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The ACI prioritisation toolkit

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NSW GOVERNMENT

AGENCY FOR
CLINICAL
INNOVATION

Prioritisation

What do we mean by prioritisation?

> **prioritisation** *noun*
>
> The act of putting tasks, problems, etc. in order of importance,
> so that you can deal with the most important first.
>
> (Cambridge University Dictionary)

This document aims to guide prioritisation decisions such as:

- **What clinical issues should networks focus upon?**
  [Is there unwarranted clinical variation? Unmet need? Emerging innovations in care?]

- **What interventions are important to implement in the system?**
  [Do we need evidence-based clinical guidance? New organisational models of care? New technologies?]

- **What type of information product should ACI disseminate?**
  [written report? Infographic? Digital product? Toolkit?]

- **Which projects should receive financial support?** [Budget bids? Research grants?]

A wide variety of decisions need to be prioritised within ACI, and a single algorithm
or uniform process will not be suitable in all circumstances.

The design of an appropriate prioritisation approach for each case is shaped by the
nature of the decision to be made; goals and objectives; relevant stakeholders and
decision-makers; key criteria; and feedback mechanisms. These elements can be
worked through in four key stages, guided by a checklist (see page 7).
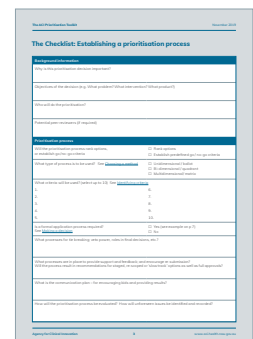
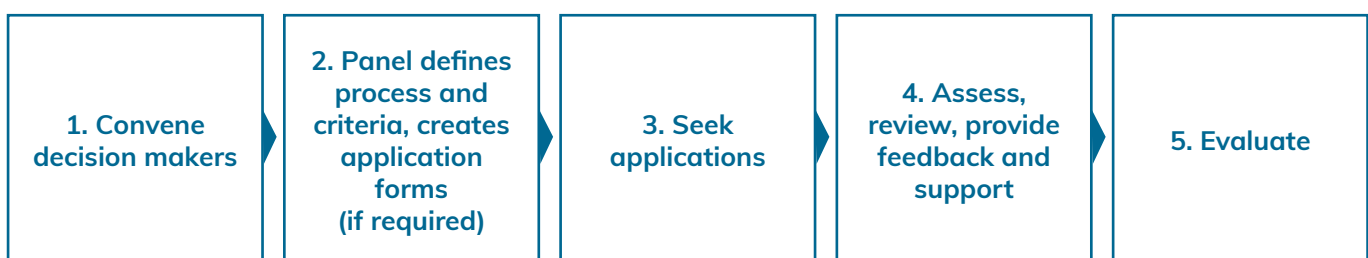| **Stage 1: Making a start**	Initiating a prioritisation process, this checklist outlines key question and considerations (see page 2)
Stage 2: Choosing a method	Method selection is informed by the level of detail and time required, rigour and complexity (see page 4)
Stage 3: Identifying criteria	Decision-makers come together to agree the key elements that are important to consider in making choices between options (see page 5)
Stage 4: Making a decision	Developing scoring grids, rules of arbitration, and feedback processes (see page 6)

Stage 1: Making a start

There are five foundation questions that clarify the role of a prioritisation process:

Foundation questions for a prioritisation process

What are we prioritising?	We prioritise to guide effort and action. The prioritisation process can focus on issues, interventions, outputs or projects.
Why are we prioritising?	We prioritise to maximise our impact, use resources effectively; to communicate what's important; to be fair and transparent; and to provide support and feedback that encourages revision.
Who is prioritising?	We generally convene a panel to design the specific prioritisation process and define criteria - drawing on the knowledge and expertise of different decision-makers. The prioritisation process is tailored according to whether decisions are at the team / network / directorate / ACI level.
How will we prioritise?	We use methods and approaches that are evidence-based, proportionate and rigorous. Two crucial steps in the process are the definition of clear decision criteria; and the selection of a scoring tool based on the number of criteria, and the complexity and importance of the decision. For relatively simple decisions, single criterion e.g. score on quality (marks out of 10) – use uni-dimensional tools (ballot, dotmocracy, Sli.do). Where there are: • two clear criteria or constructs e.g. importance and urgency – use bi-dimensional tools (quadrant). • multiple criteria, complex issues, or the need for transparency e.g. projects to support – use multi-dimensional tools (matrix).
When do we prioritise?	We use prioritisation for decisions with multiple, competing options, significant investment of effort, time or funds; or multiple key stakeholders with different perspectives. Prioritisation is not mandatory but is encouraged.

1. Convene decision makers ▶ **2. Panel defines process and criteria, creates application forms (if required)** ▶ **3. Seek applications** ▶ **4. Assess, review, provide feedback and support** ▶ **5. Evaluate**

For high profile decisions, external peer reviewers can provide independent insight and advice.

The Checklist: Establishing a prioritisation process

Background information
Why is this prioritisation decision important?
Objectives of the decision (e.g. What issue? What intervention? What product?)
Who will do the prioritisation?
Potential peer reviewers (if required)

Prioritisation process (to be completed by decision-makers for each prioritisation process)	
Will the prioritisation process rank options, or establish go/no-go criteria	☐ Rank options ☐ Establish predefined go / no-go criteria
What type of process is to be used? See Choosing a method	☐ Unidimensional / ballot ☐ Bi-dimensional / quadrant ☐ Multidimensional / matrix
What criteria will be used? (select up to 10) See Identifying criteria 1. 2. 3. 4. 5.	6. 7. 8. 9. 10.
Is a formal application process required? See Making a decision	☐ Yes (see example on page 8) ☐ No
What processes are needed for tie breaking; veto power, roles in final decisions, etc.?	
What processes are in place to provide support and feedback; and encourage re-submission? Will the process result in recommendations for staged, re-scoped or 'slow track' options as well as full approvals?	
What is the communication plan – for encouraging bids and providing results?	
How will the prioritisation process be evaluated? How will unforeseen issues be identified and recorded?	

Note: The Evidence Generation and Dissemination team can help identify and define criteria, create scoring grids, and advise on arbitration and feedback processes.

Stage 2: Choosing a method

Uni-dimensional

Single criterion approaches include 'first past the post voting' using paper or show of hands, 'dotmocracy', and technology based preference tools.

Dotmocracy

In its simplest form, participants are provided with one to three dots (usually stickers) and place a dot beside their top one to three options. It is a voting technique that:

- works well in large groups (20-30 participants) in situations seeking a quick read of the group; and an analytical ranking process is not required

- requires clarity around:

  - the specific process (how many dots each?, e.g. three green dots for supported; unlimited red dots for not supported; etc)

  - finalising the decision after dots are posted (top score; top three, etc.)
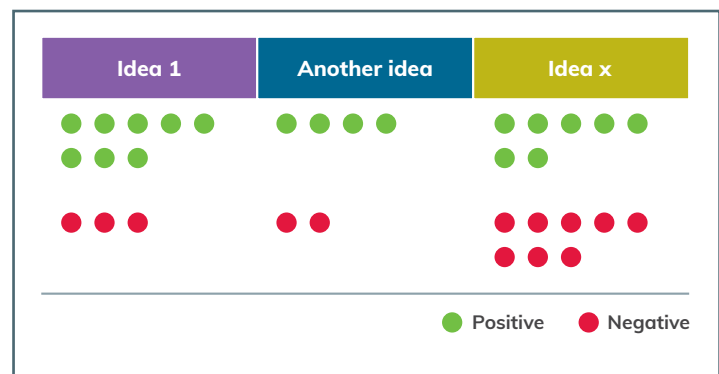

Technology-based tools such as Sli.do and Group Map

Provide real time feedback, and are suitable for multi-round voting or consensus building. Questions and the response options (multiple choice/ ranking / free text) are preloaded into the software and decision makers vote using their devices. Results are available in real time.

These tools:

- work well in larger groups

- provide automatic real-time collation, summaries and result storage.
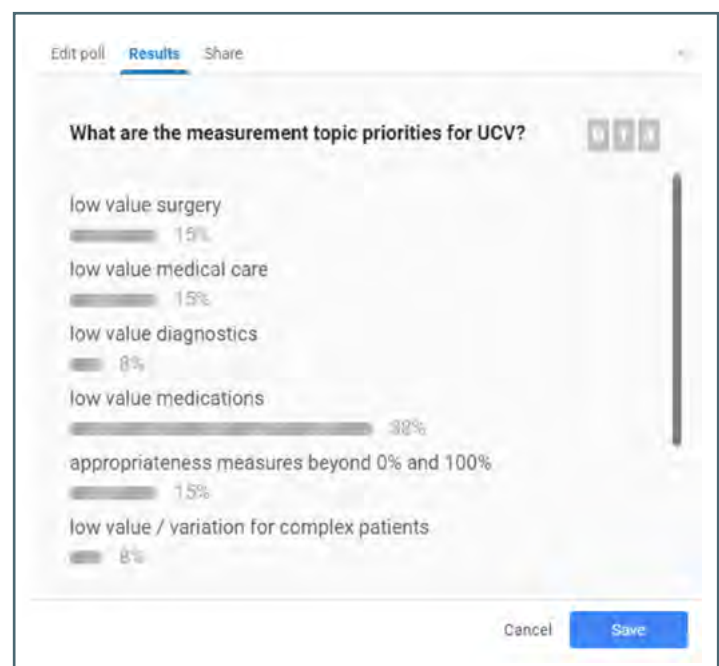
Bi-dimensional

Dual criteria allow for two key considerations to be assessed simultaneously. Examples include quadrant analysis and paired comparisons.

Quadrant analysis

Useful when there are two clear criteria upon which to make a decision (for example, importance and urgency), and those two criteria can be quantified or qualified in a dichotomous way (for example, high versus low).

Quadrant analysis:

- allows for two criteria; and so broad categories may need to be further prioritised in resource limited situations
- can use a range of criteria pairs, including:
  – importance / urgency
  – cost / benefit
  – ability to influence / potential impact

Multi-dimensional

Multidimensional prioitisation **can be assessed using a decision matrix** (also referred to as grid analysis, Pugh matrix analysis and MAUT (Multi-attribute utility theory). Decision matrices are particularly useful when decisions need to be transparent and supported with ample evidence.

A customisable excel spreadsheet can support criteria selection and set thresholds for formal prioritisation processes.

The main stages of the process are:

- Decision-makers agree specific criteria and assign weights.
- Score options using the matrix
- Discussion to confirm decisions; and explore ways to support resubmission
- Produce summary review of final recommendations, and next steps

Criteria	Project 1	Project 2	Project 3	Project 4	Project 5
Prevalence (10)	5	2	8	7	9
Evidence-based (20)	2	15	16	12	9
Actionability (30)	30	25	25	15	10
Feasibility (20)	10	12	12	14	16
ACI priority (40)	40	0	0	40	0
Network received no bids in past 3 years (20)	0	0	0	0	20
TOTAL (140)	87	54	61	88	64

Stage 3: Identifying criteria

In complex decisions, a range of criteria and perspectives are required. The process of determining specific criteria can be supported by the use of 'criteria buckets'.

Buckets are a way of clustering the key elements of a decision. Decision makers can undertake an initial screen to determine which buckets are relevant for the prioritisation task at hand.

Prioritisation criteria classes or 'buckets'

1. Condition / clinical impact	2. Technology / innovation	3. Value proposition
• Prevalence • Comorbidity cluster • Impact on quality of life (QOL)	• Level of evidence • Actionability • Feasibility • Scaleability • Sustainability • Affordability	• Potential health gain • Potential for improvement in a performance domain* • Cost / Business case / ROI • Potential for innovation • Potential for knowledge generation • Potential risks
4. End users / audience	5. Organisation factors	6. Wider system factors
• Evidence of demand / readiness for change • Attitudes and responsiveness Is the proposal: • Clinician-led • Patient focused	Fit with organisational context – does it: • Leverage ACI strengths • Align with ACI priorities • Meet network goals • Enhance equity across networks • Offer learning opportunity • Support culture change	• System priority • Engage stakeholders – build partnerships and goodwill • Future focused • Considers wider determinants of health • Potential to shape state, national and international agendas

Criteria class definitions:

1. **Condition / clinical impact** – the disease or patient group of interest (e.g. stroke, diabetes, frail older patients)

2. **Technology / innovation** – the new practice, new way of working, new process, product

3. **Value proposition** –the potential gains that could accrue (e.g. estimated improvement in ICU exit block)

4. **End users / audience** – characteristics of the key audience (e.g. staff feedback on need for process changes)

5. **Organisation** – elements of organisational context (ACI / network for some; hospitals / LHDs for others) (e.g. supports learning organisation)

6. **Wider system** – the potential impact on stakeholders and broader system context (e.g. aligns with work on vulnerable populations).

* Key performance domains are accessibility, appropriateness, effectiveness, efficiency, equity and sustainability

Some buckets are more relevant or have a greater ability to discriminate for particular types of decisions. The heatmap below provides guidance about where key criteria should be drawn from.

Key

- ● **Essential** – decision makers should always consider
- ● **Important** – one or more aspects should usually be considered
- ○ **Relevant in some circumstances** – decision-makers may want to consider
- ○ **Not usually considered in prioritising** – either non applicable OR essential

	Issues *Network projects*	Interventions *Clinical guides; new models of care; new technologies*	Dissemination formats *Written reports, digital products, toolkits*	Invest *Budget bids; research grants*
Disease / condition Prevalence, Burden of disease, Quality of life	●	●	○	●
Technology /innovation Existing evidence, Actionability, Feasibility, Scaleability, Sustainability, Affordability	●	●	○	●
Value proposition Potential for gains in equity, accessibility, appropriateness, effectiveness, efficiency, or sustainability; Cost/return on investment; Knowledge generation; Potential risks	●	○	○	●
End users Evidence of demand readiness for change, Demonstrate patient involvement, Demonstrate clinical leadership	○	●	●	○
Organisational factors Demonstrate alignment with ACI priorities, Enhance equity across networks, Meet network goals	●	○	○	○
Wider system factors Demonstrate alignment with system priorities, Strengthens stakeholder engagement, Future focused	○	○	○	●

Stage 4: Making a decision
Case example matrix – budget bids ACI

In this hypothetical example, the ACI Executive are the decision-makers and have determined that prevalence, level of evidence, feasibility, potential impact on outcomes, alignment with ACI priorities, and equity of opportunity across networks are the key criteria (see scoring guide below). These criteria would be distributed to networks four weeks prior to calls for budget bids. Details regarding the nominated project are outlined in a decision-specific pro forma (see page 8).

HYPOTHETICAL PRIORITISATION MATRIX: BUDGET BIDS – ACI 2020
Applicant details
Nomination lead
Clinical lead
Nominated project
Length of project
Funding and support required

SCORING GUIDE			
Prioritisation process	**Considerations**	**Score**	**Score descriptor**
Prevalence / burden of illness (double score for evidence / clinical guides proposals)	The burden of illness of the target condition the proposal applies to	3	Significant burden of illness
		2	Average burden of illness
		1	Less significant burden of illness
Level of evidence (for innovation proposals)	Current level of evidence for the innovation / new approach	3	High – strong peer reviewed literature supporting proposed innovation / experiential evidence supportive
		2	Moderate – weaker study designs and some risk of bias in peer reviewed literature; either supportive or mixed experiential evidence
		1	Low – weak or no evidence from peer review literature or experiential evidence
Feasibility	The proposed work has a realistic chance of resolving the underlying issue it seeks to address	3	High – strong possibility that change and innovation will occur
		2	Moderate – may result in meaningful change
		1	Low – unlikely to result in meaningful change
Potential impact on outcomes	The proposed work will affect patient outcomes	3	Clear link between proposed work and patient outcomes
		2	Some effect on patient outcomes
		1	Little or no effect on patient outcomes likely
Alignment with ACI priorities	The proposal is clearly and explicitly linked to ACI priorities	2	Clear link articulated
		1	Link to ACI priorities is weak or ill-defined
		0	No link drawn
Equity of opportunity across networks	Support is provided for networks with historical under-funding	3	No successful budget bids for this network in past five years
		0	Successful budget bids for this network in past five years

HYPOTHETICAL APPLICATION FORM: BUDGET BIDS – ACI 2020

Applicant

Project name

PLEASE DESCRIBE FOR THE PROPOSED WORK:

Why is this project needed?

What are the anticipated outputs and outcomes?

What evidence is available to support this proposal?

What approach or method will be used?

What are the resource requirements for the work?

How does the work fit with network, ACI and system priorities?

What are the risks to the work? How will they be managed?

What is the team / network's track record in securing project funding / budget bids?

Other examples of prioritisation processes used in healthcare

Prioritisation processes are used in a wide range of contexts – including procurement, resource allocation and investment.

Methods used in from public health priority setting and health technology assessment contexts are particularly relevant to ACI decision-making.

Public health priority setting

Widely cited within the public health literature, the Hanlon method is based on a structured assessment of health needs, and the prioritisation of initiatives to meet those needs through the application of weighted criteria, using the formula

$(A+B) C \times D$ where:

- A is the magnitude of the problem;
- B is the seriousness of the problem
- C is the effectiveness of the solution
- D is the feasibility of intervention, as determined by PEARL test which assesses pertinence, economic feasibility, acceptability, resources, and legality.

The Hanlon method for public health priority setting

Rating	Size of health problem (e.g. % of population with problem)	Seriousness of health problem	Effectiveness of interventions
9 or 10		Very serious (e.g. HIV/AIDS)	80 – 90% effective (e.g. vaccination program)
7 or 8	>25%	Relatively serious	60 – 80% effective
5 or 6	10.0 – 24.9%	Serious	40 – 60% effective
3 or 4	1.0 – 9.9%	Moderately serious	20 - 40% effective
1 or 2	0,1 – 0.9%	Relatively not serious	5 – 20% effective
0	<0.01%	Not serious (teenage acne)	< 5% effective

The 'PEARL' Test is used either to score or to screen out options using five feasibility factors:

- **Pertinence** – Is it relevant to intervene in the problem, is the intervention appropriate?
- **Economics** – Does it make economic sense to address the problem?
  Are there economic consequences if a problem is not carried out?
- **Acceptability** – Will a community accept the intervention? Is it wanted?
- **Resources** – Is funding available or potentially available? Is it affordable?
- **Legality** – Do current laws allow program activities to be implemented?

Each proposal has the PEARL factors scored - either 0 for unfeasible or 1 for feasible.
Attributing 0 to any factor renders the approach / initiative unfeasible.

Health Technology Assessment (HTA) priority setting

Health Technology Assessment is a formal process that informs evidence-informed decision-making about health policy and purchasing, service management, and clinical practice. The process uses rigorous evidence-based approaches to make clear, consistent recommendations about clinical and cost effectiveness of prescription drugs, diagnostic tests, and surgical, medical, or dental devices and procedures.

Prioritisation process can be used to guide:

1. topic selection for consideration and full clinical and cost effectiveness assessment
2. introduction of technologies into systems

Topic selection for HTA: Canadian Agency for Drugs and Technologies in Health (CADTH)

In Canada, HTAs are carried out by a multidisciplinary team of researchers tailored to the nature of the project. All are peer-reviewed by external clinical, economic, and methodological experts. The criteria used for topic selection is shown below.

Health technology assessment topic prioritisation grid (CADTH)

Criterion	Definition and weight	Score	Score definition
Clinical impact	Potential for the technology to have an impact on patient-related health outcomes (benefits and harms). 25 (weight)	3	Major potential improvement in clinical outcomes
		2	Moderated potential improvement in clinical outcomes
		1	Little potential improvement in clinical outcomes
		0	No expected change in clinical outcomes
Budget impact	Impact of the technology on health care spending. 25 (weight)	3	Major cost savings or expense (>$50m)
		2	Moderate cost savings or expense ($10m - $50m)
		1	Limited cost savings or expense (($1m – 10m)
		0	No cost savings or expense (<$1m)
Population impact	The size of the population that would be affected by the technology. 20 (weight)	3	Affects >5%
		2	Affects 1% - 5%
		1	Affects 0.05% - 1%
		0	Affects <0.05%
Jurisdictional interest	The number of provincial, federal entities or programs that would use the HTA to inform decisions. 20 (weight)	3	Interest from ≥7 jurisdictions
		2	Interest from 5 or 6 jurisdictions
		1	Interest from 2 to 4 jurisdictions
		0	Interest from <2 jurisdictions
Equity	The technology has the potential to introduce, increase or decrease equity in health status. 15 (weight)	3	Major potential to affect equity in health status
		2	Moderate potential to affect equity in health status
		1	Minor potential to affect equity in health status
		0	Will not affect equity in health status

Within HTA programs, a separate process can be used to assist in the prioritisation of nomination technologies for further consideration. The NSW Health Technology and Specialised Services Strategic Forum uses a Prioritisation and Assessment Matrix to guide decisions about the introduction of new health technologies.

NSW Health prioritisation framework for new health technologies and specialised services

Principle	Definition / considerations	Circle	Score descriptor
Clinical need	The burden of illness of the target condition the technology applies to e.g. incidence, prevalence years of life lost. Availability of alternatives to treat the nominated condition	3	Significant burden of illness, limited availability of alternate therapies / diagnostics
		2	Average burden of illness, some alternative therapies / diagnostics available but not optimal (e.g. significant side effects, inpatient therapy vs outpatient)
		1	Less significant burden of illness, other clinically and cost effective therapies and diagnostics available
Materiality	The technology has the potential to make a material impact or significant different in outcomes for the health system, the health service provider and the patient outcomes and experience	3	High likelihood of material benefit in outcomes across the system and / or patient outcomes and experience
		2	Average material benefit in outcomes across the system and / or patient outcomes and experience
		1	Limited likelihood of material benefit in outcomes across the system and / or patient outcomes and experience
Economic feasibility	Likely level of investment (i.e. managed within existing LHD resourcing or requiring investment from Ministry)	3	Likely to require Ministry and other investment e.g. Commonwealth
		2	Likely to require Ministry investment / resourcing
		1	Likely to be managed from within existing LHD / SHN resourcing
Equity	Statewide purchasing approach through the public hospital system necessary for equity of access for the target population	3	Likely to be a highly specialised service in limited locations providing equitable access
		2	Time-limited Ministry planning may benefit equity of access
		1	Technology likely to broadly diffuse in the system via local planning and clinical decision-making 1
Level of evidence	Current level of evidence for the technology. Assessed according to the population available and the level of experience using the technology	3	High. Evidence provided is of high quality and with low risk of bias. Very confident that clinical claims are supported
		2	Moderate. Evidence provided is of moderate quality with some risk of bias. Moderately confident that clinical claims are supported
		1	Low. Evidence provided is of low quality with high risk of bias. Limited confidence that clinical claims are supported
		0.5	Very low. Quality of evidence is insufficient to support clinical claims
Policy congruence	The technology is consistent with government priorities, Ministry priorities and / or NSW Health policy directives or guidelines	3	Aligns with government, Ministry and/ or NSW Health policy and / or priorities
		2	Aligns with government / Ministry priorities, change in NSW Health policy may be required to accommodate the technology
		1	Not aligned with government, Ministry and/ or NSW Health policy and / or priorities

The Agency for Clinical Innovation (ACI) is the lead agency for innovation in clinical care.

We bring consumers, clinicians and healthcare managers together to support the design, assessment and implementation of clinical innovations across the NSW public health system to change the way that care is delivered.

The ACI's clinical networks, institutes and taskforces are chaired by senior clinicians and consumers who have a keen interest and track record in innovative clinical care.

We also work closely with the Ministry of Health and the four other pillars of NSW Health to pilot, scale and spread solutions to healthcare system-wide challenges. We seek to improve the care and outcomes for patients by re-designing and transforming the NSW public health system.

Our innovations are:

- person-centred
- clinically-led
- evidence-based
- value-driven.

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Our vision is to create the future of healthcare, and healthier futures for the people of NSW.