improving diagnosis of lung disease

Research to Practice Gap

Gaps in the translation process

- Limited external validity of efficacy/effectiveness studies (i.e., what works well in one setting doesn't work well everywhere else)
- Quality gaps due to variations in organisational capacity
- Frontline providers have competing demands
- Misalignment with national or regional priorities



Overly optimistic?

Digital health technologies are often looked to as the answer to difficult questions in health care:

How do we contain costs while maintaining safety and quality?

How can we improve safety and quality while containing costs?

How do we make health services more accessible?

How do we provide timely, patient-centred care with limited resources?

Complexity is often overlooked when implementing digital health technologies

Ziebland S, Hyde E, Powell J. Power, paradox and pessimism: on the unintended consequences of digital health technologies in primary care. Soc Sci Med 2021; **289:** 114419.

Implementing Digital Health Interventions…

- Require a shift in work processes/flows to accommodate new digital health technology – within a complex health care system
- Have nonlinear, dynamic, and unpredictable interacting components within a health care system
- Require leadership/policymakers to make difficult decisions in complex situations and competing demands

Bottom line: Implementation is messy

Ziebland S, Hyde E, Powell J. Power, paradox and pessimism: on the unintended consequences of digital health technologies in primary care. Soc Sci Med 2021; **289:** 114419.

Factors Related to Successful Implementation

- Economic factors – time and cost
- Adoption by clinicians – design, customisability, workflow redesign
- Infrastructure and regulation – privacy / security, system reliability
- Structured implementation processes / Change management approaches
- For AI/ML: interpretable models, explainability, data transparency, need for continual feedback

Christodoulakis C, Asgarian A, Easterbrook S. Barriers to adoption of information technology in healthcare. In Proceedings of the 27th Annual International Conference on Computer Science and Software Engineering 2017 Nov 6 (pp. 66-75).
Yu KH, Kohane IS. Framing the challenges of artificial intelligence in medicine. BMJ quality & safety. 2019 Mar 1;28(3):238-41.

Implementation Science (on a page)

Engage stakeholders

Review & assess evidence

Fidelity & adaptation

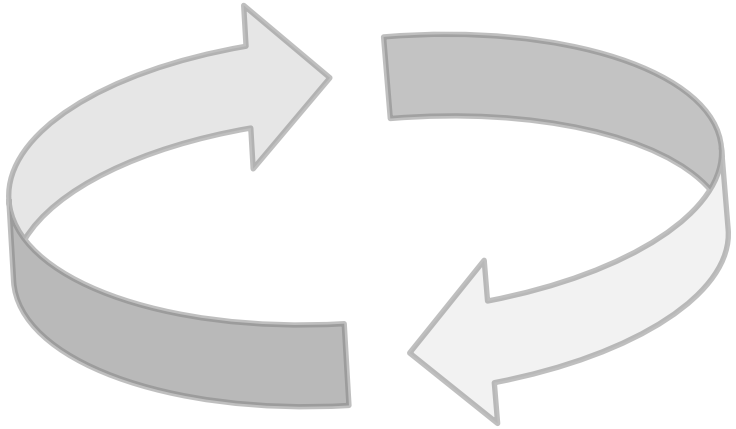
Use theories & frameworks

De-Implementing

Implement

Evaluate

Sustainment & scale-up



Engage Stakeholders → Relationships are important

Implementing digital health technology can disrupt relationships…

- **The *patient-provider relationship***: Shift in power dynamics when patients have more digital health knowledge, e.g., presenting and explaining an app to their GP
- ***Inter-professional power dynamics***: adopting video consultations without provider buy-in, e.g., decision to adopt technology by executive team who will not interact with the technology directly
- ***Patient demand***: Increased pressure for treatments (scant evidence of this), e.g., e-consultations increase antibiotic prescribing
- ***Help balance power*:** patient empowerment, ability to address issues that matter to the patient, e.g., apps to monitor symptoms, reminders to take meds

Ziebland S, Hyde E, Powell J. Power, paradox and pessimism: on the unintended consequences of digital health technologies in primary care. Soc Sci Med 2021; **289:** 114419.

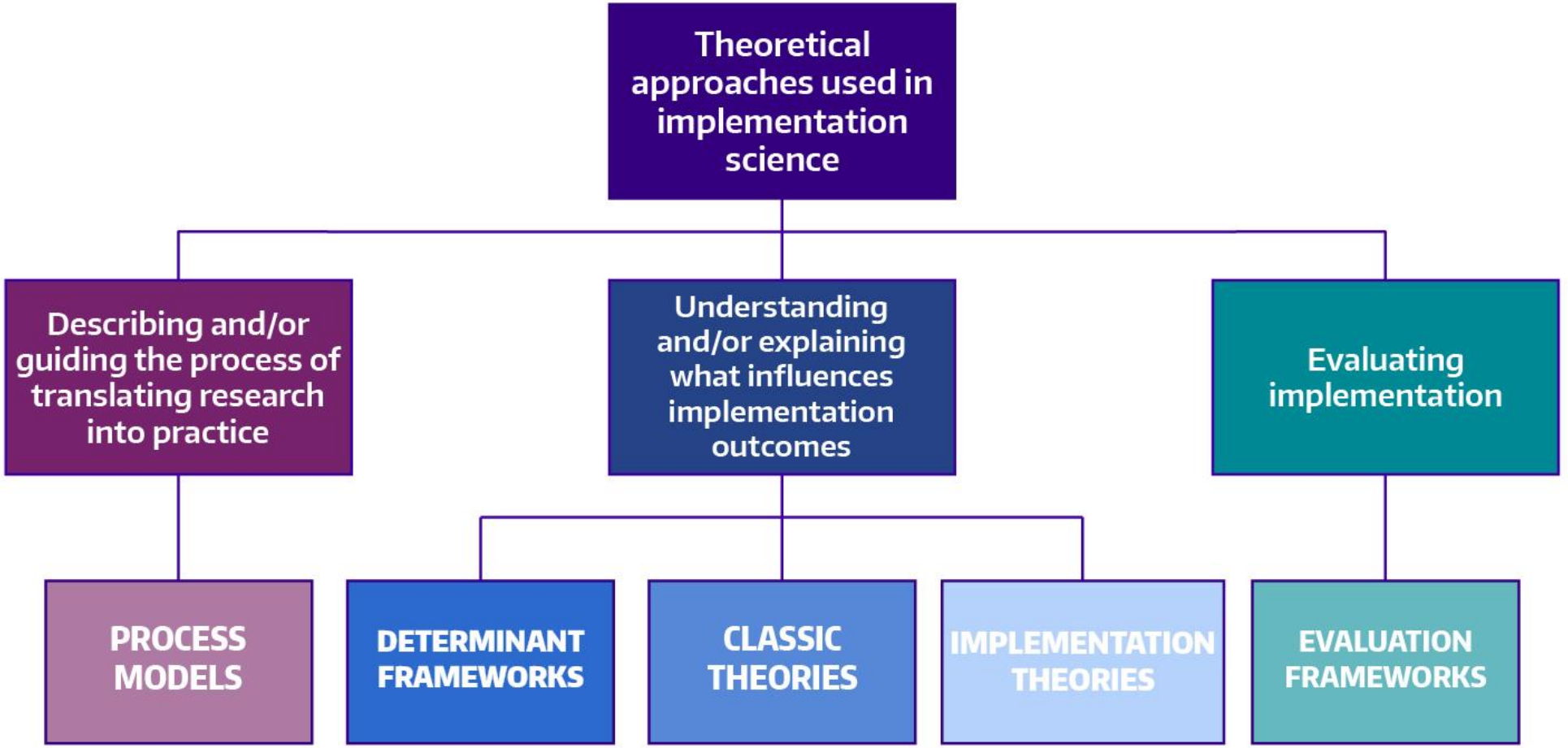
Use Theories, Frameworks, and Models

Theories, models, and frameworks are used to:

- Help formulate research questions
- Identify factors that influence the implementation process or outcomes
- Guide how you conceptualise the problem or behaviour change
- Understand the factors related to the problem
- Select implementation strategies
- Guide the overall research process

The choice of which TMFs to use for a given project depends on the purpose, aim, and overall goals – ask an implementation science expert for guidance

Types of Theories, Models, and Frameworks



Theoretical Domains Framework

Organizational Readiness for Change

Normalization Process Theory

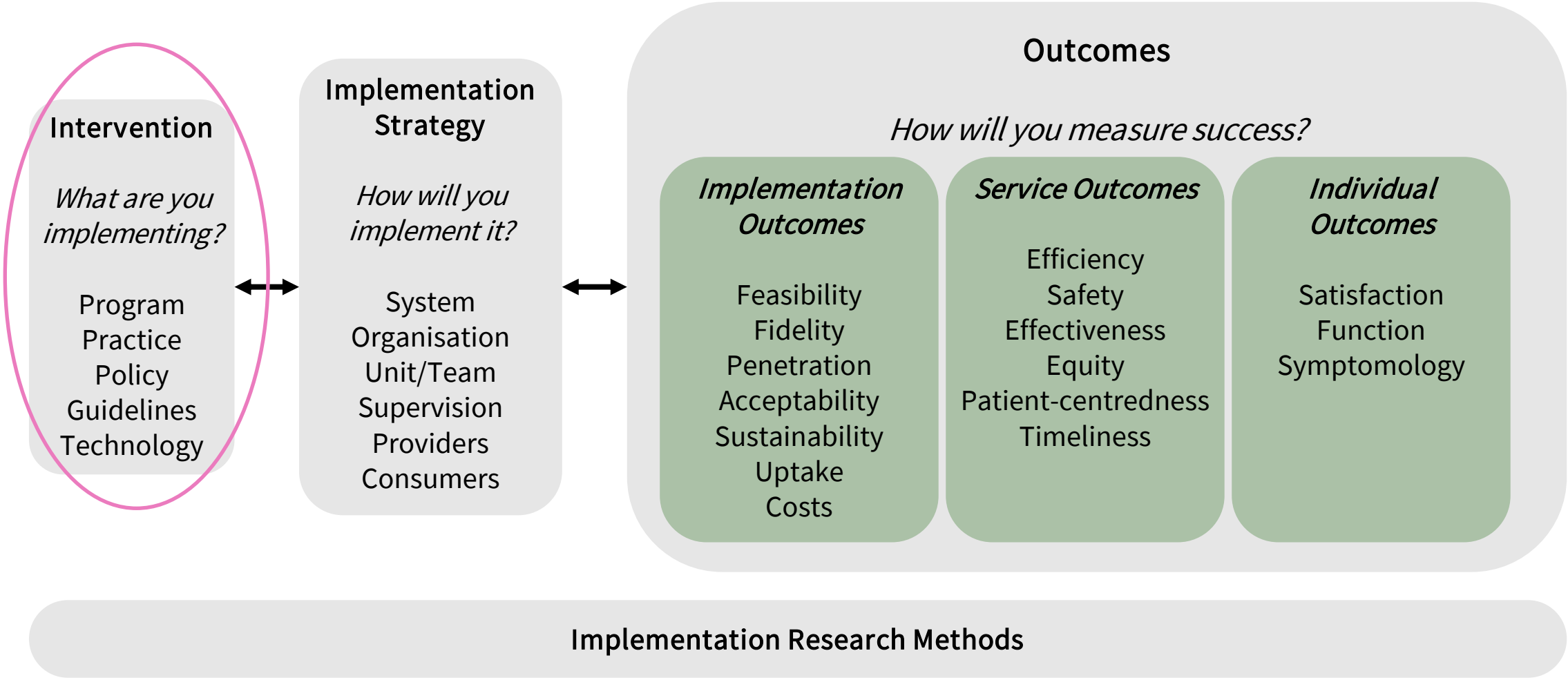
CFIR

Diffusion of Innovations

PRISM/RE-AIM

https://impsciuw.org/implementation-science/research/frameworks/

Roadmap for Implementation



Review and Assess Evidence

Is the intervention ready for implementation?

- Intervention fit with the user's demographics, needs, values, and risk factors
- Different interventions will take different amounts of money, labour, and time:
  - Does the organisation have the capacity and resources that is required to sustain use?
  - Does your team have the expertise to implement?
  - Can you engage partners or leverage other resources?
- Intervention solves an actual problem

While it is important for digital health interventions to be grounded in research and evidence, it will only be effective if it "fits" your population's needs and your resources

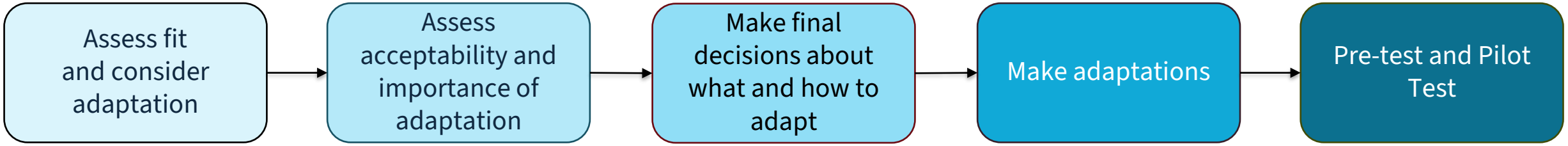
Fidelity & Adaptation

Maintain the fidelity of digital health interventions

Lack of fidelity to the original design or intent makes it difficult to know which version of the intervention was implemented and, therefore, what exactly caused the outcomes.

Adapt the digital health interventions to the local context

Interventions are not one size fits all. You may have to adapt them to better fit the population or local conditions.



Fidelity & Adaptation

Minor changes: Green Light

- Update information (statistics, health information, modelling)
- Tailor language, pictures, cultural indicators, scenarios, and content

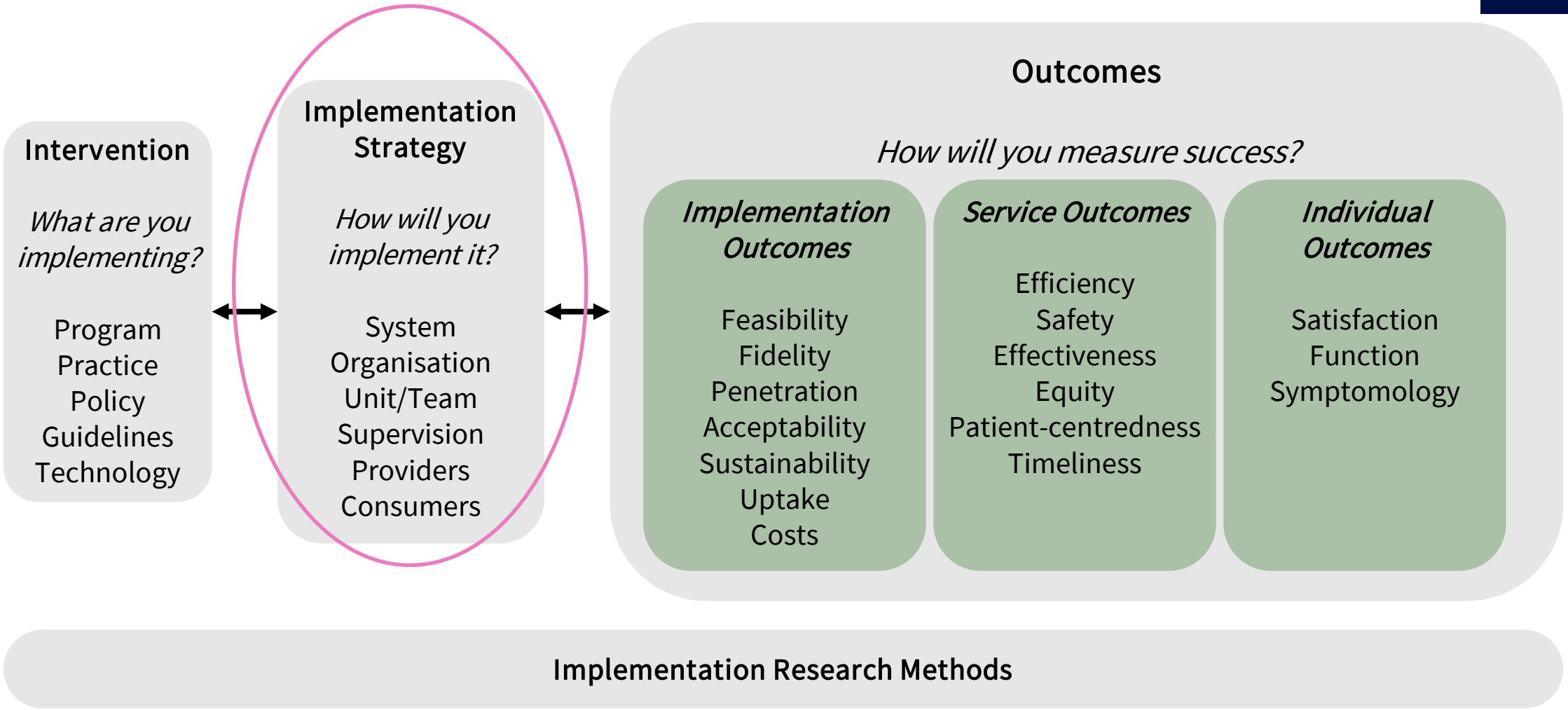
Moderate changes: Yellow Light

- Substituting / adding in activities or components
- Expanding the intended user population
- Changing delivery format and/or who delivers the intervention

Significant changes: Red Light

- Changing topic or behaviour change
- Removing components
- Cutting dosage or trimming timeline

Roadmap for Implementation



Implementation Strategy

The **implementation strategy** is how you will implement “the thing”

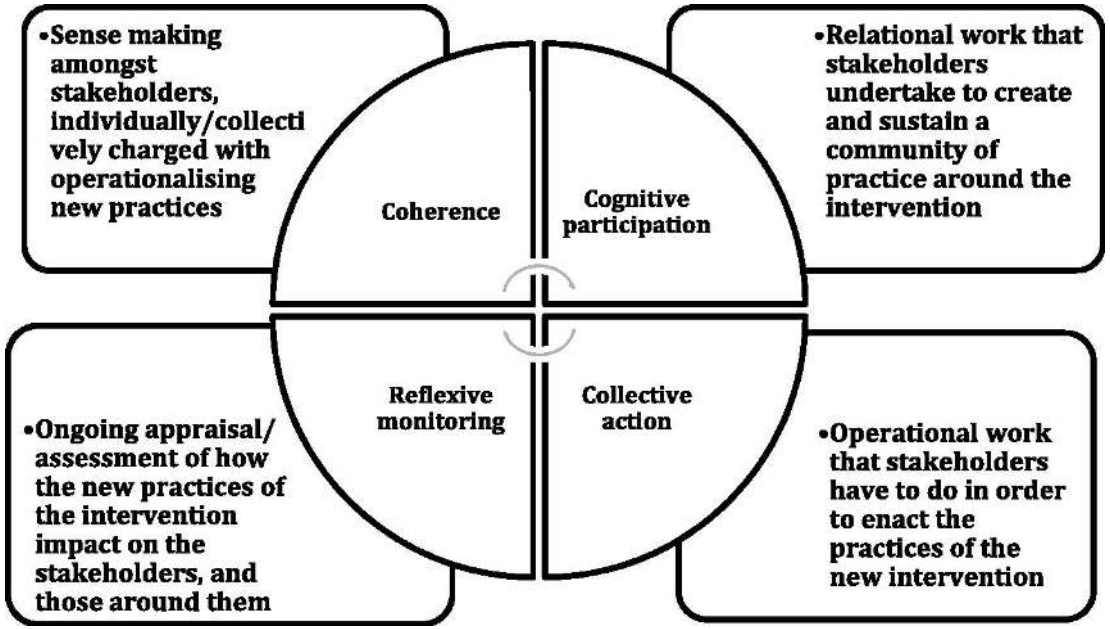
The focus is on improving **implementation outcomes**:

- Feasibility
- Fidelity
- Penetration
- Acceptability
- Sustainability
- Uptake
- Costs

Tip: *Some strategies build on one another, interact with one another, or require another strategy to be successful in order to be deployed*

Selecting Implementation Strategies

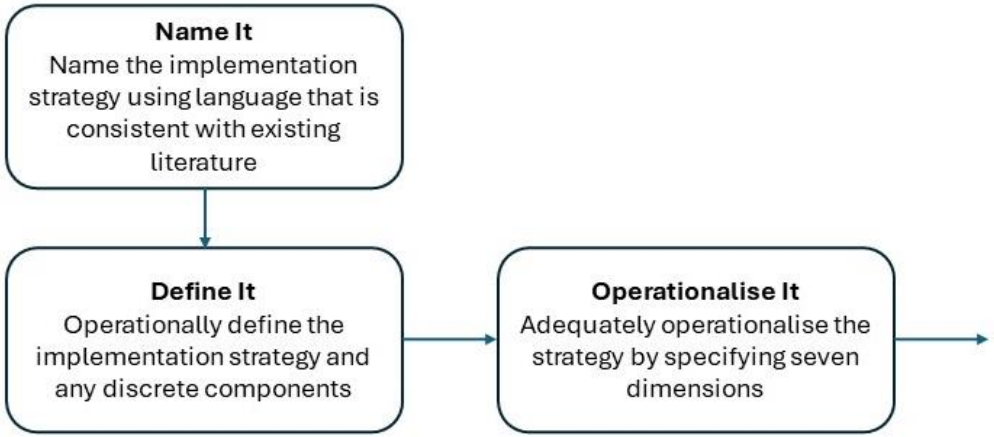
- **Frameworks, models, and theories**
- Feasibility (costs, resources)
- Literature reviews
- Qualitative methods
  - Key informant interviews
  - Stakeholder workshops
- Concept mapping and intervention mapping



Normalisation Process Theory

May CR, Hillis A, Albers B, Desveaux L, Gilbert A, Girling M, Kislov R, MacFarlane A, Mair FS, Potthoff S, Rapley T. Translational framework for implementation evaluation and research: implementation strategies derived from normalization process theory. Implementation Science. 2025 Jul 27;20(1):34.

Defining Implementation Strategies



The Actor
Identify who enacts the strategy (e.g., administrators, payers, providers, patients, advocates, etc

The Action
Use active verb statements to specify the specific actions, steps, or processes that need to be enacted

Action Target
Specify targets according to conceptual models. Identify unit of analysis for measuring implementation outcomes

Temporality
Specify when the strategy is used

Dose
Specify the frequency of the strategy

Implementation Outcome Affected
Identify and measure the implementation outcome(s) likely to be affected by the strategy

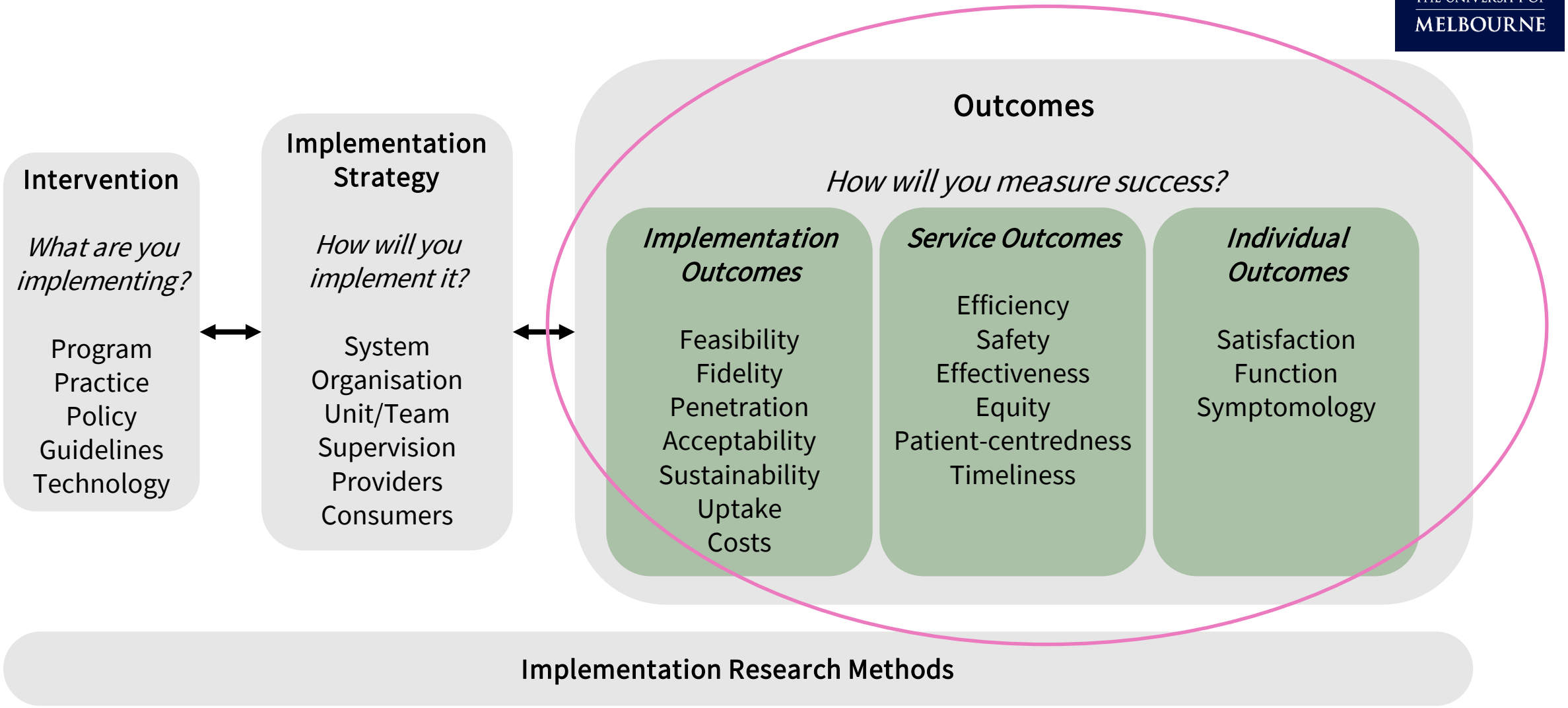
Justification
Provide empirical, theoretical, or pragmatic justification for the choice of implementation strategies

Proctor EK, Powell BJ, McMillen JC. Implementation strategies: recommendations for specifying and reporting. Implement Sci. 2013 Dec 1;8:139.

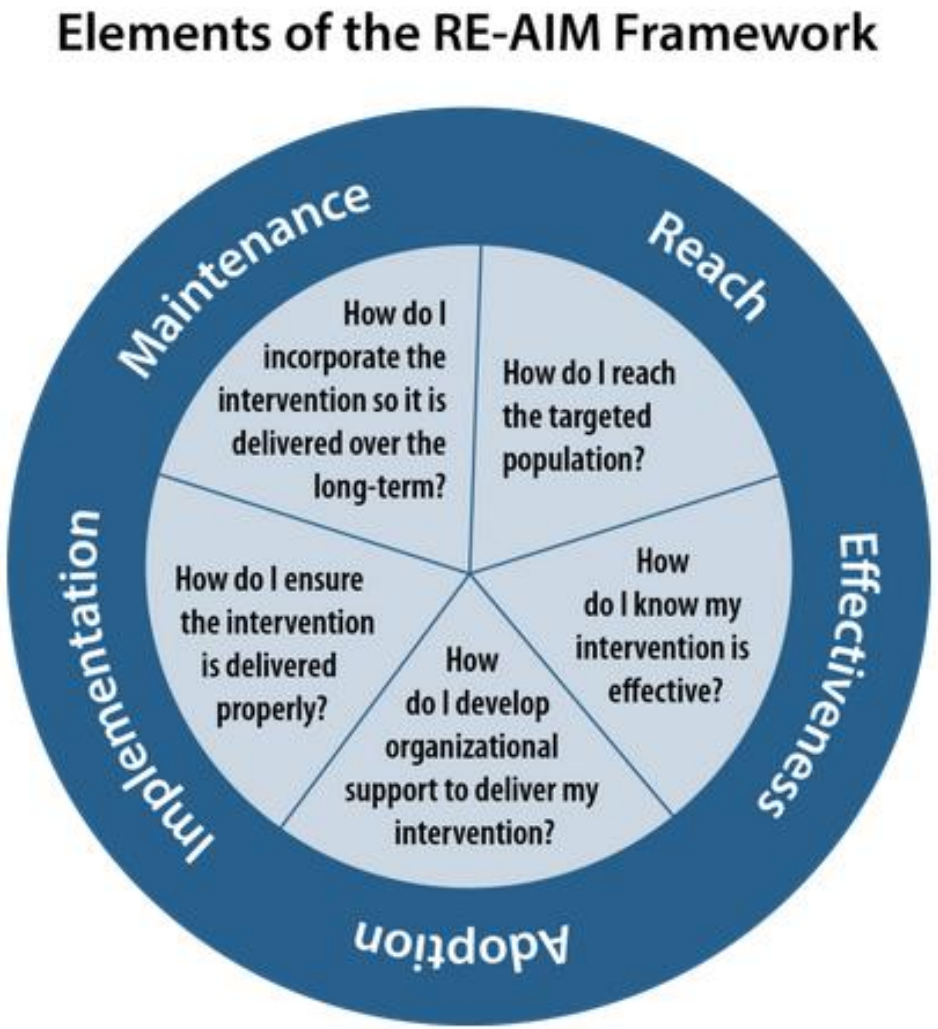
Tracking Implementation Strategies

Example Implementation Strategy	Potential Measures (Examples)
Use train-the-trainer strategies	Number of trainers, training sessions delivered
Access new funding (grant initiatives)	Number of grants (public, private) secured
Involve patients and consumers	Develop patient advisory committee, number of patient advisory meetings, reporting checklist (GRIPP2), incorporate into research team
Provide local technical assistance	Onsite technical lead – track the type of assistance provided, to who, and whether issues are resolved
Identify and prepare champions	Allocated FTE, number of resources dedicated to support champions

Roadmap for Implementation



Evaluation Framework



Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. American journal of public health. 1999 Sep;89(9):1322-7.

Implementation Outcomes

Implementation Outcome	Definition	Implementation Stage	How to Measure
Acceptability	*Perception among stakeholders that the innovation is agreeable to the user*	Early - adoption ; Ongoing – penetration; Late - sustainability	Survey, Interviews, Administrative data
Adoption	*Intention among stakeholders to use innovation*	Early	Administrative data Observation interviews Survey
Appropriateness	*Perceived fit of the innovation for a given setting/ population/problem*	Early (prior to adoption)	Survey, Interviews / Focus groups
Effectiveness	*Impact of innovation on important outcomes*	Mid to Late	Observation, Interviews
Feasibility	*Extent to which the innovation can be successfully used within a given setting*	Early (during adoption)	Surveys, Administrative data
Fidelity	*Degree to which innovation was implemented as intended by the program developers*	Early to Mid	Observation checklists Self-report
Implementation Costs	*Cost impact of an implementation effort*	Early - adoption /feasibility; Mid – penetration; Late - sustainability	Administrative data
Penetration	*Integration of innovation within a community, organization, or system*	Mid to Late	Program audits, Interviews
Sustainment	*Extent to which the innovation is maintained over time*	Late	Program audits, Interviews

Proctor E, Silmere H, Raghavan R, et al. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health*. 2011;38(2):65-76.

Service Outcomes

Service Outcome	Definition
Efficiency	*Avoiding waste, including waste of equipment, supplies, ideas, and energy.*
Safety	*Avoiding harm to patients from the care that is intended to help them*
Effectiveness	*Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and misuse, respectively).*
Equity	*Providing care that does not vary in quality because of personal characteristics such as geographic location and socioeconomic status.*
Patient-centredness	*Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.*
Timeliness	*Reducing waits and sometimes harmful delays for both those who receive and those who give care*

Proctor E, Silmere H, Raghavan R, et al. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health*. 2011;38(2):65-76.

Individual Outcomes

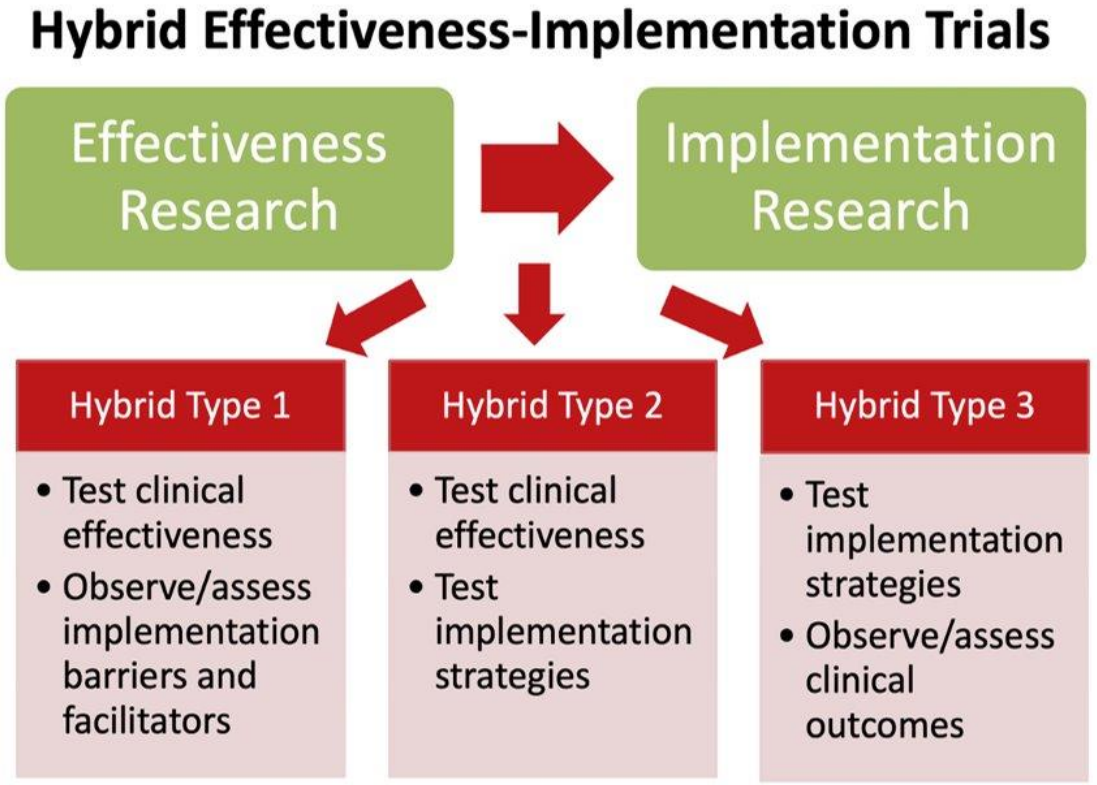
Individual Outcome	Definition
Satisfaction	*Measure of the extent to which an individual is content with the health care they received from their health care provider*
Function	*An individual's ability to perform daily activities, fulfill roles, and maintain well-being, encompassing physical, social, and cognitive aspects*
Symptomology	*Refers to the range of symptoms exhibited by an individual, which can vary based on the severity of infection or disease.*

Proctor E, Silmere H, Raghavan R, et al. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health*. 2011;38(2):65-76.

Evaluate – Implementation Science Study Designs

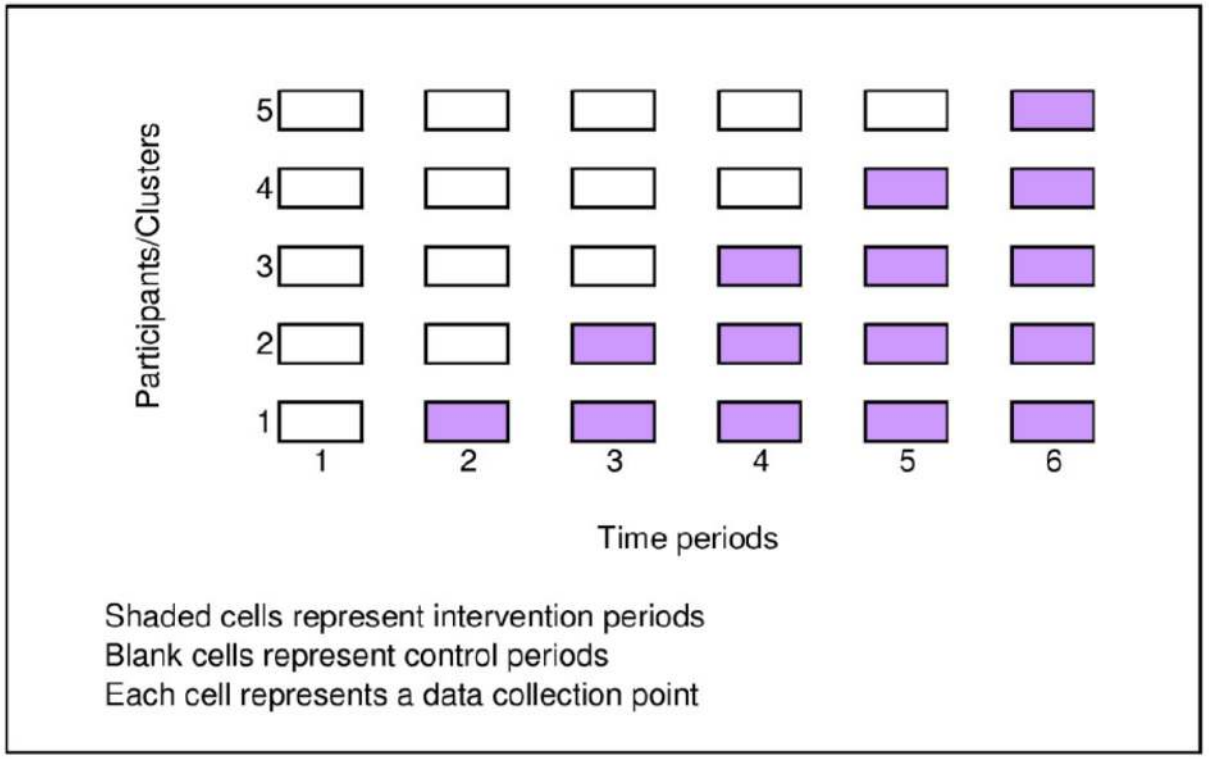
Common research designs used:

- Hybrid effectiveness-Implementation trial
- Stepped Wedge randomised trial
- Cluster randomised trial
- Interrupted time-series

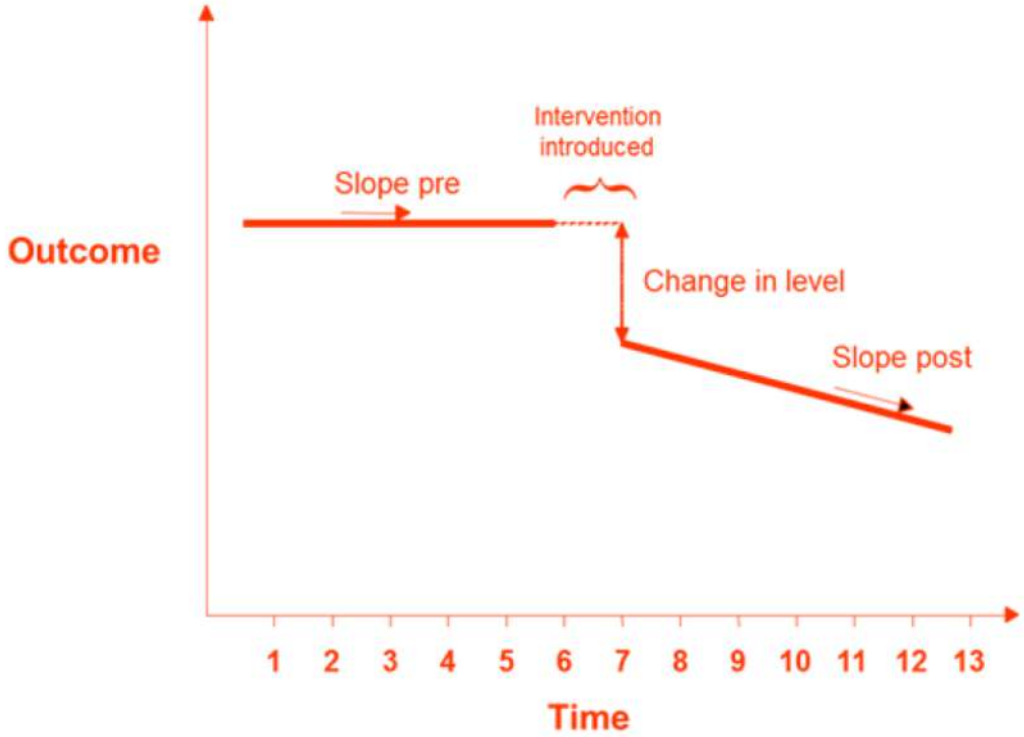


Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. Medical care. 2012 Mar 1;50(3):217-26.

Evaluate – Implementation Science Study Designs



Brown & Lilford (2006). The stepped wedge trial design: A systematic review. *BMC Med Res Method.*



Flodgren & Oddgard-Jensen for Effective Practice and Organization of Care (2013).

Practical Considerations

The ability to integrate into existing workflow is more important than innovation

- The best intervention that no one uses = worthless
- Compatible with current systems
- Amount of training and competency to use

Do not underestimate the value of relationships

- Champions: Early adopters should see immediate benefits
- Social Influence: Word-of-mouth is important
- Leadership: Resistance from key decision makers can make or break implementation

Useful Resources

- National Institutes of Health. (2019). *Implementation science at a glance: A Guide for Cancer Control Practitioners* (No. 19-CA-8055). U.S. Department of Health & Human Services. **https://thecenterforimplementation.com/toolbox/nci-implementation-science-at-a-glance**
- University of Washington Implementation Science - **https://impsciuw.org/implementation-science/learn/topics-in-implementation-science/**
- MACH Implementation Science Resource Directory - **https://machaustralia.org/resource/implementation/**

The Validitron

Collaboration pathways

- Informal advice, problem exploration, wayfinding, and mentoring, reflecting our ‘relationship first’ approach.
- Partner-led collaborative funding applications which leverage our complementary strengths.
- Partner-led, co-supervised PhD projects.
- Clinical simulation and Validitron consulting through fee for service and raise write-ins.
- Cross-referral and product bundling/co-tenders with complementary healthtech services.
- Co-design of long-lived technology demonstrators and clinical validation sandbox projects.

hello@validitron.com



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Survey for feedback