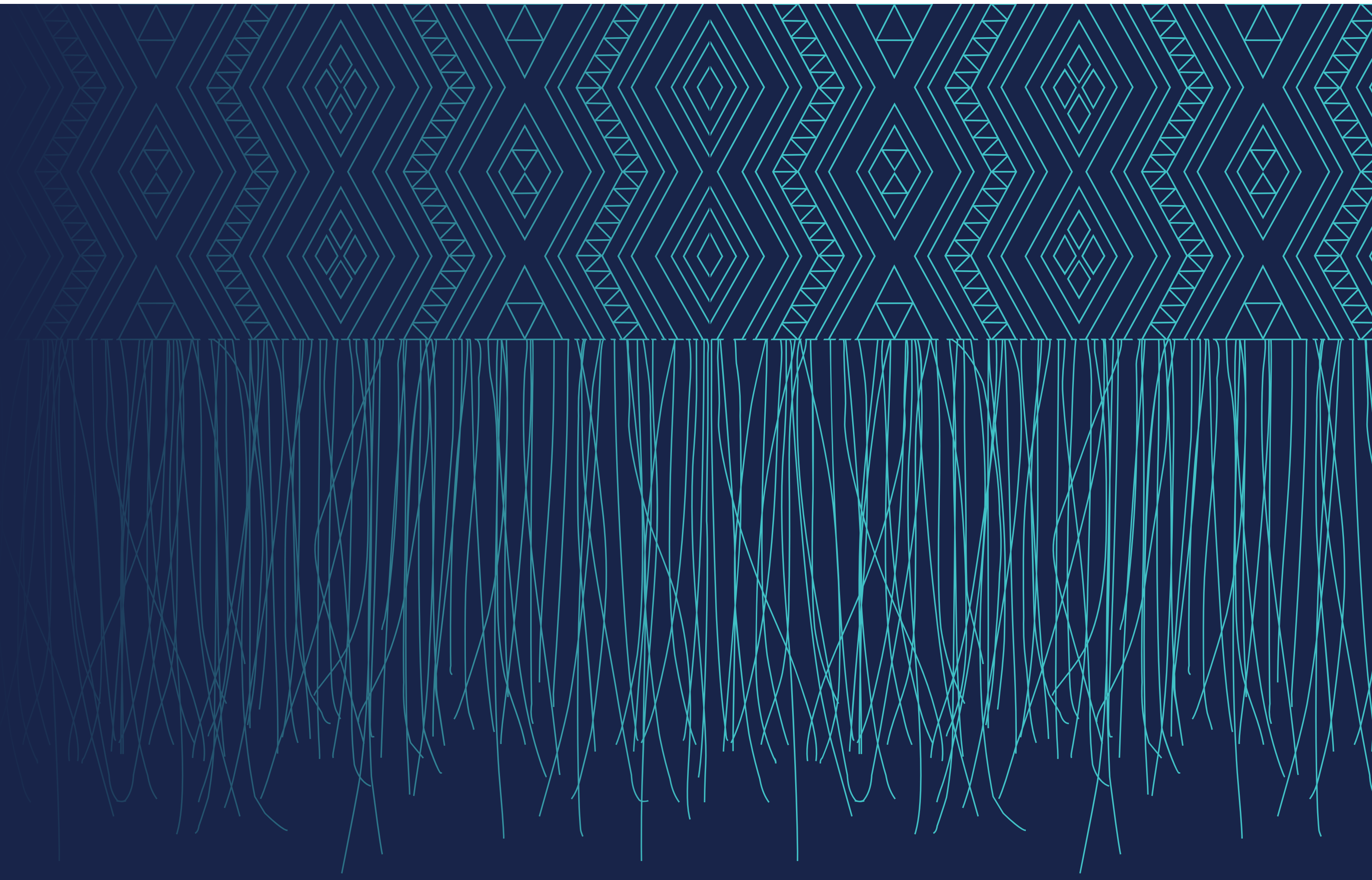
Health New Zealand
Te Whatu Ora

Evaluation of two tools used for waitlist prioritisation for planned care in Health New Zealand – Te Whatu Ora

Appendix 3: Explicit priority-setting in Aotearoa New Zealand: An overview

March 2024



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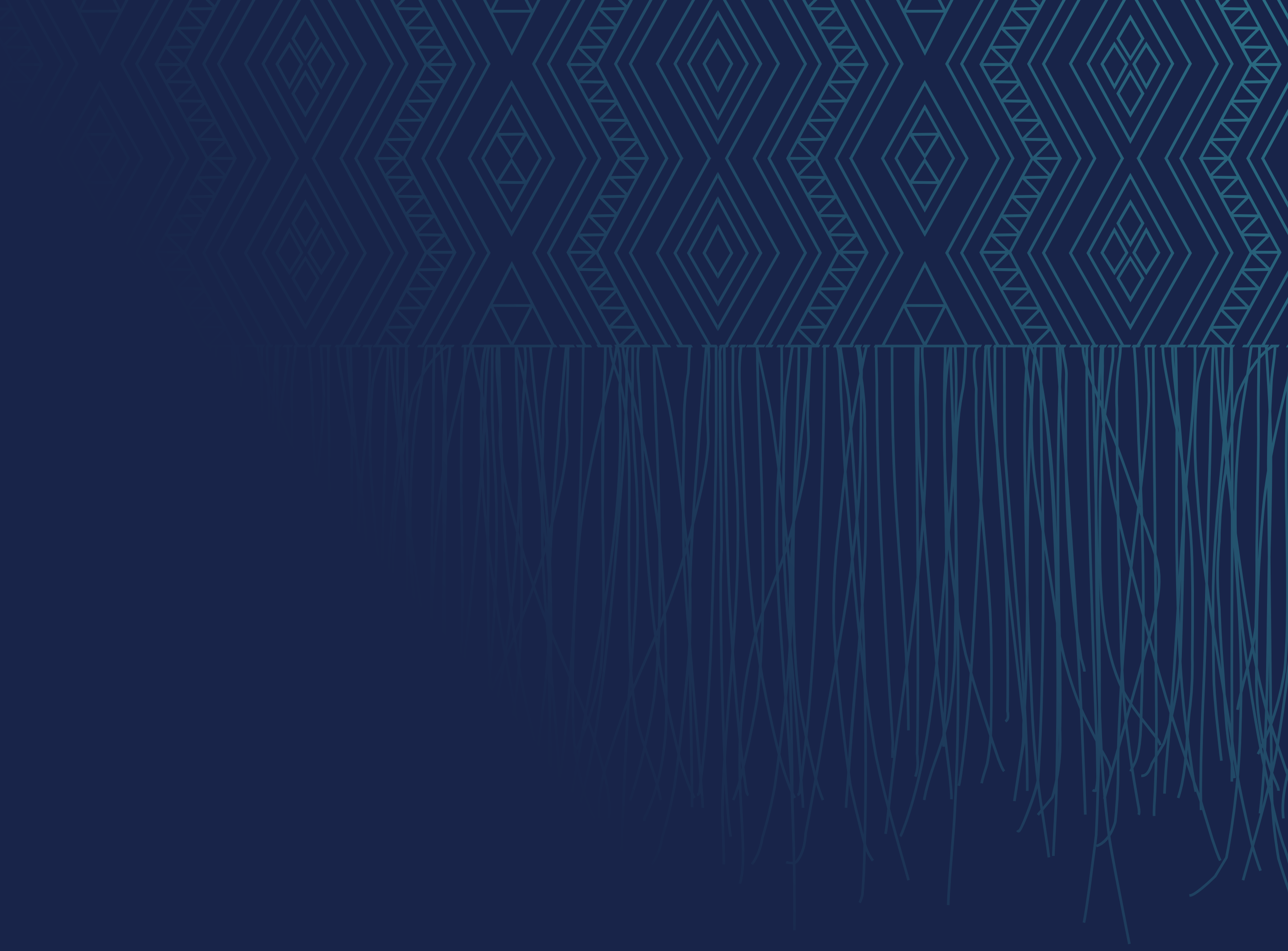

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Disclaimer: This report is based on our knowledge of the history and key issues relating to priority setting in Aotearoa New Zealand. It does not constitute a systematic review of the literature.

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Executive summary

Introduction

Health systems and services are inevitably subject to resource constraints. Thus, the prioritisation of health spending is a central function of any health system. In the 1990s, researchers and policymakers in many countries began to distinguish between 'implicit' priority-setting, in which the pattern of resource allocation reflects historical paths of funding allocation and/or the aggregation of individual clinical decisions, and 'explicit' priority-setting, in which healthcare resources are allocated according to pre-established principles and criteria. Historically, resources were typically allocated using 'implicit' processes, but more explicit priority-setting was explored in the 1990s, internationally and in Aotearoa New Zealand.

Explicit priority-setting processes often incorporate criteria of need and equity. Patterns of implicit priority-setting processes are problematic because there is little guarantee that health resources will be allocated according to need, and in most cases, such implicit patterns reproduce inequities in access to health services, and inequities of health outcomes between population groups.

This discussion paper provides a conceptual scheme for categorising different types of explicit priority-setting. We then track the history of explicit priority-setting processes in Aotearoa New Zealand and distinguish between four broad categories of priority-setting, discussing each in detail.

'Between-service' priority-setting refers to processes for determining priorities between different health goods and/or services and sub-services. Such approaches have been attempted multiple times in Aotearoa New Zealand, with effectiveness, cost, cost-effectiveness, equity, Māori health, and acceptability as commonly applied criteria or principles. The most obvious continuing example is the work done by PHARMAC to determine priorities for government funding for medicines.

'Population-based' priority-setting refers to the allocation of resources based on demographic criteria. Here, funding formulae are used to allocate funding to geographic regions and/or health organisations. These are typically weighted to reflect different levels of 'need', which is most often measured by proxy or population measures, such as age, sex, ethnicity, and socio-economic status.

'Within-service' priority-setting refers to processes that shape which service users receive and potentially benefit from healthcare services, and which service users miss out. In Aotearoa New Zealand, the best example of this approach is the Clinical Priority Access Criteria (CPAC) developed for elective/planned services in the 1990s and 2000s, with the aim of reducing inconsistencies that had developed between waiting list processes. CPAC are the scoring tools used to score individual patients, and use a range of clinical and social factors, mostly relating to the severity and impact of the condition on a person's life.

We also note several *hybrid* approaches, where population-based criteria are used within services to identify populations which are prioritised so that some service users have better access to services, to reflect their higher needs. Examples include targeting government subsidies, *screening programmes*, which focus on defining which population groups can access publicly funded services, some of which are adjusted for Māori based on epidemiological data, and using *goals and targets* and/or the use of *financial incentives* with separate targets for different population groups.

Findings

There has been a plethora of explicit priority-setting approaches in Aotearoa New Zealand, and a plethora of criteria and rationales that have been adopted, even within the same category of priority-setting. Generally, when criteria of need and equity have been incorporated into explicit priority-setting, they have not been well defined.

Each approach has challenges associated with it. Policy instruments to support explicit priority-setting are enormously challenging to operationalise, because the information requirements to support such systems are considerable, and the processes required to produce priority-setting tools that have legitimacy with the public and clinicians are also challenging.

Regarding *between-service* approaches to explicit priority-setting, the criterion of efficiency has been central to these processes, exemplified by PHARMAC's processes for determining which new pharmaceutical products will be funded. Improved Māori health, improved equity in relation to access to services for Māori, and reductions in inequities between Māori health and non-Māori health have each been identified as key criteria or principles included in key strategies and explicit priority-setting processes in Aotearoa New Zealand. However, we have no evidence or information about how such criteria have been operationalised and used. The key challenge with these approaches is how to bring a stronger equity perspective to decision-making processes that have been developed according to utilitarian understandings of efficiency.

Regarding *population-based priority-setting* approaches, funding formulae have a long history of use in Aotearoa New Zealand, being used to allocate resources between geographic regions (most recently, DHBs) and between PHOs and member practices. However, these have not been accompanied by clear mechanisms and processes that mean that the population groups identified as having greater needs are prioritised within those geographical boundaries or practices.

Regarding *within-service priority-setting* approaches, policies for within-service priority setting in Aotearoa New Zealand or internationally have not incorporated equity between population groups to this point. It has been widely established that Māori and Pacific patients have poorer access to surgical services, but there does not appear to be any data or research available on the distributional effects of the CPAC tools that have been used over the past 25 years. While there is a strong rationale for incorporating equity criteria into these tools, this would require the application of population categories as a way of making decisions about individuals. There would be significant technical and ethical challenges to address in designing and operationalising such an approach.

Regarding *hybrid* approaches, where programme eligibility and/or resources/subsidies are targeted to key population groups, it has been more straightforward to apply information about inequitable health outcomes to prioritising who is eligible for this service. However, subtle differences in the thinking around equity are apparent across these programmes, exemplified by the different criteria that have evolved, for example, across cancer screening programmes. There is a need for a review, then, of what concepts of equity are being considered in different programmes/services and how greater consistency can be achieved across programmes/services.

There is a strand of literature that focuses not so much on the criteria or principles that should be reflected in priority-setting, but also on *how* and *by whom* such decisions should be made. As priority-setting inherently involves values, it is widely recognised that public engagement is essential in priority-setting processes. Clinical engagement is also seen as key to ensuring that any particular criteria or principles are indeed applied when it comes to allocating resources, particularly at the patient level. Yet in reviewing a wide range of documents for this paper, it appears that few of the approaches taken to priority setting in the past in Aotearoa New Zealand have reflected Te Tiriti o Waitangi principles in terms of decision-making processes.

In our Closing Comment, we note that in spite of all the issues that arise with explicit priority-setting, there is a need for reviewed processes to be put in place by health agencies to support more consistent and equitable decision-making. Meeting needs and achieving equity continue to be key goals of the Aotearoa New Zealand health system, and there is a need for greater clarity in terms of what these goals mean exactly and how we are to achieve them. There is also a need for greater consideration of how to reflect Te Tiriti o Waitangi into the design of explicit priority-setting processes, both in terms of criteria or principles for priority-setting, as well as in terms of decision-making processes themselves.

There is also a need to formally review how to prioritise which patients get access first to elective/planned surgery. Without any kind of guidance, there will likely be a myriad of biases in decision-making. At the very least, any approach should include discussions and debate on how and where within service pathways inequities exist and how to manage these inequities, including reviewing the criteria and processes that are used to determine which patients are treated first.

1. Introduction

1.1 Background

Health systems and services inevitably are subject to resource constraints. Thus, the prioritisation of health spending is a central function of any health system.

Priority-setting occurs when there is more demand for a service than can be supplied within available resources (funding and workforce). Where health services are paid for directly by the service user, price is the primary mechanism for priority-setting (i.e., those who can afford the price are those who receive the service). However, in most advanced health systems, healthcare is funded by 'third-party' payers (governments and/or insurance organisations).

In any health system, there is therefore a pattern of resource allocation and service provision that is the consequence of decisions made across all levels, ranging from budget allocations at the macro level, to, at the micro level, individual clinical decisions about who to provide services to, and how much service to provide.

The term 'priority-setting' refers to the processes by which patterns of resource allocation are established. In broad terms, researchers have distinguished between 'explicit' priority-setting, in which healthcare resources are allocated according to pre-established principles and criteria, and 'implicit' priority-setting, in which the pattern of resource allocation reflects historical paths of funding allocation, and/or the aggregation of individual clinical decisions (Klein, 1993, Ham, 1997).

As is discussed below, more explicit, national approaches were debated during the 1990s, including in Aotearoa New Zealand (Ham, 1997).

In this paper, we distinguish between four broad categories of priority-setting:

- 'between-service' priority-setting, which refers to processes for determining priorities between different health goods and/or services and sub-services;
- 'population-based' priority-setting, which refers to the allocation of resources based on demographic criteria;
- 'within-service' priority-setting, which refers to processes that shape which service users receive and potentially benefit from healthcare services, and which service users miss out; and
- 'hybrid' approaches, which combine 'within-service' priority-setting with a 'population-based' approach, typically through targeting.

All approaches to explicit priority-setting require the identification of criteria or principles that are to be used to guide decision-making. The nature of criteria that are used varies across these different types of priority-setting. The particular arguments that are used to justify the criteria used in prioritisation processes also differ. However, in all approaches to developing priority-setting criteria, notions of 'need' and 'equity' are central.

This paper first discusses key issues relating to implicit and explicit priority-setting (Section 1.2). We then discuss issues relating to the core concepts of 'need' and 'equity' in relation to priority-setting (Section 1.3). This is followed by general discussions on each of the above three categories of priority-setting, along with hybrid approaches (Sections 1.4-1.7). Section 2 explores international developments. Section 3 sets out a brief history of explicit priority-setting in Aotearoa New Zealand, while Sections 4-6 summarise explicit priority-setting approaches used in Aotearoa New Zealand for each of the three categories, and Section 7 considers hybrid approaches. Section 8 considers the overall implications of the findings for explicit priority-setting in Aotearoa New Zealand, especially related to waiting lists for elective/planned surgery. Our closing comment follows in Section 9.

1.2 Implicit and explicit priority-setting

Historically, most priority-setting processes in health systems have been implicit (Klein, 1993), resulting in a particular pattern of health funding allocations. How this pattern evolves is shaped by health system characteristics. Where the funding of healthcare services is fully or partly private, implicit priority-setting within services (also referred to as rationing) is achieved through the price mechanism – for example, those who receive a service are those who can afford the direct payment, or the private insurance premium that covers the service. In health systems in which users are not required to pay directly, services are often implicitly rationed through waiting times and waiting lists. Implicit priority-setting processes result in historical, path-dependent funding patterns which are often difficult to change, particularly if allocating additional funds to a particular area or service requires funding to be taken away from other areas or services.

More explicit priority-setting requires the identification of criteria or principles that are to be used to guide decision-making.

1.3 Needs and equity in the context of explicit priority-setting

1.3.1 Needs

In many discussions on health service priorities, there are usually two key criteria or principles that occur regularly: meeting health needs, and improving equity. Each of these key concepts is discussed briefly here.

The starting point for definitions of 'health needs' is for a person or persons to have some kind of condition that causes unwellness. However, most definitions of health needs go beyond this, to also include 'capacity to benefit'– i.e., health needs can only exist where there is some kind of programme or treatment that can be offered and where the programme or treatment is effective – i.e., that it works to improve the condition or conditions that a person or persons has. (Benefits from programmes might not only include improvements to health but can also include information or reassurance as well as palliative outcomes.)

Measuring health needs directly is notoriously difficult. Ideally, at the population level, it requires a nationwide survey of people's health status, across a wide range of potential health conditions and risk factors. In Aotearoa New Zealand we only ever have a partial picture of health status measured in this way, e.g., through the New Zealand Health Survey or other period surveys, on mental health, for example. Such health surveys would also need to identify which health needs people felt were the most important to be prioritised through programmes or treatments.

Population health needs are typically more likely to be measured through data on the **use** of services, as such data is much more readily available, e.g., primary healthcare consultation rates, hospital admissions or discharges, consultation rates with psychologists etc. The most comprehensive data sets in Aotearoa New Zealand are for hospital discharges, where diagnosis data is also collected, allowing a nuanced view of health need. Other data sets are not so comprehensive. But relying on use of services as a measure of need means that the health needs of those not using services get missed; and there are many barriers to care along healthcare pathways that mean many health needs would be missed by only relying only on health service use data.

Individual health needs might also be addressed through an individualised health needs assessment. These occur formally (using needs assessment tools) for those requiring disability, home care or residential rest home services, and less formally through clinical practice and judgement, with health professionals working with individual patients or families to best meet health needs.

1.3.2 Equity

Most health systems will also consider issues relating to equity in relation to health needs and in explicit prioritisation processes.

There are two domains for equity in health systems. Firstly, equity applies to *access to or use of services* and, second, it can be applied to *health status and/or health outcomes*. Within each domain, there are two broad concepts of equity. In relation to access to or use of services, horizontal equity occurs where those with equal needs have the same access to or use of care, and vertical equity occurs where those with greater needs are seen to require higher levels of service, and hence enhanced access to or use of services compared to those with lower needs. This means comparisons *between* different between population groups or individuals. When applied to *individual* service users, both horizontal and vertical equity can be used as criteria comparing access to services. For example, are two patients with the same level of health need given the same priority of treatment? Are two patients with different levels of need given appropriately different priority?

Equity is also a criterion for comparing the overall health status of population groups, or the health outcomes (health gains or benefits) from particular programmes or treatments for different population groups. Here, vertical equity is the primary consideration when it is clear that different population groups have different health experiences, e.g., lower overall life expectancy or a lower chance of success from a particular programme or treatment. Initiatives and policy settings that aim to reduce inequities in health or in health outcomes are based on the premise that such differences are unjust.

Internationally, the most common categories used and/or suggested to assess equity between population groups in priority-setting are socio-economic status, geographic location, gender, ethnicity, religion and sexual orientation (Norheim, Baltussen et al., 2014). In any specific health system, the selection of characteristics to which judgements of equity are applicable and legitimate are the product of historical, cultural, and political developments.

They are also contingent on the availability of data on the health status and needs of these populations. In Aotearoa New Zealand, for example, there has been only limited data available on the health of the disabled and those living in rural locations, hampering our understanding of the health issues these communities face.

It is also important to note that much inequity in health status arises from the socio-economic determinants of health (e.g., housing, income, education), and there is only so much equity in health status that can be gained from health services delivery alone.

The next sections set out the key characteristics of each of the four broad categories of explicit priority-setting noted in Section 1.1. Further details on each, and how they have been applied in Aotearoa New Zealand, are set out in Sections 4-7 of this report.

1.4 Explicit priority-setting between goods and between services

This occurs when there are processes for allocating resources across different service areas, and/or goods relevant to healthcare. These processes often firstly allocate resources across broad categories of services, such as primary healthcare, mental healthcare, secondary healthcare, or pharmaceuticals. This is then followed by allocations to particular sub-services or conditions, such as secondary maternal healthcare. This is followed by allocations to particular treatments.

Each requires the use of explicit criteria according to which each treatment can be measured and compared.

There are many potential criteria – and those used in practice in Aotearoa New Zealand have included effectiveness, cost, cost-effectiveness/efficiency, equity, Māori health, and acceptability.

In this type of explicit priority-setting, the criteria related to efficient use of resources are usually central. This can include the following considerations: i) an effective programme or treatment should be delivered in a technically efficient manner, using as few resources (paid for at an appropriate market price) as is possible with existing technology (technical efficiency); ii) programmes or treatments should deliver the most benefit for the funding allocated (cost-effectiveness or cost-utility); and iii) that the mix of services delivered maximises overall health benefits from healthcare expenditure (allocative efficiency).

When effective and technically efficient services are delivered, there is congruence between prioritising higher health needs (defined as capacity to benefit), achieving allocative efficiency, *and* improving vertical equity. However, achieving vertical equity (in terms of access to services) simply equalises access, and although it may improve health for key populations, this is NOT the same as reducing inequities in health across population groups; to reduce inequities, resources *must* go as a priority towards those with higher needs; and the health of those with higher needs must increase at a faster rate than the health of those with lower needs.

Internationally and in Aotearoa New Zealand, the most common example of explicit priority-setting between goods or services applies to publicly funded pharmaceutical products. This is because there are well-established methodologies (health technology assessment) for assessing the costs and benefits, and for comparing these products. It is generally less common for this type of explicit priority-setting between services to be applied to healthcare services more broadly, although there have been many attempts, internationally and in New Zealand, to develop such approaches.

Criteria need to be well defined in order to work well in such priority-setting processes. The criteria or principles used in this type of priority-setting need to be applicable to the characteristics of the good or service. Accordingly, principles such as effectiveness, cost, efficiency, and quality of the good or service figure prominently in this type of priority-setting.

For between-service priority-setting, public consultation is frequently a key element of the process of determining criteria or principles, given the major role that values play in making decisions.

1.5 Explicit priority-setting between populations

In the second broad category of explicit priority-setting, it is *populations* that are explicitly compared and prioritised. This is based on the premise that different populations (defined in terms of geographic and demographic characteristics) have different levels and patterns of health need. As such, considerations of vertical equity between populations are the primary driver of explicit resource allocation priorities in this category.

Population-based approaches to health system resource allocation are most likely to be found in tax-funded systems in which the financing of healthcare is centralised. Such systems are used, for example, to allocate funding to geographic sub-regions, as well as to groups of or individual providers. The aim is to ensure that such allocations are fair, given that each area or organisation will be supporting the needs of quite different populations. In such cases, information about differential levels of need are often drawn from analysis of data on health status (e.g., mortality, morbidity), and data on access to, utilisation of and expenditure on, healthcare services, usually by broad demographic categories (e.g., age and sex).

Some population-based approaches then involve the identification of other criteria (beyond mortality, morbidity, age and sex) to be included in weighting formulae. More technically complex criteria of socio-economic disadvantage (e.g., the New Zealand Deprivation Index) can also be part of population-based formulae. If and where ethnicity is also used, it tends to be on the basis of in-depth research that shows that ethnicity is an independent factor (beyond socio-economic disadvantage) with respect to need.

Population-level prioritisation between districts or to particular groups or individual providers does not necessarily translate directly to resource allocation within geographic regions or organisations. This would require further priority-setting processes about which people get which services as a priority (and how much).

1.6 Explicit priority-setting within services

Priority-setting within healthcare services concerns the questions of which service users receive a particular service, how much they receive, and when they receive it (i.e., how long they wait).

In tax-funded systems in which there is a broad citizen entitlement to services based on need, the most common form of implicit priority-setting is via waiting times, and this is often a characteristic of elective/planned surgery services, such as hip replacements and cataracts (where patients can safely wait for care, i.e. the condition a patient has is not life-threatening). Explicit approaches to within-service priority-setting require the establishment of criteria for prioritising waiting lists. Examples of such criteria include severity and capacity to benefit, applied to individual service users. Aotearoa New Zealand has been widely cited in work on priority setting internationally for its approach in this area, through the development of a formal elective/planned services waiting times policy and accompanying tools (CPAC) (Honingsbaum, Calltrop et al., 1995, Ham, 1997, Locock, 2000).

1.7 Hybrid approaches to priority-setting

The above broad arenas for priority-setting are not mutually exclusive. Some approaches to explicit priority-setting involve more than one type. It is possible to incorporate population-based criteria into between-service and within-service priority-setting, although doing so adds a layer of complexity.

For example, explicit prioritisation within some specific services can also use the demographic (population) characteristics of individual patients (a combination of within-service and between-populations priority-setting) as priorities. This is often a way of ‘targeting’ funding towards particular populations; and although the criteria or principles may not always be explicit, they are likely to be based on supporting populations with higher needs or lower health status to have better access to care or improved outcomes from care. Examples include higher rates of government subsidies for primary care services, publicly funded cancer screening programmes (a specific service) in which eligibility is delimited according to population characteristics, and incentives to prioritise some population groups over others.

2. International developments and rationales for explicit priority-setting

Most of the international research on broader policy approaches to explicit priority-setting concerns **between-service priority setting**. During the 1990s and 2000s, many jurisdictions in higher income countries attempted to develop explicit criteria to guide priority-setting between services. Aside from Aotearoa New Zealand, the most prominent among these were the Netherlands, Norway, Sweden, Denmark, the United Kingdom, Israel, and the United States of America state of Oregon (Sabik and Lie, 2008).

Sabik and Lie's review, published in the *International Journal of Equity in Health*, provided a summary of the principles that had been chosen to guide priority-setting processes. One conclusion that can be drawn is that equity between populations was rarely used as a criterion in policy approaches to explicit priority-setting between services in any of these jurisdictions in the 1990s and 2000s (Sabik and Lie, 2008). Sweden included 'human dignity' and Denmark used 'equal human worth' in their lists of criteria, but neither framework explicitly compared population groups in terms of equity. While there have been calls to use equity between Indigenous and non-Indigenous populations as criteria in explicit priority-setting between services (Otim, Kelaher et al., 2014), we did not find examples outside Aotearoa New Zealand where this had actually occurred.

Regarding **explicit priority-setting between populations**, as expressed through funding formulae, a review of international approaches published in 2013 demonstrated that up until that time, ethnicity was rarely used as a criterion, whereas age, sex, rurality and socio-economic status were commonly used (Penno, Gauld et al., 2013). One notable exception was found in New South Wales, Australia during the 2000s, in which Indigenous population health need was explicitly included in a local population-based funding approach (Penno, Gauld et al., 2013).

An analysis of **explicit priority-setting within services** that have been applied in other jurisdictions would require a more extensive review. It is recognised that explicit prioritisation systems based on judgements of clinical need and severity may be associated with inequities (Rathnayake, Clarke et al., 2021). For example, in the use of triage scoring to prioritise treatment in hospital emergency departments in Alberta, Canada, First Nations patients were less likely to receive higher triage scores (McLane, Barnabe et al., 2022). However, three recent reviews suggest that criteria defined in terms of vertical equity between population categories known to face barriers to access, and/or broader disparities, rarely, if ever, feature in prioritisation.

Firstly, according to an OECD report on policies to reduce waiting times for elective services, Aotearoa New Zealand's Clinical Prioritisation Assessment Criteria (CPAC) is one of only three systems of explicit prioritisation process identified that are used across multiple services. Norway and Australia were the other two countries identified, and each used criteria defined only in terms of clinical need and severity (OECD, 2020).

Secondly, in a meta-analysis of systematic reviews of patient prioritisation tools covering the years 2014-19, the authors concluded that "incorporating socio-economic parameters and patients' moral considerations into prioritisation scoring systems is more effective and more likely to avoid system-associated discrimination in certain surgical specialties" (Rathnayake et al 2021: 16). The review makes the case that these types of factors *should* be included, based on systematic biases identified in prioritisation processes solely based on clinical need. However, this review did not identify any scheme that actually included such non-clinical criteria.

Thirdly, a recent systematic review (Dery et al), focused on patient prioritisation tools, found that tools take various forms, being dependent on the particular context where they are being used. This study pointed in particular to the use of such tools in Canada, Spain, and Aotearoa New Zealand (there being a close connection between the Western Canada and Aotearoa New Zealand projects). The review reports the range of criteria used across the papers they reviewed, such as threat to independence, functional limitations, pain/suffering etc, with no equity criteria included (although time on the waiting list was reported in two papers). The review also found, overall, that i) reliability and validity is acceptable to good; ii) there is a mix of findings relating to whether the use of tools leads to reductions in waiting times overall (rather than just re-sorting the list); iii) there are a range of other potential benefits, including improving transparency and some (limited) evidence of positive impacts on equity (e.g., in terms of geographic location and ensuring more urgent cases are seen first); and iv) that there are also concerns over a lack of flexibility which can limit acceptance, while surgeons feel that their clinical judgement is the most effective way of prioritising patients.

More recently, as waiting lists ballooned as a result of the COVID-19 pandemic, increasing attention is being paid to how to prioritise who gets care first, while not exacerbating inequities (Patel, 2022, Patel, Sanichar et al., 2022, Wyatt, 2022, Shenoy, 2023). This is an area for future scrutiny.

3. Brief overview and history of explicit priority-setting in Aotearoa New Zealand

In Aotearoa New Zealand, which has a health system predominantly funded through taxation, most priorities were historically set implicitly for publicly funded health services. That is, once an overall allocation to Vote: Health was determined, the government allocated funding to major categories of services (such as public health, primary care, and hospital care), and left it largely up to local organisations (e.g., hospital boards, general practitioners) to allocate resources themselves.

As new forms of data on health resource allocation gradually emerged in the post-war period, patterns of inequitable resource distribution, particularly between geographic areas, became more apparent to policymakers. The first Aotearoa New Zealand attempts to develop more explicit approaches to priority-setting developed in the 1980s when the first geographic-based funding formula was developed.

This was later accompanied by the first central government goals and targets, which were introduced in 1989 in a 'A New Relationship' document, including more explicit contracts for the newly established Area Health Boards (AHBs). Since that time, central governments in Aotearoa New Zealand have used a range of planning processes and documents to set out the goals and objectives which they want to see achieved.

During the early 1990s, there were considerable developments in explicit priority-setting in Aotearoa New Zealand, and these were part of a broader international trend in which governments in jurisdictions such as the Netherlands, Sweden and the US state of Oregon sought to establish clear principles to guide healthcare resource allocation (Honingsbaum, Calltrop et al., 1995).
In 1992, the New Zealand government established the Core Services Committee which was given the task of developing overarching principles for prioritisation between services at the national level and establishing an explicit 'core' of services to which all those living in Aotearoa New Zealand would have access (National Advisory Committee on Core Health and Disability Support Services, 1992a). This attempt at developing an explicit core was largely unsuccessful (Tenbensel, 2004). However, a year later, PHARMAC was established to make priority-setting decisions regarding the funding of new pharmaceutical products. Currently, PHARMAC remains the most well-developed system of explicit priority-setting between goods/sub-services in Aotearoa New Zealand. Its priority criteria have evolved over its thirty-year existence.

At around this time the Core Services Committee (which had been renamed as National Health Committee) shifted its focus from ‘between-service’ priority-setting to ‘within-service’ priority-setting, with a particular focus on waiting lists for elective surgery. This work resulted in the development of Clinical Priority Access Criteria (CPAC) tools that were developed to prioritise patients’ access to surgery. At the time, these CPAC processes were considered to be highly innovative internationally and were the subject of widespread interest from researchers and policymakers from other high-income countries (Hadorn and Holmes, 1997).

Later in the 1990s, the Health Funding Authority also set out a proposed approach for ‘between service’ priority-setting, building on the technical approach used by PHARMAC (Health Funding Authority, 1998b).

By the early 2000s, there was a growing realisation in Aotearoa New Zealand and internationally that explicit priority-setting processes, particularly between healthcare services, were very difficult and complex to establish and run. Specifically, there were considerable political and practical challenges in the identification and weighting of ethical criteria, and regarding the availability of credible information necessary to support decision-making based on set criteria (Klein and Williams, 2000).

During the early 2000s, the New Zealand government’s approach to priority-setting switched to a two-pronged approach. At a central government level, a range of strategies were developed to guide resource allocations and to support the direction of policy and service delivery. Thus, an overarching New Zealand Health Strategy (King, 2000) and New Zealand Disability Strategy (King, 2001a) were established, alongside later strategies for Māori health (He Korowai Oranga) (King and Turia, 2002), primary care (the Primary Health Care Strategy) (King, 2001b) and a Pacific health action plan (Minister of Health and Minister of Pacific Island Affairs, 2010) (as well as many other strategies, such as for older people, etc).

Beneath that, was a geographic / population-based focus. The newly established District Health Boards (DHBs) were funded according to an explicit population-based formula comprised of basic demographic criteria (Coster, 2004, Penno, Gauld et al., 2013). The funding of the newly established Primary Health Organisations (PHOs) was also designed according to a population-based formula but linked to the individual characteristics of enrolled patients (Cumming, 2022a). Typically, the formula used for PHOs has also been used to fund individual general medical practices (Croxson, Smith et al., 2009). Although the population criteria used to define these formulae have long been criticised for inadequately reflecting differential patterns of need, only minor incremental changes were made between 2003 and 2022 (Cumming, 2022a).

For DHBs, PHOs and general practices, even though funding was allocated according to population-based formulae, there was no requirement for these organisations to prioritise their own resource allocation in terms of these characteristics.

While DHBs were required to engage in strategic planning to support their geographic allocations of resources, the main information necessary to support resource allocation decision-making was to be gathered from district Health Needs Assessments (HNAs). A joint Ministry of Health (MoH)/DHB resource again focused on the general criteria that might be used to allocate resources between services (Ministry of Health and District Health Boards New Zealand, 2005). However, by the late 2000s it had become apparent that the information requirements to support between-service priority-setting within DHBs were considerable, while a combination of central government directives and difficulties in shifting resources meant that HNAs had little impact on decision-making and resource allocation in DHBs (Coster, 2004). As such, most 'between-service' priority-setting within DHBs continued to develop implicitly, dominated by historical funding patterns.

The structural changes of 2022 in which DHBs were merged into a single organisation (Health New Zealand – Te Whatu Ora) have further changed the priority-setting landscape. One of the main justifications of these reforms was to reduce or eliminate 'postcode rationing' (i.e., the effects of implicit geographic priority-setting) (Tenbensel, Cumming et al., 2023). Geographic priority-setting is now a core responsibility of Health NZ. Priority-setting between services and within services is also part of the ambit of Health NZ in partnership with Te Aka Whai Ora (Māori Health Authority).

The *Pae Ora* legislation, like its NZPHDA predecessor, also places great emphasis on health service planning as the predominant vehicle for converting overall policy priorities into actual resource allocations (Tenbensel, Cumming et al., 2023). Formally, overall goals are set out in a Government Policy Statement on Health and six key Strategies, which Health NZ and Te Aka Whai Ora must turn into a New Zealand Health Plan (Tenbensel, Cumming et al., 2023). However, it is early days for these new organisations and how they approach their priority-setting role remains to be seen.

We now discuss key approaches used in Aotearoa New Zealand priority-setting in more depth. A Summary Table sets out the key points in Appendix 2 of this document.

4. Between-service priority-setting

Key points:

- Underlying explicit priority-setting is the identification of a range of criteria or principles that are to be used to guide decision-making.
- These apply at a population level usually and would require further decisions about which people get which services as a priority (and how much).
- There are many potential criteria – those used in Aotearoa New Zealand have varied over time and by decision-maker; effectiveness, cost, cost-effectiveness, equity, Māori health, and acceptability are commonly applied. Criteria need to be well defined, and it is important to recognise that they embody key values that may differ across populations.
- Wide consultation is seen as a must in priority-setting, given the major role that values play in determining priorities.
- More explicit, national approaches were debated during the 1990s in particular.
- PHARMAC is the key agency using an explicit priority-setting process in 2023; it places a heavy reliance on cost-utility analyses (CUAs) which raise a number of ethical and value questions – most particularly, that CUA using Quality-adjusted Life Years (QALYs) weigh every QALY equally, regardless of the health status of the person receiving the service – a value that is widely accepted to not apply in reality.
- PHARMAC has a goal of eliminating inequities in access to medicines by 2025 and has developed a framework to support its work in eliminating inequities.

4.1 National health strategies

As noted above, prior to the 1989 'A New Relationship' documents (Minister of Health, 1990a), which included, for the first time, a set of 'Health Goals and Targets' (Minister of Health, 1990b) , priority-setting was largely implicit, and left in the hands of local organisations (e.g., hospital boards, general practices) and health professionals (e.g., specialists working in hospital boards, general practitioners, public health nurses) to determine how they allocated resources.

Since that time, there have been many overarching goals and objectives set for the health sector, in the 1990s in the form of policy and purchasing guidelines (e.g., (Shipley, 1994)), and from 2000 on, in the form of a range of strategies and action plans (as noted above). These tend to have explicit priorities included within them, but they are not considered here to be explicit forms of priority-setting, because they do not clearly set out the key criteria by which priorities have been determined. Thus, these are not discussed here in depth.

4.2 Core Services Committee/ National Health Committee

Work towards more explicit priority-setting in the 1990s was originally undertaken by the Core Services Committee (later, the National Health Committee; hereafter NHC). (For details on their work, see Cumming, 1997, National Advisory Committee on Core Health and Disability Services, 2002.)

The NHC was established to identify the 'core' or 'basket' of services to which all New Zealanders would have access. This would give people certainty over what would be publicly financed, and what services people would have to buy or insure for themselves.

This 'core' of services was originally a key part of a planned move towards managed competition between healthcare purchasers, where New Zealanders would choose which agency – a Regional Health Authority (RHA) or a new privately run Health Care Plan – they sought insurance coverage from. The 'core' of services was needed to ensure an efficient and equitable market for insurance developed in Aotearoa New Zealand. However, the plan for managed competition was dropped early in the full reform process. Thus, the focus became about the range of services, and terms of access, that the RHAs would purchase.

The NHC early its work rejected a number of alternative approaches that were developing in other countries. This included the sole approach in the Netherlands, which used a set of criteria to determine priorities, emphasising necessity, effectiveness, efficiency and services not being able to be left to individual responsibility. It also rejected the detailed approach being taken in the US state of Oregon, on the grounds that it was setting hard and fast rules – services were in or out regardless of personal circumstances; for example, a straight list of excluded services might mean facial surgery was not available for anyone, while a more nuanced approach would recognise that for cosmetic reasons facial survey might not be funded while a young person born with a bad facial disfigurement could get corrective surgery.

Thus, the NHC emphasised the importance of a not only a broad set of criteria for decision-making, but how concepts of effectiveness needed to recognise that any particular service might only be effective in particular circumstances, depending on the health condition a person had. Hence, they moved away from defining a 'core' of services, towards an approach which would develop 'guidelines' for health professionals to use to determine the appropriateness of a particular treatment.

In its first report (National Advisory Committee on Core Health and Disability Support Services, 1992b), the NHC focused on three main pieces of work.

First, it undertook a stocktake of service delivery across the country, finding a large number of variations in service delivery. It focused in particular on variations by ethnicity (Māori vs non-Māori), and region in particular, but also looked at differences in privately funded and provided service delivery.

Second, it consulted widely on key priorities, guided through a discussion booklet 'The Best of Health' (National Advisory Committee on Core Health and Disability Services, 1992). This emphasised four key criteria for decision-making:

- What are the benefits?, emphasising proven effectiveness.
- Is it value for money?
- Is it fair?, emphasising equity, especially between Māori and non-Māori.
- Is it what people want? (Later, this changed to, Is it consistent with the community's values and priorities? (National Advisory Committee on Core Health and Disability Support Services, 1993)).

Key priorities from early community consultations included mental health and substance abuse services; children's health services; and culturally appropriate integrated community care services; followed by emergency ambulance services; hospice services; and habilitation and rehabilitation services. Further, priorities were recommended in relation to services for children and their parents; health promotion and disease prevention; education for wellness; service integration; sensitivity to ethnic and cultural issues; sensitivity to the view of people with disabilities that they are not ill; as well as to concerns over the cost barriers to primary care including pharmaceuticals.

Third, the NHC did work in 10 areas (e.g., hip and knee replacements; raised blood pressure) consulting particularly with professionals and lay experts on how to improve equity of access and better outcomes and developing 'boundary guidelines' to guide purchasing decisions in 'usual circumstances'. These included some details on those who might not be offered a service as a result of clinical issues, meaning a service is far less effective, as well as desirable maximum waiting times for different conditions.

This work evolved over time, and the NHC would have various changes in function and name, and would eventually include work on a range of topics, such as:

- the development of groupings of services (e.g., primary care (general) services; pregnancy and childbirth services; etc) to support purchasing arrangements; to be combined with descriptions around when particular services should or should not be made available (evidence-based guidelines);
- improving the management of waiting lists and waiting times (see below);
- local, regional and national services;
- guidelines for primary care service delivery;
- disability support services;
- public health; and
- the determinants of health (National Advisory Committee on Core Health and Disability Support Services, 1992b, National Advisory Committee on Core Health and Disability Services, 1993, National Advisory Committee on Core Health and Disability Support Services, 1994, National Advisory Committee on Core Health and Disability Support Services, 1995, National Advisory Committee on Core Health and Disability Services, 2002).

The general priority-setting work continued with the release of several additional 'The Best of Health' discussion documents (National Advisory Committee on Core Health and Disability Support Services, 1993, National Advisory Committee on Core Health and Disability Services, 1997), which later became a Ministry of Health/District Health Board (DHB) guidance document 'The Best Use of Available Resources' (Ministry of Health and District Health Boards New Zealand, 2005).

The guidelines work was spun off to a New Zealand Guidelines Group (1999–2012), and the waiting times work was continued by the Ministry of Health in setting up an elective/planned services booking system (see below).

Later work in 2005 considered how decisions were taken about new interventions, including by DHBs. That work reviewed key criteria for decision-making (effectiveness, cost, cost-effectiveness, equity and Māori health, and acceptability) and also pointed to a raft of other criteria that might be used, such as acceptability to clinicians, overseas practice, the alternatives available, the availability of support etc (National Advisory Committee on Health and Disability, 2005). The NHC was eventually abolished in 2016.

4.3 PHARMAC decision-making criteria

In deciding whether to fund a medicine, PHARMAC considers the medicine in the context of a notional individual person, along with their family or whānau, the New Zealand health system, and wider society. To assist its decision-making, PHARMAC uses a framework called the factors for consideration (PHARMAC, 2023c, PHARMAC, 2023d). The four main factors are:

- *Need*. This factor considers whether the medicine is required, taking into account the impact of the disease, illness or condition it is designed to treat. An element of this is QALYs (Quality-Adjusted Life Years), whereby PHARMAC considers a person's life expectancy without the treatment compared with their increased quantity and/or quality of life with the treatment.
- *Health benefits*. That is, the potential health gain from the medicine. As well as the direct benefits to a person, this can include wider benefits to society, such as the effects of vaccines on the national population. Clinical evidence is an important aspect of this factor.
- *Costs and savings*. That is, the financial impact on the person, their family or whānau, and wider society of the medicine. For example, family or whānau members may be a person's full- or part-time caregivers. The treatment may alleviate the need for this level of care, and the associated costs.
- *Suitability*. That is, the non-clinical features of the medicine that might impact on health outcomes. This can include the size, shape and taste of a medicine, or its method of delivery (such as injection or oral). For instance, if a capsule is very large, some people may not be able to swallow it.

PHARMAC has depicted these four factors diagrammatically (see Figure 2 in Appendix 1 of this document).

Cost-utility analysis (CUA) is used to measure aspects of a number of these factors, including health benefits, costs and savings, and suitability.

Not every factor may be considered with every decision. Some factors may be less relevant (or even irrelevant) depending on the type and nature of the decision being made.

PHARMAC also consults with two advisory committees, the Pharmacological and Therapeutics Advisory Committee (comprising senior health practitioners, who are tasked with providing objective advice to PHARMAC on pharmaceuticals and their benefits) and the Consumer Advisory Committee (comprising consumer representatives, who provide input from a consumer or patient point of view). It also may consult with various subcommittees it has established, such as the Neurological Subcommittee and the Mental Health Subcommittee.

Ultimately, each funding proposal is compared against all the other proposals, using the factors for consideration. PHARMAC then determines which ones it believes would result in the best health outcomes and should be funded.

PHARMAC says it "is committed to improving the health outcomes of Māori and being a great Te Tiriti/The Treaty partner. We work with Māori to identify specific health areas that are important to Māori communities" (PHARMAC, 2023d, pp.1). PHARMAC includes equity in the need factor for consideration. In turn, this is informed by PHARMAC's Māori health strategy (discussed below) and Māori health outcomes.

PHARMAC first published a Māori health strategy in 2001, and its current strategy, *Te rautaki o te whaioranga: Māori responsiveness strategy*, appeared in 2020 (PHARMAC, 2020c). PHARMAC says the strategy's purpose is to "give effect to PHARMAC's commitment to upholding Te Tiriti o Waitangi…[and] support whānau Māori to achieve best health and wellbeing through access to, and optimal use of, medicines and medical devices" (PHARMAC, 2020c, pp.7). The document notes that PHARMAC's overall strategic targets include that "Inequity in access to medicines for Māori is eliminated", and, as a result, "Changes to PHARMAC's prioritisation process have been identified to ensure equity for Māori" (PHARMAC, 2020c, pp.9-10).

The factors for consideration do not explicitly consider equity issues for any other group. PHARMAC does have a simple Pacific responsiveness strategy (PHARMAC, 2017). At the time the strategy was published, PHARMAC acknowledged that "PHARMAC has had very few links with Pacific communities" (PHARMAC, 2017, pp.3). The strategy was in three stages. The first, covering the period 2017-2019, included engagement with Pacific communities and the growing of staff cultural capability. Although the second stage was to include publishing action plans for the period 2020-2022, nothing appeared. There is also no output regarding the strategy's third stage.

PHARMAC does not appear to have ever produced equity strategies for other disadvantaged groups, such as those with disabilities.

PHARMAC has faced increasingly strident criticism regarding its apparent lack of commitment to equity. In 2020, PHARMAC considered funding proposals for two new diabetes medicines. PHARMAC declined to fund the medicines for everyone and, initially, proposed that patients had to meet specific clinical criteria. However, the agency received what it called "a substantial amount of consultation feedback" (PHARMAC, 2020b, pp.1) on the proposal, the general theme of which was that, although it was good news that PHARMAC was going to fund the drugs, the strict adherence to clinical criteria would exacerbate equity issues (PHARMAC, 2020a). This is because Māori and Pacific Island people have disproportionately high rates of diabetes.

The Royal Australasian College of Physicians (RACP) submitted that, in ignoring equity issues, PHARMAC was out of step with changes in healthcare. RACP cited the Wai 2575 *Hauroa* stage one report, a Waitangi Tribunal report that found that the government has breached Te Tiriti o Waitangi by failing to design and administer the current primary healthcare system in a way that addresses persistent Māori health inequities. RACP submitted that the PHARMAC proposal would "entrench inequity" (Royal Australasian College of Physicians, 2020, pp.87). RACP said PHARMAC had to change its whole approach because if PHARMAC "had approached the funding of new diabetes therapies through an equity lens, this situation would not have arisen" (Royal Australasian College of Physicians, 2020, pp.93). Likewise, Diabetes Foundation Aotearoa said that the proposal would mean Māori and Pacific patients "will miss out and poor health outcomes and health inequities will not improve as rapidly as we would wish" (Diabetes Foundation Aotearoa, 2020, pp.77).

In response, PHARMAC changed the criteria. For the first time in its history, PHARMAC decided that, from 2021, all Māori and Pacific patients with current type 2 diabetes could access the drugs without the need to meet any further clinical criteria (PHARMAC, 2020b). PHARMAC's chief executive Sarah Fitt said the decision was "an intentional move to proactively promote equity of access to these treatments for population groups who are at high risk of complications of type 2 diabetes and for whom there is direct evidence of inequities in access to medicines" (PHARMAC, 2020b, pp.1). PHARMAC's revised decision to make the medicines easily available to Māori and Pacific people appears to have had a positive health impact (Chepulis, 2023).

In a 2022 review of over 50,000 Auckland and Waikato patients with type 2 diabetes – of whom 20% were Māori and 20% Pacific people – the proportion of Māori and Pacific patients with cardiovascular and renal disease prescribed these drugs was significantly higher (42%) than for other groups (30%). Of patients without cardiovascular and renal complications, the rates were even higher. The proportion of Māori and Pacific patients was 55%, and for other groups 30%.

But the chairperson of Diabetes Foundation Aotearoa, Dr John Baker, said in 2021 that PHARMAC had been too slow in funding the drugs and this had led to grievously inequitable outcomes. Noting that the agency had first been asked to fund one of the drugs in 2015, he said the delays had resulted in needless deaths and suffering. "The people who have suffered from these delays have been Māori and Pacific Islanders. There needs to be some accountability for that. It's Māori and Pacific Islanders who are bearing the costs of death and dialysis," Dr Baker said (Radio New Zealand, 2021a, pp.1).

The same year researchers conducted a review of PHARMAC's CUA of five funding proposals to assess the extent to which they include Māori health equity consideration (McLeod and Harris, 2021). The researchers noted that PHARMAC articulated a commitment to Te Tiriti o Waitangi and had a Māori responsiveness strategy to improve outcomes for Māori. However, these values were not manifested in the analyses. Furthermore, the factors for consideration documentation included only a superficial acknowledgement of Māori equity issues, confined solely to the need factor. The researchers concluded that PHARMAC's "lack of a systematic approach to identify, account for, and address known (or potential) underdiagnoses and under treatment of

Māori in the current healthcare system normalises and further perpetuates these inequities and is an expression of systemic racism" (McLeod and Harris, 2021, pp.3).

The recent independent review of PHARMAC strongly criticised PHARMAC's record on equity (Pharmac Review Panel, 2022). The review concluded that "PHARMAC talks about equity engagement and equity outcomes, but there is little evidence of this in practice" (Pharmac Review Panel, 2022, pp.35). To take one example, the review found that PHARMAC gave little consideration to equity in determining what vaccines are listed on the national immunisation schedule. By setting the minimum age for eligibility of the Covid-19 vaccination programme at 65, PHARMAC embedded and increased inequities. This is because the Māori population is proportionately younger than the non-Māori population and therefore less likely to benefit.

The review concluded that PHARMAC needs to incorporate equity considerations in all stages of its assessment processes, needs to work more closely with other parts of the health system to better achieve equity outcomes, and should greatly increase the representation of Māori, Pacific people and people with disabilities among its staff and on its clinical advisory committees.

These conclusions first appeared in the review panel's interim report, published the previous year (Pharmac Review Panel, 2021). At that time, PHARMAC's chief executive, Sarah Fitt, acknowledged that, with regards to equity issues, PHARMAC had "a long way to go" (Radio New Zealand, 2021b, pp.1).

When the review panel's final report appeared, then health minister Andrew Little directed PHARMAC to improve its performance on equity. He commented: "As a result of this review, PHARMAC will have a much greater focus on improving the health of Māori, Pacific people, disabled people and other groups who do not yet share equitably in the benefits PHARMAC provides" (Radio New Zealand, 2022, pp.1).

PHARMAC issued a two-sentence response to the final report, which was quoted in full by the news media: "PHARMAC welcomes the review final report and the Government's response. There are important improvements for us to make and we look forward to working with other health agencies on implementing the recommendations supported by the Government" (Whyte, 2022, pp.1).

Later in 2022 PHARMAC established a Māori Directorate within the organisation. The directorate would support PHARMAC's focus on lifting its Māori capability and capacity across the organisation, including supporting the agency's Māori staff. The directorate would also strengthen PHARMAC's understanding of how best to partner with Māori (PHARMAC, 2022).

PHARMAC has established for itself a highly ambitious goal: "To eliminate inequities in access to medicines by 2025" (PHARMAC, 2023b, pp.1). As part of this, PHARMAC is changing its systems so that they are more conscious of equity issues. For instance, it is supporting the equity capability development of its clinical advisors and developing its relationships with Māori and Pacific health services to explore ways it can support equity.

PHARMAC has identified five drivers of inequity:

- availability (how PHARMAC makes and implements funding decisions so that everyone who is eligible can access funded medicines);
- affordability (reducing price barriers so people can afford funded medicines);
- accessibility (ensuring people are able to see a prescriber or pharmacy);
- acceptability (the ability of health services to create trust, so patients understand and accept the medicines they have been prescribed); and
- appropriateness (ensuring prescribing results in equitable health outcomes).

PHARMAC said it could not control all these drivers, but "we can influence others to support change for equity" (PHARMAC, 2023a, pp.1). PHARMAC has set addressing Māori inequities as its top priority. Other priority areas include Pacific people, those living in deprived areas, those living in remote areas, and former refugees.

4.4.1 QALYs and Weighting QALYs

It is worth noting that CUAs are an important part of decision-making criteria for PHARMAC, based on internationally used measures of health benefit called Quality-adjusted Life Years (QALYs). QALYs combine measures of benefit from health services in terms of both quality of life and quantity of life (gained), focusing on key domains of health (e.g., mobility, mental health). CUAs use broader population or patient valuations of various health states to create measures of quality of life and multiply these through gains in length of life to obtain measure of QALYs gained from health services.

QALYs are an important tool for being able to compare the benefits from a range of different health programmes, interventions or treatments, given that they provide a single measure of health gain. However, they are not without problems, particularly when it comes to equity (see, e.g., Lipscomb, Drummond et al., 2009; Rand and Kesselheim, 2021; and Brazier, Ratcliffe et al., 2016). Key concerns include that they:

- incorporate Western notions of health (rather than more holistic concepts of health, including for example spiritual health) (Willing, Paine et al., 2020);
- are based on individual health gains (rather than collective gains (Willing, Paine et al., 2020));
- can give higher scores to young populations through length of life gained measures (hence not valuing older people as leaders and teachers (Willing, Paine et al., 2020); whether this occurs may depend on the discount rate as a higher discount rate will soon value benefits at zero);
- may be biased against populations, arising from lower coverage rates or higher costs, or due to lower life expectancies, where analyses use population-specific ages at death (McLeod, Blackely et al., 2014); and
- may ignore multi-morbidity (which is common amongst Māori and Pacific populations in Aotearoa New Zealand) (Willing, Paine et al., 2020).

A major equity issue in the literature relates to the fact that QALY measures assume that a QALY is a QALY is a QALY regardless of the characteristics of those gaining QALYs.

This approach has long been criticised on equity grounds, and it has been suggested people do not, in fact, value quality of life gains in this way; rather, they value more highly gains to those with worse lifetime health prospects and dependents (Dolan, Shaw et al., 2005). Suggestions for improvements, to better reflect population values, include weighting QALYs to take more serious (as opposed to mild) illness into account or the final health state which someone could attain following treatment (Williams, 1996, Williams, 1999). A considerable literature has developed around QALY measures and whether or how they might be better weighted to reflect equity goals, but generally, this has yet to occur.

PHARMAC does not adjust QALYs to take into account equity issues. It has said: “QALYS should not be adjusted or weighted for value judgements on issues such as distributive justice, respect for autonomy, or health need. PHARMAC’s factors for consideration provide a framework to ensure that all relevant aspects and issues are taken into account in an overall decision” (PHARMAC, 2015, pp.37-38).

Interestingly, the National Institute for Health Care Evaluation, a major government funder of health research in the United Kingdom, does weight QALYs in its evaluation of healthcare technologies. It previously gave extra weight to QALYs associated with end-of-life treatments, but recently switched to giving extra weight to QALYs that reflected the severity of illness being treated. The institute said there was some evidence to suggest the public placed extra value on treatments that produced health gains for those with severe illnesses, whereas evidence on public support for treatments that simply extended life was unclear (National Institute for Health Care Evaluation, 2020, National Institute for Health Care Evaluation, 2022).

A similar approach in Aotearoa New Zealand might well see more resources allocated towards funding medicines for conditions for key populations who are typically less healthy.

4.5 Health Funding Authority

In 1997, the structure of the health system was changed, with a new Health Funding Authority (HFA) established to take over the purchasing role of the four RHAs. Purchasing would be for all services – including population/public health, personal health and disability support services.

In May 1998, the HFA released a report on ‘How Shall We Prioritise Health and Disability Services’ (Health Funding Authority, 1998a), seeking a more explicit, transparent, principles-based process for priority-setting.

The HFA proposals included:

- A programme budgeting and marginal analysis approach (PBMA).
    - This begins with existing resources, identifying existing services and expenditures, outputs and outcomes within programme groupings (e.g., mental health) – this is the ‘programme budget’ phase.
    - It then poses questions about the next set of services that might be purchased and compares those with a first set of services that might be no longer funded, identifying the costs and benefits involved, and emphasising outcomes – this is the first part of the ‘marginal analysis’ phase.
    - Finally, decisions are made based on the relative costs of and benefits from shifting resources.

- Key principles of:
  - Effectiveness.
  - Cost.
  - Equity.
  - Māori health.
  - Acceptability.
- An emphasis on cost-effectiveness using CUA.
  - Effectiveness measured by QALYs, using an existing approach but with local research in relation to differences between Māori and non-Māori in health state valuations and dimensions included in the tools.
  - Equity would favour services tending to reduce inequities in health.
  - Four levels would apply, from 'full analysis', for all new services or existing services above a certain financial threshold, to 'no analysis' for mandatory services or those where the cost is very small.
  - Equity and acceptability could modify priorities suggested by the cost-utility findings, with Māori health considered within each evaluation step against a sub-framework for Māori specific issues to be developed by the HFA.
- Decision-making within service categories, not across them, for personal health, public health and disability support services; thus a common currency across the services would no longer be needed.

A 1999 review (Ashton, Cumming et al., 1999, Ashton, Cumming et al., 2000) of the proposed HFA process supported the approach, but noted:

- That many principles-based approaches resulted in 'a large number of principles which are not always well defined, nor weighted clearly, and where trade-offs between principles are not always made explicit', and that it 'is not very clear how it links into the services which are already delivered' (page 13).
- The international debate over the role of various technical approaches to priority-setting, including needs assessments approaches (with debate over what a 'need' is, difficulties in comparing different needs, and failure to include cost as a criterion in determining priorities); and economic approaches (which tend to emphasise efficiency over equity and other goals). Both require significant amounts of information, which in itself is costly to collect.
- Difficulties in actually reallocating resources.
- The need to recognise that in the end, priority-setting is a political process, so much attention needs to be paid to how decisions are made, including in engaging key stakeholders.
- That the principles were supported, but key would be how each was defined and operationalised, and how each might be weighted and trade-offs between principles handled.
- That the emphasis on cost-effectiveness would likely be controversial, especially where QALYs were not weighted and hence might lead to loss of access for the elderly and those with limited potential to improve their health.
- That there would be difficulties in using CUA for many services, and that translating evidence on the effectiveness of interventions to bundles of interventions delivered by a service would be complex.
- Issues in measuring costs, especially at the margin, and the need to consider start-up services with initial high levels of investment differently, and the importance of the perspective that might be taken (e.g., government vs societal).

- The importance of sensitivity analysis, especially where services were being ranked in order.
- Issues around applying the 'acceptability' criteria – recognising a significant amount of work might be undertaken on services that might never be cut, potentially requiring 'front-end' consideration, and ruling some services out of the approach altogether; recognising the question around 'acceptable to whom'; and recognising that including such a criterion appears to over-ride the whole basis of CUA, which is preference-based decision-making.
- Questions over potential trade-offs between CUA findings and equity, including how much efficiency might be traded off for improved equity.
- That an emphasis on equity of outcome, potentially by weighting QALYs gained by some groups more than 1, would move away from the traditional emphasis on equity of access.
- Key implementation issues, including a lack of good quality information on effectiveness and cost, and the need for a huge amount of information.

4.6 Ministry of Health/District Health Boards

The HFA was abolished in 2000, with the Ministry of Health taking on key roles in relation to policy and the purchasing of some key services, while 21 (later 20) DHBs were then established to purchase and deliver services locally.

Research undertaken into DHB needs assessment and prioritisation processes in the early years of the DHBs (Coster, Mays et al., 2009) identified the limited influence DHBs had in terms of purchasing decisions and found a range of approaches used in practice. A wide range of (often poorly defined) criteria or principles were used in priority-setting – 36 In all (e.g., equity, acceptability, Māori health, quality, safety, ability to benefit, etc). As a more detailed example, Hutt Valley DHB in its 2002-2007 five year plan, scored proposals against the weighted criteria/principles of effectiveness (25%), equity (reducing disparities) (25%), value for money (measured by cost per person (15%); cost offsets (5%); effectiveness per person (10%); and timing of benefits (5%), and Māori development (15%).

In 2005, a joint DHB and MoH working group published a new resource to support prioritisation 'The Best Use of Available Resources: An Approach to Prioritisation' (Ministry of Health and District Health Boards New Zealand, 2005).

The document emphasised three steps:

- Identifying services for analysis, e.g. from existing planning processes including needs assessments, a PBMA-type approach and existing strategies; because services 'stand out' due to, for example, being high cost or there being a disparity between research evidence and current practice;
- Analysing services, suggesting a principles-based approach, emphasising effectiveness, reductions in inequities, value for money, achievement of whānau ora, cost, and implementation issues.
- Making a decision based on the above principles, but also considering overall cost of a decision, resource implications, acceptability, ethical dimensions, the impact on the sector, the ability to manage potential risks and other legislative requirements.

5. Population-based priority-setting

Key points:

- Funding formulae allocate a fixed block of funding to a health service planning or delivery organisation; formulae are usually weighted to reflect different levels of 'need'. 'Need' is often not well defined. In practice, 'need' is most often measured by *proxy* or population measures, such as age and sex, based on data and research, and often based on statistical associations with use or expenditure.
- These apply at a population level usually and would require further decisions about which people get which services as a priority (and how much).
- A range of funding formulae have applied in Aotearoa New Zealand over time for hospital and related services, the most recent of which have included age, sex, ethnicity, socio-economic status, and unmet need, with adjusters for rurality and overseas visitors.
- Higher levels of funding are therefore available to support services for key population groups but this does not mean that funding is or must be spent on those particular groups.
- Specific weighted capitation formulae have also been in use for primary care since 2002, with the main pool of funding weighted by age, sex, and high-use-health-card status. Ethnicity and socio-economic status were not included in this main pool of funding, but were included in smaller pools. This was because data demonstrating higher levels of service use/expenditure was not available at the time. It was well known that levels of unmet need were high amongst key population sub-groups, however, hence the use of socio-economic and ethnicity weights in the smaller funding pools. The main funding pool formula has been heavily criticised for not adequately adjusting for higher needs populations; the Waitangi Tribunal has found against the government in terms of the formula; and new formulae, including age, sex, socio-economic status, ethnicity and multi-morbidity have been proposed which would better reflect need.

A main way in which inequities are reflected in priority-setting is through funding formulae. These allocate a fixed block of funding to a health service planning or delivery organisation using a weighted population-based funding formula. They are used in a number of countries to allocate healthcare resources (Penno, Gauld et al., 2013).

The main basis of these formulae are cost weights – the national average expenditure per head per year for a person in a particular demographic group (Ministry of Health, 2016). The weighting factors are usually not direct measures of need, however; they are usually *proxy* measures of need, i.e. age, sex, ethnicity, geographical location etc which have been shown to be related to need (which in turn have usually been measured by service use). Funding formulae may differ in terms of the weighting factors included, and the factors may differ depending on the range of services being included. It would be likely that the size of each population would be the main determinant of an organisation's funding, and that the highest weightings are for older people (Ministry of Health, 2004, Ministry of Health, 2016).

It is worth noting that such funding formulae do not determine the total amount of funding that might be allocated to a particular organisation; rather they determine how a pool of funding is to be distributed. Funding formulae also do not determine how the funds are actually spent – that requires plans or targets that organisations are held accountable for delivering on. This means that there might be higher levels of funding allocated for a particular population group, but that there is no guarantee the funding is actually spent on services for that group.

5.1 Hospital and related services

5.1.1 1980s and 1990s

There is a long history of using weighted population-based funding formulae in funding hospital services in Aotearoa New Zealand. Prior to 1983, funding was allocated to hospitals largely based upon historical expenditure patterns and to support building programmes. By the early 1980s, this approach was no longer supported as it was viewed as unlikely to lead to an equitable distribution of funds (Advisory Committee on Hospital Board Funding, 1980).

The formulae for hospital and related services in Aotearoa New Zealand were always recommended to be based on 'varied patterns of need…according to …mix of age, sex, morbidity etc' (page 15) (as these are known to differ across geographic populations) for specific services (e.g., inpatient services), with the 'need' factors based on factors known to contribute to different rates of the use of those services.

A 1980 review (Advisory Committee on Hospital Board Funding, 1980) recommended that the formula use (for non-psychiatric, non-obstetric services):

- age/sex weightings (based on hospital bed utilisation rates) (page 17); and
- standardised mortality ratios (SMR) (a ratio of actual to expected deaths if national age and sex specific death rates prevailed) as a proxy for morbidity (which at the time could not be measured) (page 22), and
- for obstetric services, standardised fertility ratios (SFR) for obstetric services.

Other adjusters that were also canvassed were the potential for:

- the equivalent of a London weighting (used in England) to account for higher salaries;
- a rural weighting to take into account that more sparsely populated areas would require more time on travelling for staff, with a smaller case-load than in more densely populated areas, and hence a lower occupancy rate for beds, longer average lengths of stay, and lower administration costs;
- a weighting for non-English migrants;
- a supplement for undergraduate teaching requirements (for students in their 4th, 5th and 6th years); and
- a supplement for 'old long stay' mental illness and intellectual disability cases (page 42) (recognising some people were remaining in hospital rather than being supported in community settings.)

The first funding formula was for hospital boards, from 1 April 1983, for the 27 larger hospital boards and, to some extent, the two smallest boards (given the smallest board had a population of 2,500 people) (Smith and Sutton, 1984).

In practice, the system worked by the government deciding on the full allocation to hospital boards, supplements being worked out and subtracted, each board's share based on its population then worked out (covering 93% of funds), and the two totals added together.

For the full allocation, expected bed days for each age/sex group for general, obstetric and mental health services were determined, multiplied by cost weights to get bed-day equivalents (reflecting the fact that some services have higher costs), and then adjusting the total by differential mortality and fertility, for inter-board flows and for flows to the private sector. Inpatient services utilisation was used as a proxy indicator of other (outpatient and domicillary) needs (given the lack of available data). Supplements included for teaching (4th, 5th,6th (interns)) and registrars; nurses dieticians; social workers; and psychopedic training officers.

A 1989 review (Anonymous, 1989) recommended a move away from SMRs to a Health and Equity (HEQ) model (Reinken, McLeod et al., 1985), which would include socio-economic status and ethnicity, along with the SFR, gender, and more age group bands. There would be no factor for population distribution. The HEQ would use area-based variables based on socio-economic and ethnic factors within each board, with research showing a higher correlation between HEQ scores and standardised hospital admissions, while use of HEQ was seen to better support health promotion and disease prevention activity. The funding weight for the HEQ would be determined based on empirical evidence of the relationship between HEQ scores and admission rates. By this time, research had shown that Māori health needs were above and beyond those expected for socio-economic status, suggesting that ethnicity be included as a separate factor in funding formulae for hospital services. The review also noted that utilisation statistics also likely underestimated Māori health needs (and noted the importance of correctly identifying and coding ethnicity in hospital data sets).

There was a discussion as to whether both the HEQ and Māori ethnicity should each be separately included in a new formula, but it was concluded that including ethnicity in the HEQ model meant that it should not be weighted separately in the funding formula. If, however, HEQ were not to be used, it was recommended that healthcare costs be disaggregated by age, gender, and ethnicity at the beginning of the calculations, and this would provide at least some weighting based on ethnicity.

Area Health Boards were abolished in the early 1990s, and a new health sector structure came into force on 1 July 1993. This consisted of four large regional bodies – the Regional Health Authorities (RHAs) planning and purchasing personal and disability support services, and a Public Health Commission, planning and purchasing for population-based health programmes; the latter was abolished in 1996 and its programmes allocated to the RHAs.

A 1994 document discussing the personal health services funding formula for RHAs (for 1995/96) (Ministry of Health, 1994) noted that the formula for *both hospital and primary health care services* included:

- age/gender (excluding those over 65 with hospital stays over 6 months, assumed to be receiving disability support services);
- costs and weights (using Diagnosis Related Groups or DRGs to account for the cost of providing services);
- special health needs for socio-economic factors – an HEQ adjuster based on eight socio-economic variables plus an ethnicity factor for Pacific people (with consideration being given to taking Pacific Islanders out of the HEQ and a separate adjuster being used for this population);
- special health needs for the Māori population (recognising that there is additional Māori health need not attributable to socio-economic status);
- geographical dispersion (to adjust for the proportion of people further than one hour's travel from a main centre (a population of over 10,000); and
- costs from reducing financial barriers to access (e.g., recognising that some populations do not use services as much as their health need suggests they should, and including an unmet need factor in the formula; at the time, this reflected the newly introduced community services card, as those with such cards were entitled to government subsidies to support access to primary healthcare, while those not holding such a card had to pay for primary healthcare services themselves) (consideration was also being given to an adjuster to reflect barriers to access to hospital care).

The adjuster for Māori health was derived from premature mortality statistics (which had been shown to be 22% higher for Māori males and 43% higher for Māori females).

The public health funding formula for 1996/97 (Ministry of Health, 1995b) (from 1995/96 this funding was going through RHAs) was to cover environmental, food and nutrition, communicable disease, Māori health, child health, youth health, adult and older people's health promotion. Based on expenditure from one RHA, funding was provided for these programmes, with some ethnicity adjustments per head of population for all but environmental and older people's programmes.

The Disability Services Funding formula for 1996/97 for RHAs (Ministry of Health, 1995a) was to cover services for those with a physical, psychiatric, intellectual, sensory or age-related disability likely to continue for a minimum of six months, resulting in a reduction in independent functioning and requiring ongoing support. (It excluded those whose disability was the result of an accident, as those injuries are covered by ACC.) Age-related, psychiatric and physical/sensory disability funding included weighting for Māori for residential and inpatient care. The age-related adjustment recognised that Māori have disabilities at lower ages than other populations, while the psychiatric funding reflected higher utilisation by Māori with psychiatric disabilities, and the physical/sensory adjustment was based on higher prevalence for Māori. It was noted there was no evidence for higher rates of intellectual disability by ethnic group.

5.1.2 2000s

By 2003, the health sector had again been restructured, resulting in the establishment of 21 (later 20) geographically based District Health Boards, planning and funding for many health and disability services (but not, initially, public health or disability support services for the under 65s, or for primary healthcare). By this time, the formula for hospital services included:

- age/sex;
- socio-economic status (as measured by the NZ Index of Deprivation or NZDep);
- ethnicity for Māori, Pacific and Other;
- expenditure on each sub-group to determine the cost weights (e.g, there would be a separate estimate for a female Māori aged 40-45 in NZDep quintile 5);
- an additional "policy-based" weighting for unmet need that recognises the different challenges DHBs face in reducing disparities between population groups such as Māori, Pacific people and those living in the most deprived areas 'in order to equalise the opportunity across DHBs to address health disparities' (2003 p. 6);
- a rural adjuster to account for the population being widely dispersed, and due to rural practice bonuses paid to rural GPs, unproductive time travelling by district nurses, and to recognise diseconomies of scale; and
- an adjuster for overseas visitors (Ministry of Health, 2004, Ministry of Health, 2016).

A 2014/15 review showed how the funding formula distributed funding according to the formula and adjusters, with 96.75% of funding according to demographic factors ($10.8b, 2013/14 $); 1.46% for unmet need (163m); 1.51% for the rural adjuster ($169m); and 0.27% ($30.4m) for overseas visitors (Ministry of Health, 2016). Some other adjusters sitting outside of the funding formula included a tertiary adjuster ($120m) and a land price adjuster for Auckland DHB ($9.2m) (Ministry of Health, 2016).

This review considered a raft of other variables and adjusters, for example whether to include Asian as a separate ethnic variable (rejected as different sub-populations have different levels of need); burden of disease (rejected due to the relationship between burden of disease measures (DALYs) and expenditure being weak). Also taken into consideration were the potential incentive effects of perverse incentives if key measures were included (e.g., BMI) (Ministry of Health, 2016).

5.2 Primary care

5.2.1 Pre-2002

Prior to 2002, in most parts of the country primary healthcare was partly government funded and partly privately funded. Before February 1992, the government subsidy was available to everyone, albeit at a very low level. In 1992, the government funding was targeted to those with Community Services Cards (CSCs), with about half of the population eligible for such cards based on family income; people with High-Use Health Cards could also receive government support if they had 12 or more primary care doctor visits in a year. Government funding at this time was on a fee-for-service basis, i.e. a payment per GP visit. During the 1990s, in some parts of the country, there was a move to capitated funding, joining some very rural areas that had had special arrangements prior to then. Higher subsidies for children aged under 6 were introduced to support free primary care visits in 1997 (Cumming, 2022b).

5.2.2 2000s Capitation Formula

In 2002, the government moved from fee-for-service funding of GP services, to using a weighted capitation formula for primary care services, and reinstated universal funding. People would enrol with a primary care general practice, and the primary care practice would then join a Primary Health Organisation (PHO); government funding would then flow from the Ministry of Health or District Health Board to the PHO and thence to a primary care general practice (Cumming, 2022b).

The funding formula for first level services (the bulk of the funding) was originally intended to include weights by age, gender, high-use-health-card status, ethnicity and socio-economic status. By the time it was introduced, the arrangements had changed slightly, and the first level formula no longer included ethnicity and socio-economic status. Instead, a second funding pool of Services to Increase Access (SIA) was established, and that included ethnicity and socio-economic status, with PHOs receiving funding only for those who were Māori, Pacific, or non-Māori non Pacific people living in the lower socio-economic status areas. A third formula covered health promotion, with the funding weighted by socio-economic status and ethnicity.

A key reason for this approach was because measures of primary care general practice service use did not show a difference between different ethnic or socio-economic groups, and the funding formula was based on service need. But as it was widely recognised that Māori, Pacific and those living in lower socio-economic areas had poorer health status in general than other populations, and that there was unmet need for primary care general practice services amongst these groups, the SIA and HP approach was taken instead. Both SIA and HP funding went to PHOs, who had to develop plans that needed to be approved by their relevant DHB before money could be allocated. SIA and HP funding made up only a small proportion of overall funding in primary care (Cumming, 2022b).

There was additional capitation-based funding (unweighted) for rural workforce retention; Care Plus (to support those with long-term conditions); and for PHO management services (Cumming, 2022b).

In 2006, a very-low-cost-access (VLCA) scheme was introduced to keep the fees patients were paying low; the scheme provided additional capitation funding if general practices agreed to keep their fees below a certain threshold (currently $19.50 for those aged over 18). There is also now a scheme for under 14 year olds to ensure free care for this age group and, since December 2018, a scheme to keep fees low for those who hold CSCs (Cumming, 2022b).

The change from fee-for-service funding arrangements in primary care to capitation was potentially equity-enhancing, in that funding was now available to support all those who enrolled with a general practice, rather than just those who had consultations with GPs. However, the way the formula has been put together is problematic theoretically (Cumming, 2022a, Cumming, Forthcoming), as such formulae must be adjusted to adequately meet higher needs, or the result is poorer service for key populations as well as financial difficulties for the organisations delivering services to those populations.

The first level services funding pool has been widely criticised in Aotearoa New Zealand for not adequately funding primary care general practice services according to need (see the references in (Cumming, 2022b, Cumming, 2022a)), and there is good evidence of the problems that are predicted to arise from such poorly weighted formulae (e.g., lower levels of service delivery to Māori and Pacific people in primary care; financial difficulties for the organisations supporting those populations) (Cumming, 2022b). The funding formula problems were recognised early on in the 2000s, and, in spite of several reviews and many calls for change, remains in place today in 2023.

Māori concerns over the formula led to claims to the Waitangi Tribunal. The WAI 2575 claim was heard in the late 2010s, with the Tribunal releasing a Stage One report in 2019 (Waitangi Tribunal, 2020). The report noted the uncontested evidence in relation to Māori health inequities and their persistence over time; that all parties including the government considered this to be unacceptable; and that the primary healthcare frameworks failed to support achieving equity of health outcomes for Māori. The Tribunal also found Māori PHOs to be underfunded from the time they were first set up (from 2002 on), and that the funding arrangements disadvantaged those organisations serving high-needs populations. It requested an urgent funding review of primary care.

Steps have been taken towards reviewing the funding formula. Most importantly, it has been suggested that the primary care funding formula change in future to better match health need, and should include age, sex, ethnicity, deprivation and morbidity, based on the M3 comorbidity index, derived from hospital admissions, which has been shown to be validated as a predictor of mortality in Aotearoa New Zealand and with diabetes complications. Including all these factors in a formula leads to an R squared of 0.279 meaning that the model explains 27.9% of the variation in primary healthcare use. The model was also shown to work well when compared with ASH admissions and smoking rates, but still with some unexplained variations that could still cause issues in relation to equity in capitation formulae (Sapere, 2022).

The model, however, builds significantly on the status quo in terms of staffing and service delivery patterns, and hence requires further consideration in terms of the investment needed to support unmet need (not measured in existing primary healthcare use), as well as changing service models of care and related changes in staffing.

Changes in the health sector structure from mid-2022 mean that the funding formula remains, in 2023, inadequately adjusted for need. Some additional funding has, however, been provided to support key providers in the interim (Te Aka Whai Ora, 2023).

6. Within-service priority setting

6.1 Elective/planned services

Key points:

- A more explicit approach to priority setting for elective/planned services was developed in the 1990s and 2000s, in order to reduce the many inconsistencies that had developed in who might be on a waiting list.
- The system aimed for consistency, certainty and transparency, and involved explicit scoring of individual patient need, a threshold score, and a formal booking system and target waiting times. Those qualifying by scoring over the threshold score would be booked for surgery within specific timeframes. The system would apply for services where people could safely wait (i.e. it would not apply for life-threatening conditions). Waiting lists *per se* would disappear – either people would be booked for surgery or they would be returned to their GP for ongoing review.
- Clinical Priority Assessment Criteria (CPAC) are the scoring tools used to score individual patients; they are developed for individual services (e.g., cataracts, hip replacements) as well as for groups of services (e.g., general surgery). They use a range of clinical and social factors, which are then weighted, to obtain a patient's individual score. Ideally, tools are supported by clinicians and other stakeholders and are validated prior to be being put into use, but these goals are not always achieved.
- A range of factors mean that national consistency was not achieved, e.g., due to the use of different tools, using tools in different ways, and the use of different thresholds around the country.

In terms of surgical services, key resources, such as operating theatres, surgeons, and theatre nurses, are particularly scarce and require good planning for services to run smoothly. Prioritisation has for many years been based on 'urgency', prioritising i) urgent cases which are treated promptly, over ii) semi-urgent cases where people are given a definite date for admission, and over iii) those who can wait longer. The last of these are termed 'elective' or 'planned' cases and include, for example, hip and knee replacements, cataracts, hernias, varicose veins, etc. (In Aotearoa New Zealand, a formal definition became that a patient was to be treated seven or more days after a decision is made that treatment is warranted (Cumming, 2013)).

Access to elective/planned care used to be managed via waiting lists, with operations scheduled on a largely first-come-first-served basis and using subjective assessments of urgency. Long waiting lists, associated with long waiting times, were a highly political issue over many years (Cumming, 2022b).

In 1993, a Core Services Committee (later, National Health Committee) was established to determine a national core of services to which all New Zealanders would have access (see above). As part of their work, they commissioned a report on the management of waiting lists. It was noted that the lists typically had no formal, nationally agreed criteria or consistency in how they were used and who was or was not on a waiting list; for example, it was not always clear that those on the lists or those waiting the longest times on the lists were those with the highest needs, while those on the lists might even no longer require surgery (Fraser, Alley et al., 1993).

Instead, it was proposed to have formal measures of priority developed by each specialty, based on patient need and the ability to benefit from the procedure they were being assessed for. Patients who met the criteria would be booked for their procedure, while those not meeting the criteria would be referred back to their GP for follow up, and reassessment if necessary. Waiting lists would no longer exist (Fraser, Alley et al., 1993).

This new system began to be worked on during the 1990s by the Core Services Committee (Hadorn and Holmes, 1997). The system was designed to ensure fairness and consistency in defining priorities, to enable comparisons across the country, and to determine maximum waiting times (Hadorn and Holmes, 1997). The system would involve:

- the development of Clinical Priority Assessment/Access Criteria (CPAC) for key specialties;
- the scoring of patients using CPAC;
- the setting of threshold scores/points,
  - with people scoring at or above a threshold booked for their procedure within a certain timeframe; and
  - those not scoring enough points being referred back to their GPs for follow-up care; and
  - re-referral if necessary if the condition deteriorated (Cumming, 2013).

Initial criteria included within CPAC were not only clinical factors and impacts on key functions (such as sight or mobility), but also social factors, i.e. the ability to work, care for dependants or work independently (Hadorn and Holmes, 1997). There were debates over key criteria, such as:

- age, where the concern was that including age could deny more elderly patients access to care if it were used to indicate likely comorbidities and where a higher age meant fewer points; age was initially only included for coronary artery bypass grafts on the basis that such procedures led to longer lives and hence would benefit younger people more; and
- time spent on the waiting list, which was rejected as a criterion, as it might mean less impaired patients were treated before more impaired patients, which went against the aim of ensuring that benefit was the key criterion for treatment (Hadorn and Holmes, 1997).

There were several goes at implementing the system. In 2000, a formal Reduced Waiting Times Strategy was released (New Zealand Government, 2000).
It sought to:

- set the maximum waiting times at six months' wait for a specialist assessment plus a further six months for treatment, with the level of need (i.e. scores/points) determined by what could be delivered within these waiting times;
- deliver services to ensure 'access… before patients reach a state of unreasonable distress, ill health and/or capacity' (p. 3); and
- deliver national equity of access to elective services, regardless of where they live.

All this would give patients certainty over whether they qualified for publicly financed procedures, and over how long they might wait. Prioritisation processes would also be transparent and there would also be mechanisms to ensure stronger accountability by hospitals to put key processes in place to support the Strategy and to deliver on target waiting times (Cumming, 2013).

Over time, the system evolved to include formal reporting and targets that were to met, along with financial incentives which meant that DHBs would not receive all the funding allocated for elective/ planned care unless they met key targets . DHBs were to inform GPs and patients within 10 days of a referral about whether a patient would be formally assessed; patients were then to have a First Specialist Assessment (FSA) within a set time frame; and, if eligible by having sufficient points, should be booked for their treatment within another set time frame. The set time frames for FSAs were originally six months, later five months, and later again four months each (Cumming, 2013). To reset the system, at times, where waiting lists had developed and had become difficult to manage, additional funding was provided to tidy the system up (Hadorn and Holmes, 1997) or the lists were culled and people removed from them (Derrett, Cousins et al., 2013).

There are, however, a number of key issues that prevented the full achievement of key goals associated with the initiative.

First, at the heart of the process are CPAC. These are clinical tools that are designed to measure and score patient need and/or ability to benefit. Typically, they might measure the severity of a patient's condition; the patient's ability to benefit; and consequences from delaying treatment (Office of the Auditor General, 2011). Each tool would have a set of criteria, which would be weighted, and a total score generated across the weighted criteria. Developing the criteria, however, would prove complex, with a need to ensure that they were well defined, and, ideally measureable. A key ethical issue identified early on was to suggest not emphasising maximising ability to benefit as this was seen to potentially disadvantage those with comorbidities or advanced age, thus favouring a focus on urgency of need instead (Evans and Price, 1999, Derrett, 2005).

Second, a nationally consistent process was never fully put in place. This arose because the same tools were not always used nationally to score patients, and different thresholds were used by different DHBs (which also meant that national equity could not be accurately measured). A related issue was that the tools could be used in different ways – from full and comprehensive scoring and use of the scores to prioritise patients, to less comprehensive approaches that scored until a patient hit the threshold, with the scores used only to ensure a patient would be booked and not the order of the bookings, through to continued use of urgent, semi-urgent and routine categories (McLeod, White et al., 2002, Roake, 2003, McLeod, Morgan et al., 2004a, McLeod, Morgan et al., 2004b, Office of the Auditor General, 2011). (However, it was also recognised that theatres could be more efficiently used if those patients needing shorter operations were scheduled into time left after a longer operation; so long as all received their treatment in the relevant time frame.)

A third issue was that the thresholds for treatment were never fully determined clinically; initially, both clinical and financial thresholds were to be determined, given constrained resources (Hadorn and Holmes, 1997), but later a circular process was used whereby the threshold that would apply at any point in time would be that which a DHB could reasonably be expected to meet given the resources it had available and given target waiting times (Cumming, 2013). This was possibly something that would make it difficult to get wide acceptance of the tools and process.

Fourth, in an ideal world, CPAC would meet key criteria, such as strong correlation with clinical judgement, high test-retest reliability, inter-rater agreement and reliability, limited variability etc. But the lack of a gold standard, and the resource required to test all the CPAC tools, means that tool performance was not always researched in this way. Tools were also often not explored in terms of cross-cultural validity or acceptability, often with no robust consumer participation either (Merry, No date). Tools have often not shown a correlation between clinical priority scoring and quality of life measures (Cumming, 2013, Merry, No date) meaning that it may not always mean that those with the greatest impairment get the highest priority (Cumming, 2013, Merry, No date) (although such factors should surely be considered in the development of the tools).

Overall, the entire Strategy proved difficult to implement (Cumming, 2013), for many reasons, including that the entire process was not acceptable to some in the health sector, in part due to concerns that the major issue was the insufficient funding available for elective care (Hadorn and Holmes, 1997), and to beliefs that the best way to determine priorities was through the use of clinical judgement (McLeod, Morgan et al., 2004a, McLeod, Morgan et al., 2004b). “Gaming” was determined to be occurring, for example, where the financial threshold was a major influence on the scoring (Roake, 2003, McLeod, Morgan et al., 2004a, McLeod, Morgan et al., 2004b).

The system took many years to bed in, and required, at times, significant resource input to support the process, as well as the culling at times of existing waiting lists in order to begin with a clean slate (Office of the Auditor General, 2011, Cumming, 2013, Derrett, Cousins et al., 2013).

A recent paper shows the complexities involved (Srikumar, Eglinton et al., 2020), relating to general surgical prioritisation. The paper notes that a first layer of decision-making is that:

- the procedure needs to be indicated;
- the benefits of surgery outweigh the risks; and
- the patient consents to the procedure.

Two key constructs to order waiting lists are then:

- urgency, with life threatening conditions having precedence;
- quantification of patients' ability to benefit from the procedure, which in turn relates to:
  - the levels of efficacy and amount of potential benefit from the procedure itself
  - the benefits for the specific patient, given their pre-operative state and comorbidities.

The authors also note that clinicians should maintain ownership of the process, so that clinical judgement is central to the prioritisation process.

The paper also notes the following issues with respect to equity:

- geographic inequity – in part due to local tools being used to prioritise patients and hence access depends on location;
- ethnicity – with differences in access, including delay to treatment;
- different surgical conditions being allocated different priority scores.

They note of the 1990s efforts that there were multiple tools, which lacked national consistency in criteria, were not validated, could be mathematically flawed, did not necessarily reflect clinical judgement, and which might use outdated data.

For a new general surgical tool, the Ministry of Health set up a General Surgery Prioritisation Tool Working Group in 2014. The application was agreed to be adults 16 years and older who did not have a malignancy or were not undergoing diagnostic procedures. Following a review and consultation process, the criteria in Table 1 were agreed.

The Working Group completed a 1000minds weighting exercise – a multi-step decision-making tool to develop the weightings, using pairwise rankings of hypothetical scenarios using clinical judgement. Vignettes were also assessed, and the rankings from the tool were shown to have a strong positive correlation (r=.89) with the clinical judgement/vignette rankings.

Pilot findings (from 15/240 general surgeons) showed that reliability of the tool is higher than judgement alone through repeatability (test-retest) and lower variability (i.e. higher inter-rater reliability). Feedback was then sought, with 77/240 (32%) general surgeons responding; most supported the tool, but a minority were strongly opposed.

Broader support for the tool was also evident, but there were concerns over:

- subjectivity e.g. patient-derived impact on life, with potential for patients to exaggerate while others may understate symptoms (but this is not limited obviously to the tool), with suggestions to use measureable indicators (e.g., visits to a GP, medications, time off work);
- manipulation or gaming;
- applicability;
- benefit; and
- the need to evaluate for equity.

The final weights for general surgery are set out in the table below, demonstrating the range of criteria that are used and the scores each level is allocated.

Table 1 General Surgical CPAC Weights, 2020

Criteria	**Weighting**
1. Patient-derived impact on life*	
(Determined by a patient self-reported questionnaire)	
· No significant impact	0
· Minor impact	4.9
· Compromised	9.1
· Major impact	14.6
· Avoids or prevents important activities	17.5
2. Frequency	
(Number of episodes per year that the condition has an impact)	
· Nil	0
· Less than monthly	7.1
· Monthly	8.3
· Weekly	9.4
· Daily	10
· Constant	12
3. Episode duration	
(Time per episode that the condition has an impact)	
· nil (has no impact on important activities)	0
· minutes	7.1
· hours	8.6
· days	9.8
· constant	11.2
4. Overall duration on impact on life	
· no significant impact	0
· < 1 year	0.8
· ≥ 1 year	1.4
5. Risk of deterioration (natural history of disease and condition)	
5a. Significance of deterioration	
· low	0
· medium	2.2
· high	12.1
5b. Likelihood of deterioration	
· low (stable condition unlikely to progress)	0
· medium (gradual and predictable course)	1.9
· high (catastrophic, substantial or unpredictable course)	11.1
6. Benefit	
6a. Degree or quantum (expected or most likely for the proposed treatment)	
· small improvement in symptoms, low impact on risk of deterioration	0
· moderate improvement in symptoms, moderate impact on risk of deterioration	9.1
· large improvement in symptoms, large impact on risk of deterioration	17.3
6b. Likelihood of achieving maximum benefit for this patient	
(Considering frailty, comorbidity, procedural complexity, diagnosis and risk of complications)	
· low (unlikely to achieve maximum benefit <25%)	0
· medium (possibility to achieve maximum benefit 25-75%)	16
· high (likely to achieve maximum benefit > 75%)	17.4

Source: (Srikumar, Eglinton et al., 2020)

7. Hybrid approaches

The above three broad arenas for priority-setting are not mutually exclusive. Some approaches to explicit priority-setting involve more than one type. It is possible to incorporate population-based criteria into between-service and within-service priority-setting, although doing so adds a layer of complexity.

For example, explicit prioritisation within some specific services can also use the demographic (population) characteristics of individual patients (a combination of within-service and between-populations priority-setting) as priorities. This is often a way of 'targeting' funding towards particular populations; and although the criteria or principles may not always be explicit, they are likely to be based on supporting populations with higher needs or lower health status to have better access to care or improved outcomes from care.

7.1 Screening programmes

Key points:

- Prioritisation for cervical, breast and bowel cancer screening work in different ways, but all the approaches focus on defining which individuals get access to services.
- Asymptomatic cervical cancer screening will target those aged over 25 years of age from 12 September 2023. From that date, there will also be free primary care screening for a number of key population groups, including Māori, Pacific women and those with a CSC, as well as those under- or -never-screened or who require follow-up; others receiving services in primary care will pay a user charge. There are known inequities in the incidence of and mortality from cervical cancer for Māori and Pacific women, as well as in screening rates.
- Asymptomatic breast cancer screening is targeted at those aged 45–69, and is provided free of charge. It prioritises Māori and Pacific women, but through programme-based approaches rather than through any formal 'rules' relating to access. Māori and Pacific women have known higher rates of mortality and lower screening rates.
- Asymptomatic bowel cancer screening also targets by age, for those aged 60–74, and is also free of charge. The bowel cancer programme now has a lower starting age for Māori and Pacific people to participate in screening, reducing the age to 50. The justification is that a higher proportion of bowel cancer occurs in Māori and Pacific people before they reach 60 – and that there is an overall younger age structure for these populations and current lower life expectancy as well.

There are a number of national screening programmes in Aotearoa New Zealand; this paper examines the three most widely known, that of cervical, breast and bowel cancer screening.

The *cervical cancer screening* programme began in Aotearoa New Zealand in 1990, with (until recently) a test recommended every three years for women aged 20-69 (later, ages 25-69, as the HPV vaccination programme rolled out, since 2017 available for all aged 9-26) (National Screening Unit, 2023). The screening has typically been undertaken in a primary care general practice setting, or by a *hauora* provider or at Family Planning. The cost was subsidised by central government, but with many users having to pay a user charge as well.

Māori and Pacific screening rates have typically been significantly lower than the Other (NZ European and Other) ethnic groups: with rates for Māori in particular falling since mid-2013; rates for most population groups falling during COVID-19; and inequities are now significantly worse than they were in mid-2013 (Te Whatu Ora, 2023b).

Health NZ reports that evidence shows that Māori have around twice the incidence and mortality from cervical cancer than the Other population group; Pacific women also have higher rates of incidence and mortality (Te Whatu Ora, 2023c). A 2019 report reviewing cervical cancer occurrences in relation to screening history also reported a higher incidence of cervical cancer for Māori women, along with Māori and Pacific women being over-represented in the group where an earlier test has shown an abnormality (Sykes, Williman et al., 2019).

The cervical cancer programme is changing from 12 September 2023. The new HPV test is recommended to be completed every five years. The test will continue to be provided in primary healthcare settings but will also be available as a self-test. Free screening will be available for:

- women and people with a cervix 30 years and over who are unscreened (have never had a screening test) or under-screened (haven't had a test in the past 5 years);
- anyone requiring follow up;
- Māori and Pacific women; and
- those with a community services card, with a view to catching up on screening rates that have fallen in recent years and to reduce inequities (Te Whatu Ora, 2023c).

The *breast cancer screening* programme commenced in December 1998 and is now available, free of charge, to women aged between 45 and 69 years of age, with screens undertaken every two years (Te Whatu Ora, 2023c). Screening rates for Māori have been lower than those for Other populations for some time, and the differences have increased over time, with rates for all populations falling during the COVID-19 pandemic (Te Whatu Ora, 2023a). Māori and Pacific mortality rates are disproportionately higher than those of other women, and it has been noted that more equitable outcomes could be achieved if more Māori and Pacific women were diagnosed at an earlier age. The programme does prioritise Māori and Pacific women, and those unscreened or under-screened. It has also been noted that Māori women are waiting longer for their first surgical treatment, which could be related to regional differences. The same is true for Pacific women, who also are less likely to receive radiotherapy after breast conserving surgery for invasive cancer (Robson and Stanley, 2017, Quality Improvement Review of Clinical Quality and Safety For BreastScreen Aotearoa New Zealand Review Panel, 2022).

The *bowel cancer screening* programme was first run as a pilot in the Waitematā DHB area, before being rolled out sequentially to DHBs between July 2017 and May 2022. The screens are available to those aged 60-74, with kits sent in the mail, every two years. The programme is run nationally through a National Coordination Centre (NCC) run by Homecare Medical on behalf of the Ministry of Health. The NCC sends out invitations and test kits, and coordinates processing and follow-ups. GPs are notified of results, while DHBs were informed of positive tests (Ministry of Health, 2023b). The national target participation is 60% (Ministry of Health, 2023b).

The pilot programme found lower participation rates amongst Māori (46.1%), Pacific (30.6%) and Asian (53.7%) populations compared with the NZ European/Other population (63%) in Round 1 and lower rates in Round 2 (except for Māori) . There were higher proportions of positive bowel cancer screening tests for Māori (8.1%) and Pacific participants (7.6%) compared with other participants (6.3% for Asian and 6.2% for the NZ European/ Other group). Māori also had the highest rates for detected adenoma, advanced adenoma or cancer; and Māori and NZ European/Other had the highest positive predictive values – the percentage of people undergoing colonoscopy who were identified to have adenoma, advanced adenoma or colorectal cancer (Smith, Read et al., 2016).

A 2018 report on inequities noted that:

- the bowel cancer screening programme is working towards achieving equitable access to and through the screening pathway for Māori
- bowel cancer is more common amongst non-Māori, but incidence is rising for Māori
- modelling showed health gains for all screened population groups, but lower gains for Māori (in terms of healthy days of life gained), because of lower rates of new case registrations, less successful engagement with Māori, and lower overall life expectancy
- an age of 50 for screening would be needed to achieve the same amount of health gain for Māori.
- a lower rate of cancer in that age group, the risk of harm from colonoscopy and stretching colonoscopy resources were reasons, however, to not recommend lowering the starting age for Māori for bowel cancer screening. The report also noted the need for more data on new cases of adenoma and changing rates of bowel cancer in Māori (Ministry of Health, 2018).

Budget 2022, however, did provide funding ($36m) to enable a lower starting age for Māori and Pacific people to participate in bowel screening, reducing the age to 50. Waikato and Tairāwhiti are the first districts to do this. The justification is that a higher proportion of bowel cancer occurs in Māori and Pacific people before they reach 60 – around 21% compared to 10% for non-Māori non-Pacific people; in addition, there is an overall younger age structure for these populations and current lower life expectancy as well (Ministry of Health, 2023a).

Another screening programme in primary care focused on diabetes and cardiovascular services. The 2012 programme built on an earlier 2007 ‘Better diabetes and cardiovascular services’ target and was renamed the ‘More Hearts and Diabetes Checks’ health target. This programme prioritised Māori, Pasifika, and Indian populations by having a lower age at which the screening programme would operate, 35-74 years for men, and 45-74 years for women, compared with the rest of the population, where the ages covered were 45-74 for men and 55-74 years for women. The programme also included funding to support the target, along with a bonus scheme and financial sanctions where DHBs and PHOs did not reach the stipulated target (90% of those eligible to be checked) (Allen and Clarke, 2016).

Most DHBs were found to have reached or come very close to reaching the target towards the end of the evaluation period (30 September 2015), albeit 15 months later than initially specified (Allen and Clarke, 2016). The evaluation showed that the coverage gap between Māori and non-Māori worsened over time (from 0.7 percentage points to a high of 5.4 percentage points between 2012/13 Q1 and 2014/15 Q1 before falling again to 4 percentage points for 2015/16 Q2. This could have been because an earlier diabetes initiative had seen many Māori assessed for diabetes; while the improvement could in part be potentially explained by a new indicator for younger Māori men being added to quarterly reports for 2015/16. Local league tables were found to have supported the initiative and the gains made (Allen and Clarke, 2016).

7.2 Subsidising user fees (government subsidies)

Key points:

- For some services, the government subsidises the cost (price) for only some groups in the population (thus 'targeting' support). This means those using services pay a 'user charge'.
- The most obvious examples are in primary care. Currently, there is universal funding for primary care, but there are higher subsidies for some groups, i.e. those aged under 14; those with a HUHC; those enrolled in VLCA practices; and those with CSCs – thus the key factors here are age, high use of services, and lower family incomes. Different but similar services are treated in different ways (e.g., cervical vs breast screening).

Another means of supporting higher needs populations is for governments to subsidise the cost (or price charged to service users) of care. Much government funded healthcare in Aotearoa New Zealand is free of charge, but there are areas where people do have to pay a 'user charge' as the government does not fully fund such care.

The most obvious example is in primary care. Various arrangements have applied over time, as noted above:

- Prior to 1992, with universal funding for primary care, but with some subsidies set at higher levels to support lower user charges for key groups; the dollar amount of funding stayed at the same rate, however, for many years, meaning people paid more and more themselves over time.
- Between 1992 and 1997, families on lower incomes with CSCs and those with HUCHs were eligible for government subsidies while those on higher incomes were not.
- From 2002 onwards, a universal subsidy was again introduced; those able to get lower cost care are those aged under 14; those with a HUHC; those enrolled in VLCA practices; and those with CSCs (Cumming, 2022b).

It is worth noting that the current arrangements do treat similar services in quite different ways, depending in part on who provides the service. Thus, for example, women having cervical screening done in primary care general practices will pay a user charge, while women having breast cancer screens through a national programme do not pay a charge at all (see more on this below) (Cumming, 2022b).

For some services, where people may have to pay partially or fully for care (e.g., adult dental care, optometry, hearing aids), there may be welfare benefits available through Work and Income NZ; in some cases, funding is provided as a loan that must be paid back (Cumming, 2022b).

Another example of prioritisation with respect to government funding and user charges relates to residential rest home care. Here, full funding is only provided to those who i) meet an individual needs threshold; and ii) have assets below certain amounts – currently $236,336 for those aged 65 and over); there is also an income test, with those earning over a certain amount having to pay some charges for their care (Cumming, 2022b).

7.3 Health Goals and Targets/PHO Performance Programme

Key points:

- The setting of specific goals and targets and/or the use of financial incentives are a further way in which population-level priorities might be encouraged.
- In several cases – in the 1989 original Health Goals and Targets programme and in the 2006-2014 PHO Performance Programme – there were separate targets for different population groups (for Māori in the 1989 programme and for high needs populations in the PHO programme (i.e., Māori, Pacific and those living in socio-economically deprived areas)); the PHO programme included some financial incentives to improve the rates of service use for the high needs population.

The first set of health goals and targets was introduced into the health system in 1989, as the health system was being reformed to establish AHBs (Minister of Health, 1990b). The government released 'A New Relationship: Introducing the New Interface between the Government and the Public Health Sector'. This included new arrangements between central government (which allocates health funding through Vote: Health) and the recently established new local organisations for planning and delivering healthcare, 14 geographically based Area Health Boards (AHBs). The 'New Relationship' included:

- a New Zealand Health Charter, with healthcare principles;
- a first set of health goals and targets; and
- a new contract between the government and Area Health Boards, supporting Area Health Board five-year strategic and annual plans.

The health goals and targets were risk factor or condition-based (tobacco smoking, nutrition, alcohol misuse, high blood pressure, unintentional injuries: motor vehicle crashes, hearing loss, asthma, coronary heart disease and stroke, cervical cancer and skin cancer). It was noted that achievement of key targets 'should reduce social and ethnic inequalities in health status' (p. 6). Several of the targets included a focus on reducing the differences between Māori and Pākehā rates (tobacco smoking, asthma, and cervical cancer).

Health goals and targets have been used in various forms since that time, at times more visibly than at other times (e.g., DHB and PHO targets during the 2000s and 2010s were highly publicised, while the booking system targets are less so). Even though reducing inequities have been major policy goals for many years, health goals and targets have typically not been set to identify whether or not inequities within particular programmes are being reduced.

One exception is with the original 1989 Health Goals and Targets programme, which had an inequity target to reduce inequities between Māori and Pākehā tobacco smoking, for asthma deaths, and for cervical cancer deaths (Minister of Health, 1990b). No other health goals or targets appear to have had such a target since that time.

There was, however, a separate PHO Performance Programme for a number of years that did also focus on inequities, in this case, between high-needs (Māori, Pacific, and lower socio-economic populations) and the total population. The programme began a as voluntary programme in 2005, with all 82 PHOs part of the programme by July 2007. It evolved into a quality improvement programme over time (bpacnz, 2011, DHB Shared Services Agency, 2014).

A key aspect was the inclusion of incentive payments where payments were weighted towards improvements in the higher need population, specifically for childhood immunisations (for 2 year olds), breast cancer screening, cervical cancer screening, diabetes detection, diabetes detection and follow-up, influenza vaccine coverage (for over 65s), and, later, smoking status being recorded, and Ischaemic CVD detection. A cardiovascular risk assessment programme had lower ages for Māori, Pacific or Indian sub-continent ethnicity for both men (35-74 years compared with 45-74 years for other ethnicities) and women (45-74 years compared with 55-74 years for other ethnicities) (bpacnz, 2011).

The programme saw increases in the rates of service delivery for both high needs and total population groups over time, with the inequities gap closing for immunisations, breast cancer screening, cervical cancer screening, and influenza vaccination coverage. The other measures had higher rates of detection for higher needs populations, reflecting the way those programmes worked, with the high needs group at a higher level and increasing faster for Ischaemic CVD detection, CVD risk assessments and diabetes detection and follow-up, although the smoking status recorded indicator showed the total population rate rising to closer to the high needs population group (bpacnz, 2011).

The programme incentive fund was not large ($33m in 2014 (Ashton, 2015)) and only a small proportion of it was allocated to achievement of the targets, with full payments at $6 per enrolled member in the early years, rising to $9.27 in 2008 and falling to $6.13 in 2011 (Cashin, 2011). The programme was to be replaced by an Integrated Performance and Incentive Framework (Expert Advisory Group, 2014) from mid-2014; that programme in turn was to be replaced by a System Level Measures Programme (Sharma, 2021) and that in turn is now a Health System Indicators framework (Cumming, 2022b).

8. Discussion

8.1 Overview

For the most part, the processes by which health services, population groups and service users are prioritised are based, as they are in all health systems, on predominantly implicit processes. It is well-established that the results of these predominantly implicit processes are inequitable, in terms of access to health services and in terms of health outcomes (Institute of Medicine, 2003, The Joint Commission, 2023).

Based on 30 years of experience, policy instruments to support explicit priority-setting have been found to be enormously challenging to operationalise, because the information requirements to support such systems are large, and the processes required to produce priority-setting tools that have legitimacy with the public and clinicians are also challenging. For this reason, they have ended up being confined to a few specific domains, such as choices regarding the funding of pharmaceutical products and prioritising access to surgery. Many of the other practices we have covered in this review (e.g., subsidising primary care fees) could be considered as examples of semi-explicit prioritisation, as priority is given to specific categories of the population, but not in a systematic way based on first principles.

This review covers where explicit priority-setting tools have been introduced in Aotearoa New Zealand, describes the broad features of their adoption and implementation, and identifies where and how equity considerations have been incorporated into them. Generally, concepts of 'need' and 'equity' have become integral to the overarching policy goals and objectives that the country is trying to achieve; as such, these concepts are also included as key criteria or principles when explicitly setting priorities. However, more often than not, neither concept has been well defined, making it difficult to know whether the operationalisation of each concept in priority-setting is indeed supporting the achievement of key policy goals.

There has been a plethora of approaches taken to set priorities in Aotearoa New Zealand, and a plethora of different criteria and rationales that have been adopted, even within the same category of priority-setting. For example, there have been different population-based criteria used for funding DHBs as distinct from PHOs, even though the funding formulae for each were developed at the same time, and we currently see different criteria being used to support equity within screening programmes. Neither do key strategy documents nor explicit priority-setting processes set out a theory of how equity is to be achieved; and in particular, most documents and processes are silent when it comes to considering how inequities are to be *reduced*.

8.2 Between-service priority-setting

Most between-service approaches to explicit priority-setting have focused on setting criteria or principles that can be used to evaluate goods or services, and not on identifying the key groups for whom services might be prioritised. To do so would require information about how different services affect different groups differently and data is rarely available in a form that would support this. Improved Māori health or equity in relation to access to services and health status for Māori have been identified as key criteria or principles included in key strategies and explicit priority-setting processes (e.g., PHARMAC, the Core Services Committee). However, we have no evidence or information about how such criteria were operationalised and used.

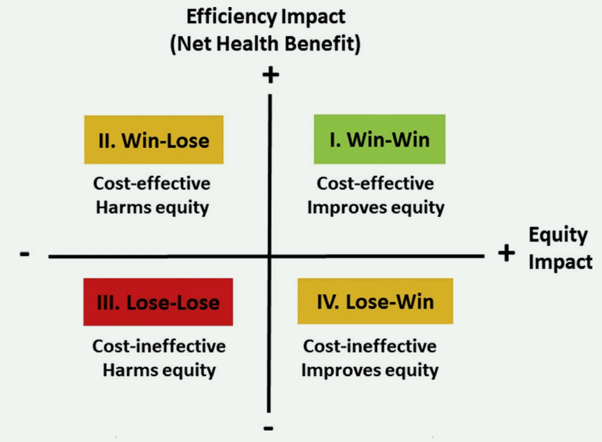
For those systems that have been in place, significant questions have arisen over their implications for equity. Over the past 20 years, there has been a growing realisation that economic concepts and tools for assessing cost-effectiveness are very Western-centric. 'Efficiency' typically is strongly related to utilitarian values, i.e., seeking to obtain the greatest amount of benefit for the greatest number of people. However, there are alternative ethical frameworks (Marseille and Kahn, 2019), such as Rawls' approach that would have the greatest benefit going to the least advantaged members of society (known as the 'maximin' principle) (albeit this is also Western-centric) (Rawls, 1999).

Typically, the domains of health measured for health outcome measures such as the SF36, or for QALYs, for example, are based on Western concepts of health, and do not consider other concepts of health, such as *hauora*. They are also based on individual, and not community, health.

The valuation of different health states may also be predominantly based on the responses from certain cultural groups; at times, European values have been used, but where Aotearoa New Zealand values have been identified, they will largely be the values of European New Zealanders (Devlin, Hansen et al., 2000) and may not accurately reflect the values of other population groups (see e.g. Scott, Sarfati et al., 2000 with respect to the SF-36). The more such concepts and tools are used, and the more they dominate decision-making, the more biased decision-making may be, and this, in turn, may work against the achievement of various equity goals.

The key challenge is how to bring a stronger equity perspective to decision-making when emphasising a utilitarian version of efficiency. It has been noted that early work in relation to QALYs included a suggestion that weights could be applied to QALY measures to get over the fact that 'a QALY is a QALY is a QALY' regardless of who gains the QALYs, a value judgement widely thought not to apply in practice. The recent NICE decision to weight QALYs sees this concern over QALYs (and DALYs) addressed, although there remains room for debate over the actual weights that might be used and their empirical basis (Johri and Norheim, 2012). An alternative approach to dealing with this efficiency-equity trade-off has developed in recent years, through a 'distributional cost-effectiveness analysis' (DCEA) approach (Avanceña and Prosser, 2021, Cookson, Griffin et al., 2021). This clearly identifies the efficiency-equity trade-offs from decisions being informed by cost-effectiveness analyses using an equity-efficiency impact plan to visualise findings from DCEA analyses.

Figure 1: Equity-effciency impact plane



Source: (Cookson, Griffin et al., 2021)

8.3 Population-based priority-setting

Arguably, the explicit priority-setting tool with the largest potential to address inequities is population-based funding formulae. This approach has been used to allocate resources between geographic regions (most recently, DHBs) and between PHOs and member practices. However, even if the funding formulae mean that there is additional resourcing provided because some groups have higher needs, population-based funding in Aotearoa New Zealand has not been accompanied by clear mechanisms and processes that mean that the population groups identified as having greater needs are prioritised *within* those geographical boundaries or practices, even though some districts, PHOs and practices have developed some (generally small-scale) initiatives.

Although it was the intention of governments in the 2000s that DHBs and PHOs use data in the form of Health Needs Assessments to guide resource allocation and decision-making, the difficulties of assembling and analysing data needed to support such processes meant that the potential of this type of priority-setting has been largely unrealised.

8.4 Within-service priority-setting

While it has been widely established that Māori and Pacific patients have poorer access to surgical services (e.g., Seddon, Broad et al., 2006, Rumball-Smith, 2009, Health Quality and Safety Commission, 2019, Bennett, Poppe et al., 2021) there does not appear to be any data or research available on the distributional effects of the CPAC tools that have been used over the past 25 years.

It is unlikely, however, that CPAC tools in their current form would counteract inequities of access to surgery. CPAC tools have been based on *individual* assessments of health, typically from a clinical perspective. These assessments have sometimes incorporated questionnaires for patients to complete (e.g., to determine the impact of their condition on quality of life). As with the techniques used to measure quality of life in between-service priority-setting, the ways in which quality of life has been defined from survey instruments generally have not incorporated understandings of how quality of life may be defined differently by different groups, and by Māori specifically (Merry, No date).

Policies for within-service priority setting in Aotearoa New Zealand or internationally have not incorporated equity between population groups to this point. As such, there is little available knowledge or experience regarding how to do so.

Although there is a broad rationale that could support the idea of incorporating such equity criteria, this would require the application of population categories as a way of making decisions about individuals. There would be significant technical and ethical challenges to address in designing and operationalising such an approach.

8.5 Hybrid approaches

Our review has shown that the places where population-based criteria have been most commonly incorporated into explicit decisions about resource allocation and health service delivery have been in terms of targeting programme eligibility or resources/subsidies to key population groups.

Here it has been more straightforward to apply information about inequitable health outcomes to prioritising who is eligible for this service. The evolution of thinking about Māori health inequities is most obvious in the three national cancer screening programmes – there are long-standing inequities in relation to morbidity and mortality from each of cervical, breast and bowel cancers, but each of the programmes is now recognising inequities in slightly different ways. Cervical cancer screening is now available free for Māori, while the breast cancer programme prioritises Māori through programme-based approaches (the service has always been free-of-charge for all women).

The bowel cancer programme has a lower age range for screening for Māori, recognising that it occurs in a higher proportion of Māori at younger ages, but also that there is a need to take into account the overall younger age structure of Māori and lower life expectancy. At one point, an argument was made that a younger age of starting the programme for Māori would support Māori achieving the same amount of health gain. Thus, subtle differences in the thinking around equity are apparent. There is a need for a review, then, of what concepts of equity are being considered in different programmes/services and how greater consistency can be achieved across programmes/services. There is also a need for a debate on whether the goal is to achieve equity with *programme/service* benefits versus wider goals of reducing inequities in health.

Here, there are possible inconsistencies in how principles are applied; for example, criteria relating to lower overall life expectancies would also apply not only to Māori and Pacific people, but also to men (and potentially to other groups, such as the disabled). This in part raises the issue of whether, when inequities are considered in terms of which population groups should be prioritised, they should only focus on health inequities or take into account wider socio-economic inequities (see Williams, 1998 cited in Sen, 2002 and Dolan, Shaw et al., 2005 for a discussion on these issues).

8.6 Processes for determining priority-setting criteria

There is a strand of literature that focuses not so much on the criteria or principles that should be reflected in priority-setting, but also on *how* and *by whom* decisions should be made. With priority-setting so much about values, it is widely recognised that public engagement is essential in any priority-setting processes. Clinical engagement is also seen as key to ensuring that any particular criteria or principles are indeed applied when it comes to allocating resources, particularly at the patient level.

In reviewing a wide range of documents for this paper, it appears that few of the approaches taken to priority-setting in the past in Aotearoa New Zealand have reflected Te Tiriti o Waitangi principles in terms of decision-making processes. More recent government strategies, for example, put Te Tiriti o Waitangi front-and-centre, drawing on recent Waitangi Tribunal principles of:

- tino rangatiratanga and mana motuhake (self-determination);
- equity (of health outcomes);
- active protection (ensuring the Crown, its agents and Te Tiriti partner are well informed and are acting to 'the fullest extent practicable to achieve equitable health outcomes for Māori' (p.10)
- options (properly resourcing kaupapa Māori services and ensuring all services are delivered in culturally appropriate ways, 'supporting the expression of hauora Māori models of care' (p.10)
- partnership (working in partnership with Māori in governance, design, delivery and monitoring of services) (Minister of Health, 2023).

However, we have not found examples of where such processes have been put in place in practice at a national level.

9. Closing comment

In this paper, we have set out the multiple ways in which priority-setting occurs, the multiple criteria used, and the difficulties in determining healthcare priorities explicitly.

In spite of all the issues that arise with explicit priority-setting, there is a need for some processes to be put in place by the new health agencies, Health NZ and Te Aka Whai Ora to support more consistent and equitable decision-making. Meeting needs and achieving equity continue to be key goals of the Aotearoa New Zealand health system, and there is a need for greater clarity in terms of what these goals mean exactly and how we are to achieve them. There is also a need for greater consideration of how to ensure Te Tiriti o Waitangi principles are incorporated into any explicit priority-setting processes, both in terms of criteria or principles for priority-setting, as well as in terms of decision-making processes themselves. This includes considering how to prioritise which patients get access first to elective/planned surgery. Without any kind of guidance, there will likely be a myriad of biases in decision-making. At the very least, any approach should include discussions on the types of criteria that might be used to determine priorities, and consideration of how inequities can be overcome across service pathways. A more detailed approach might see the continuation of CPAC themselves – in theory, they provide a transparent and focused approach to priority-setting; however, they clearly need to be reconsidered from an equity perspective, while the lack of overall support and engagement from clinicians, the different ways in which they are used, and the potential for gaming, all need to be considered, alongside the cost of developing and implementing them.

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Appendix 1

Figure 2: PHARMAC’s four factors for consideration (PHARMAC, 2023d, pp.1)

Appendix 2 Summary Table

SUMMARY TABLE

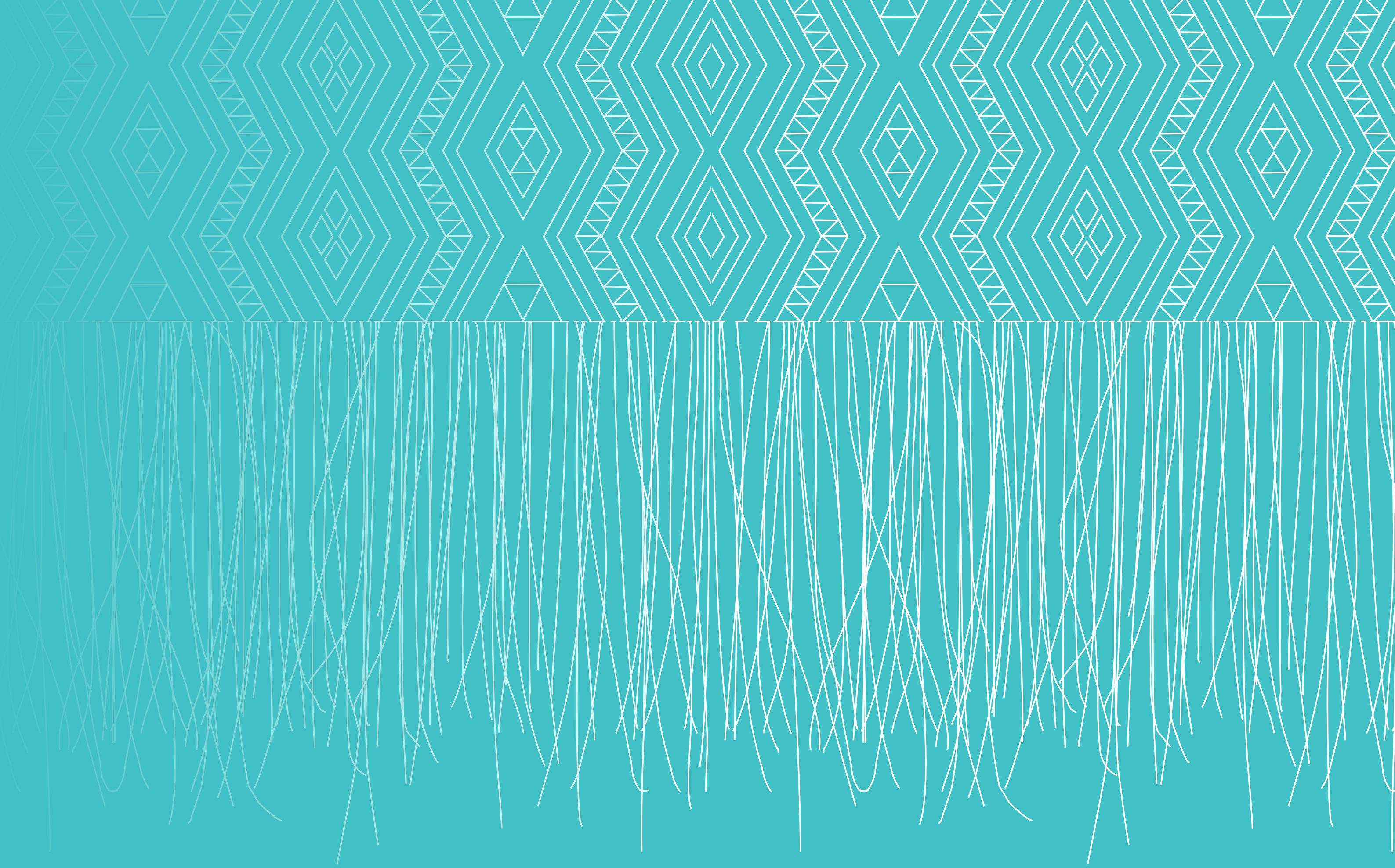
Between-service Priority-setting	Criteria Used	Notes
		Approaches typically identify a range of criteria to be used in decision-making. Recognising that decision-making is a political process means that consultation is a key part of such processes. Generic concerns relate to key criteria not always being well defined, nor weighted in terms of importance. The rationale for the criteria used is usually related to overarching policy goals and objectives, especially equity and efficiency, along with congruence with community values.
Core Services Committee/ National Health Committee	• Benefits/Effectiveness • Value for Money/Efficiency • Fairness (Māori vs non-Māori)/Equity • What People Want/ Consistent With Values	Not fully implemented beyond general consultations on priorities; work spun off into guidelines and elective/planned services waiting lists/times policy (see below).
PHARMAC	• Need • Benefits (Cost-utility analysis, CUA, using Quality-adjusted Life Years as a combined measure of quality and quantity of life gained from medicines) • Costs and Savings (CUA) • Suitability (CUA) Has a Māori strategy – A drive to remove inequities in access to medicines.	QALYs not weighted so 1 QALY is worth 1 QALY regardless of who gains it, a value that is widely acknowledged not to apply in practice. National Institute for Health and Care Evaluation now weighting QALYs to reflect severity of illness as a more equitable approach to reflect population values.

Between-service Priority-setting	Criteria Used	Notes
Health Funding Authority Proposal	Programme budgeting and marginal analysis (PBMA): • Effectiveness (CUA, using QALYs) • Cost (CUA) • Equity • Māori health • Acceptability	Not implemented – a review of the proposal noted a range of concerns about QALYs as the key measure of gains from services (e.g., cultural differences in thinking about health), and about the difficulties in applying such analyses across the broad range of services the health sector covers (then including disability).
Ministry of Health/District Health Boards (early 2000s)	PBMA process, using the following criteria: • Effectiveness • Reduction in inequities • Value for money • Achievement of whānau ora • Cost • Implementation issues Plus • Overall cost • Resource implications • Acceptability • Ethical dimensions • Impact on the sector • Ability to manage potential risks • Other legislative requirements	A resource for guidance for District Health Boards.
District Health Boards Needs Assessments	36 criteria identified e.g., • Equity • Acceptability • Māori health • Ability to benefit As an example, Hutt Valley DHB emphasised: • Effectiveness • Equity • Value for money (cost per person, cost offsets, effectiveness per person) • Māori development	A range of factors were seen to limit the use of such criteria (e.g., pre-determined priorities from central government) and if these criteria were used, it was often for new services rather than existing services.

Priority-setting by population	Criteria Used	Notes
		In this approach, an overall pool of funding is divided into smaller pools for distribution e.g., geographically or to organisations. A key focus – and the key rationale for the criteria chosen – is ensuring equity, i.e., that for each individual within a higher need group there is a higher per head level of funding to ensure that higher needs can be met. The approaches typically use proxy indicators for need. These indicators have been demonstrated to be associated with higher levels of spending and/or health service use. This means they do not reflect unmet need/barriers to access. Funding is not necessarily allocated to the high needs populations.
DHBs (including Hospital and Related Services) **Population Based Funding Formula (PBFF)**	Different at different points in time, most recently including: • Age • Sex • Socio-economic status (NZDep) • Ethnicity (Māori, Pacific, Other) • Cost of service • Unmet need • Rural adjuster • Adjuster for overseas visitors	Populations are defined in terms of census data (residents of geographic districts). Almost 97% of funding due to demographic factors (age, sex, socio-economic status, ethnicity) with age likely dominating.
Primary Care **Capitation formula**	First-level services (largest proportion of funding) most recently included: • Age • Gender • High-use-health-card status	Populations are defined in terms of general practice and PHO patient enrolment register. The approaches typically use proxy indicators for need. These indicators have been demonstrated to be associated with higher levels of spending and/or health service use. This means they do not reflect unmet need/barriers to access. The existing formula for first level services has been heavily criticised for not including ethnicity for Māori and Pacific people, although some smaller funding pools did include ethnicity and socio-economic status. There have been proposals to better reflect need/costs by including ethnicity and deprivation, and a multi-morbidity indicator, but these have not been put into place. Such adjustments would still exclude unmet need.

Within-services Priority-setting	Criteria used	Notes
Elective/Planned Care	Individual need A wide range of factors are included, which are specific to specific services. Factors are generally related to: • Having a condition/need/ impact on life • Severity/need • Ability to benefit/need • Independence/caring for others	There are a range of CPAC tools for different services, with some tools applying nationally and others applying locally. Although the tools and booking system processes were designed to ensure consistency across Aotearoa New Zealand, this was not achieved in practice, in part due to the use of different tools, tools being used in different ways, and different thresholds applying across the country.
Hybrid Approaches	**Criteria used**	**Notes**
Primary care subsidisation of fees (restrictions on user charges, paid for by govt)	Individual/family need • Under 14 year olds • Those with a HUHC (high use of services) • Those enrolled in VLCA practices • Those with Community Services Cards	
Screening Programmes		
Cervical cancer	Eligibility criteria *Current programme* Gender • Gender (women) • Age (25-69) Rationale for criteria: Effectiveness, Resource Availability *New programme from 12 Sept 2023* Free screening for: Those aged 30 years and over who are unscreened or under-screened (beyond 5 years) • Follow-up cases • Māori • Pacific • CSC holders	Rationale for criteria: Māori, Pacific women's incidence and mortality rates are disproportionately higher, with some evidence of slower follow-up of abnormalities

Hybrid Approaches	Criteria used	Notes
Breast cancer screening	• Gender (women) • Age (45-69) • Prioritises Māori, Pacific, those unscreened or under-screened	Rationale for criteria: Effectiveness, Resource Availability; Māori and Pacific mortality rates are disproportionately higher than for other women; more equitable outcomes if diagnosed at a younger age; Māori and Pacific women are waiting longer for first surgical treatment (although this may be due to regional differences)
Bowel cancer screening	• Age (60-74) • From 2022, Māori and Pacific people can begin at age 50, being rolled out region by region	Rationale for criteria: A higher proportion of bowel cancer cases occur in Māori and Pacific people before they turn 60; Younger age structure; Current lower life expectancy
Diabetes/CVD	• Age – 45-74 for men, 55-74 for women (non-Māori, non-Pacific, non-Indian population) • Ethnicity – 35-74 for Māori, Pacific, Indian men and 55-74 for Māori, Pacific and Indian women	A late 2000s programme aimed at screening for diabetes and CVD. The criteria were due to some populations having a lower age of incidence. There was some evidence that the coverage gap between Māori and non-Māori deteriorated over time, potentially due to an earlier programme where many Māori were assessed.
Health Goals and Targets/PHO Performance Programme	• 1989 'Goals and Targets' • Tobacco smoking, asthma and cervical cancer had separate targets focusing on reducing the differences between Māori and Pacific rates • PHO Performance Programme 2005-2014 • Separate measures for high needs populations (Māori, Pacific, lower socio-economic area) • Small incentive payments, weighted for improvements for higher needs populations for childhood immunisations (for 2 year olds), breast cancer screening, cervical cancer screening, diabetes detection, diabetes detection and follow-up, influenza vaccine coverage (for over 65s), and, later, smoking status being recorded, and Ischaemic CVD detection.	Such programmes can support prioritisation by setting targets that separately identify and track by key population factors e.g., ethnicity) and/or that reward improvements or faster improvements for key populations (e.g., ethnic groups where rates are lower).



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