# Proposed pro-equity prioritisation model for planned care

## Background

The causes of health inequity are complex and often begin prior to patients entering the planned care pathway. True elimination requires sustained and innovative solutions imbedded across the health system and beyond. One contribution to reducing inequity is the application of targeted equity adjustors at points in the planned care pathway. Over the last two years, Te Toka Tumai has trialled several approaches to adjusting the relative priority of Māori and Pacific patients on surgical waiting lists. These include adjustments to days waiting, increasing assigned priority and the application of algorithms. Some of these have shown promise in addressing differences in average waiting time for our most vulnerable groups.

Health system change and recovery from covid is accelerating regional working across planned care including a desire to establish regional waiting lists. This has brought strong focus on addressing inequities driven by ethnicity and geography. The northern region is looking to standardise a pro-equity approach to prioritisation across the region. At a recent meeting of northern regional surgical and Māori health leads, there was interest in sharing some of the pro-equity prioritisation tools emerging from the work at Te Toka Tumai. This paper is intended to share our most recent work in this area for consideration by the other districts.

Over the last few months a working group at Te Toka Tumai set out to determine an organisation wide approach to pro-equity prioritisation. The group included most of our Māori Health leads, representatives of our Kaiārahi Nāhi and Pacific navigation services and Directors/GMs from Surgical Services (see appendix 1). The group examined three equity adjustment models in use across surgical directorates and their impact on equity metrics (see appendix two for summary of pros and cons of the alternative approaches). The group also considered the application of the Te Whare Tapa Wha Māori model of wellbeing as a more holistic way of assessing morbidity beyond the usual medical model of health.

## Requirements

- Development must be a partnership with Māori Health and Pacific Health leadership to ensure that Māori and Pacific cultural perspectives on health and wellbeing are considered in the context of prioritisation.
  **Article one KĀWANATANGA (governance/partnership)** - *Trust and shared decision making (ensuring Māori oversight and ownership of decision-making processes necessary to achieve Māori health equity.).*
  **Article two TINO RANGATIRATANGA (self-determination)** - *Supporting Māori to own and operate health services that are underpinned by their tikanga and world views, and give whānau choice to access the very best care that is aligned to their values, needs and aspirations.*
- Develop an approach to prioritisation which impacts inequities in relative waiting time for our most vulnerable groups (accepting that prioritisation strategies alone will not completely address this issue and access barriers are a major contributor).
  **Article three ORITETANGA (equity)** - *Ending unjust and unfair Māori health inequities by resourcing actions that achieve tangible health outcomes for whānau Māori*
- Scope includes all planned care services (medical, surgical, adult, paediatric) and modalities (FSA, FU, procedures, diagnostics, community visits etc.). Though application is likely to be phased according to areas of greatest need

- Must be compatible with booking and scheduling systems and processes in use across Te Toka Tumai
- Service specific clinical prioritisation tools are out of scope of this work. However, the equity adjustment approach will use clinical priority as the initial baseline and apply adjustment to this score
- Develop a measurement framework to monitor the impact of the tools, assess areas of risk and enable ongoing tool adjustment recognising that different settings may be required for different services
- Developing a Te Whare Tapa Whā tool that will be utilised to improve patient engagement, assess internal and external supports, building communities around vulnerable people
  **Article four TE RITENGA (active protection)** utilising a Māori tool developed for practitioners to build a holistic view of the patients, building relationships that are responsive to the rites, rights and needs of Māori.

## Proposed model

The proposed model is an extension of an equity adjuster tool developed for the Urology surgical waitlist in 2020 (see appendix 3 for Urology equity data over this timeframe). It creates an adjusted risk score for each patient which rises with days waiting. This risk score (rather than priority band or days waiting) is intended to drive booking order. Different priority bands start at different scores and rise at different rates with Māori and Pacific rising at higher rates in each band than non-Māori/Pacific (see Fig 1).
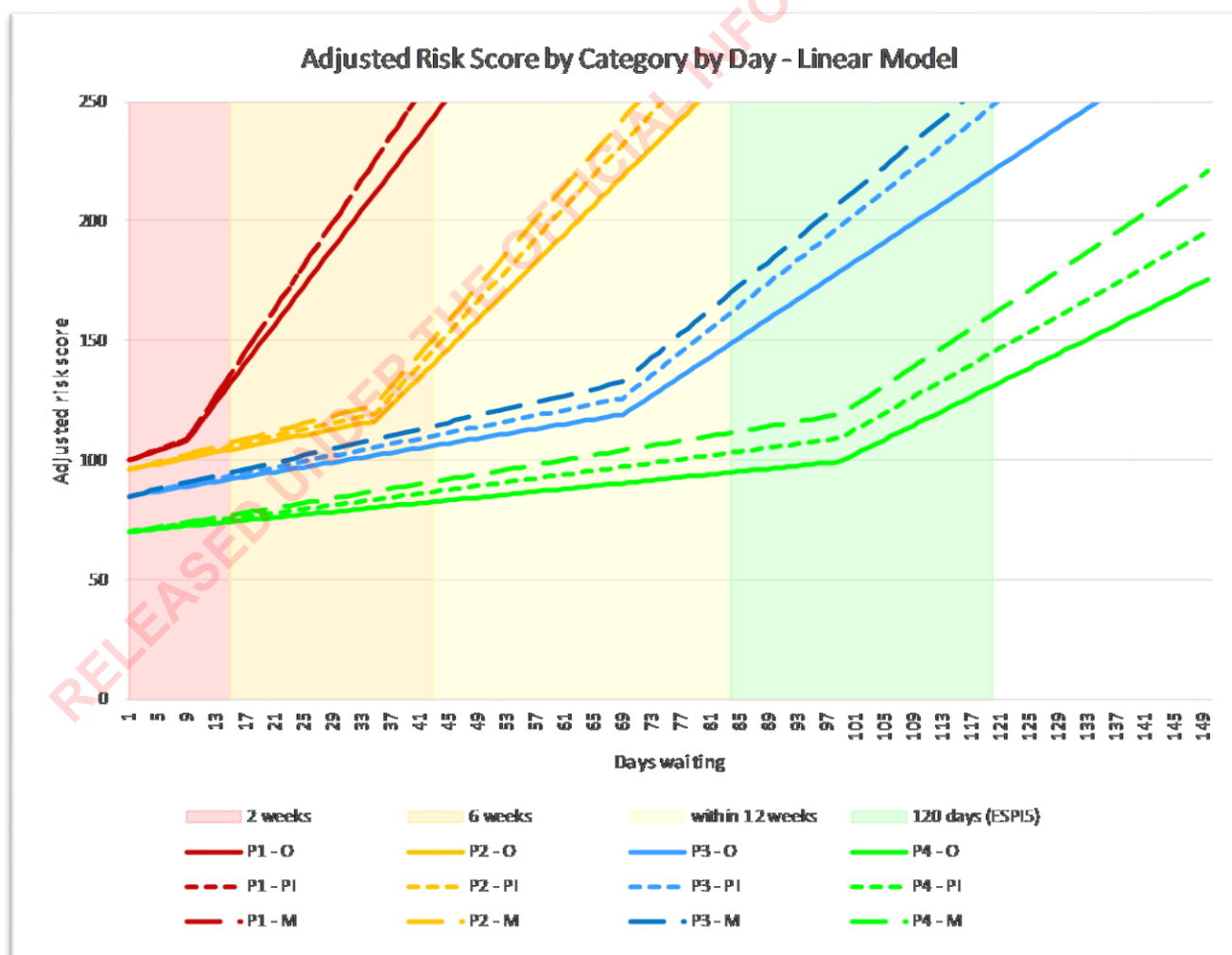


*Fig.1 Proposed model showing adjusted risk score for different priority bands and ethnicities (M=Māori, P=Pacific, O=non-Māori/Pacific)*

Very long waiting patients effectively overtake shorter waiting patients in higher priority bands if they have waited too long. This is accelerated for Māori and Pacific patients because of their higher gradients. The gradient of each priority and ethnicity group increases sharply when patients reach 80% of the recommended maximum clinical timeframe for their priority band (with P1s rising much faster than P2s and so on). This drives rapid escalation of patients at clinical risk and protects the highest risk groups in this scenario. The relative starting points and gradients can be tailored to achieve the desired equity adjustment which may vary by service.

Beyond pure ethnicity adjustment, the proposed model builds on this Urology model in two further ways:
1. It was the determination of the working group that Māori should have an additional level of adjustment based on our obligations to Te Tiriti
2. Further adjustment according to deprivation index (based on area of domicile) was also suggested. This recognises the association between social deprivation and health outcomes irrespective of ethnicity.

## Future development

The working group also explored adjustment based on wider dimensions of wellness/morbidity. This work focuses on the Te Whare Tapa Whā model of wellbeing. Te Whare Tapa Whā was developed by leading Māori health advocate Sir Mason Durie in 1984. The model describes health and wellbeing as a wharenui/meeting house with four walls. These walls represent taha wairua/spiritual wellbeing, taha hinengaro/mental and emotional wellbeing, taha tinana/physical wellbeing and taha whānau/family and social wellbeing. Our connection with the whenua/land forms the foundation. When all these things are in balance, we thrive. When one or more of these is out of balance our wellbeing is impacted (Mental Health Foundation of New Zealand).

The intention is to create an adjustment based on scoring each dimension of Te Whare Tapa Whā on a continuum. This adjustment applies equally to all ethnicities e.g. a sole bread winner for their whānau but unable to work due to their illness would receive higher priority. In practice, we have found challenges in making such a scoring tool comparable and objective. It also requires the gathering of additional information at either referral or clinic. This has dependencies on training, workforce and referral platforms. This is work in progress and could be added to the tool further down the track if we can make it work and gain agreement.

Further adjustments have also been suggested on the basis of rurality/remoteness which could also be added later.

## Putting the model into practice

At Te Toka Tumai we have incorporated the original Urology adjustment algorithm into a waiting list report used by bookers. This generates the adjusted risk score and orders the list accordingly. We will be adding the additional adjusters discussed earlier and can then share this report. Other districts could generate something similar for their data if such a waiting list report fits into their booking and scheduling workflow.

## Next steps at Te Toka Tumai

We are currently working on determining the initial settings for the model, building it into our waitlist reports, creating the dashboard to monitor its impact followed by piloting and scaling. Each district would need to go through similar steps to employ the model in their own environment.

## Risks

| Risk | Likelihood | Impact | Mitigation |
|---|---|---|---|
| 1. **Possible limited impact.** Prioritisation is only a small piece of the equity challenge and is not a useful lever for many. Patients unable to access services (e.g. transport/childcare issues) do not have these barriers removed by prioritising them higher on the list. | High | High | Pro-equity prioritisation should be part of a wider roadmap of equity initiatives, particularly interventions which target barriers to access e.g. clinical navigator teams, mana whenua support teams, patient focused booking systems etc. |
| 2. **The flaw of averages.** Tracking average waiting times is likely to give a distorted picture of success. Patients without barriers to access may be seen faster (over adjusted). Patients with barriers to access may continue to be delayed. The average may appear equitable but a significant proportion (and the group we are most trying to reach) may still be disadvantaged. | High | High | Measurement approaches need to examine the distribution of waiting times or reflect the majority of the data e.g. 95th centile of waiting times rather than means or medians. |
| 3. **Booking order.** List order on waiting list tools and actual booking order can vary considerably. This was a significant problem in our Urology trials. The drivers of this are complex originating from clinical, patient and organisational perspectives. This can continue to drive inequity despite adjusted prioritisation. | High | High | Need to track and understand the discrepancy between adjusted priority order and final booking order. Improvement activity in this area needs to be part of a wider roadmap of equity initiatives. |
| 4. **Greater risk to high priority groups with this model.** Because of the ability to effectively jump priority bands, any capacity/demand shortfalls can push out the waiting time on all priority bands. In traditional prioritisation methods this waitlist growth is usually limited to the lowest priority bands only. This risk is heightened in the current environment as we have so many long waiting lower priority patients. This will likely push high priority patients to the limits of their recommended waiting times immediately. | Med | High | It will be important to make sure high priority bands do not start exceeding safe waiting times. This can be mitigated through the starting points and gradients set in the tool but it requires good tracking and adjustment. This will need the right reporting and ongoing accountable oversight. |
| 5. **Philosophical barriers to adoption.** We are aware some clinicians are opposed to such models on principle. This might create some barriers to adoption. | Low | Medium | Most services are already doing some form of equity adjustment. At Te Toka Tumai this work has clinical and ethics endorsement. |

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| | | | | HR will be providing some guidance to support service conversations regarding this approach. |
|---|---|---|---|---|
| 6. **Negative impacts from scaling an untested model.** Though the original urology model has shown promise, confounding variables were in play (e.g. navigation services were also started). The measurement framework was also inadequate (limited baseline and measurement of means – see above). The proposed additions to this model are also untested as is its application to waiting list types beyond surgery e.g. clinics. The risks from this are largely described in items 1, 2 and 4 above, which could be seen in multiple services if we start at scale. | Medium | High | | These risks need to be balanced against the risk of doing something too slowly or at limited scale given widespread inequities and increased regional activity. The risks can be mitigated as described above and through some initial piloting before scaling rapidly. |
| 7. **Use of the Deprivation Index (DI) may result in under-adjustment for some patients.** The DI is based on census data and assigns the same deprivation score to everyone living in a particular domicile/suburb. This can be inaccurate, particularly where social housing is integrated into more affluent areas. | High | Low | | Overall, the number of patients impacted by this false attribution will be small. Though this could have an inequitable impact at an individual level, at a population level equity is likely to be much improved by the inclusion of a DI adjuster. |

## Appendix 1: Working group members:

| Tarati Blair-Hunt | Equity Partner, Quality Safety and Risk |
|---|---|
| Mylee Gordon | Manager, Kaiārahi Nāhi |
| Pauline Fakalata | Nurse Unit Manager, Pacific Planned Care Navigation and Fanau Ola Services, Pacific Health |
| Dawson Ward | Māori Health Lead, Surgical Services |
| Willy Bhana | Māori Health Lead, Cardiovascular Services |
| George Laking | Māori Health Lead, Te Pūriri o Te Ora (Regional Cancer and Blood Service) |
| Beatle Treadwell | Māori Health Lead, Women's Health |
| Richard Sullivan | Director, Surgical Services |
| Shane Kaulima | Manager, Patient Administration Service |
| Rebecca Stevenson | General Manager, Surgical Services |
| Sarah Danko | Associate General Manager, Greenlane |
| Elizabeth Kanivatoa | Māori Health Lead, Adult Medical |
| Joanna Lambert | Māori Health Lead, Adult Community |
| Kitiona AshbyLeota | Māori Health Lead, Clinical Support |
| Gwendol Welburn | Māori Health Lead, Clinical Support |
| Paul Browne | Manager, Production Planning |
| Thomas Strickland | Māori Engagement Specialist |
| Joanne Bos | Director, Cardiac Directorate |
| Desiree McCracken | Programme Manager, Performance Improvement |
| Bret Vykopal | Programme Director, Performance Improvement |

## Appendix 2: The pros and cons of other approaches to equity adjustment used at Te Toka Tumai

| Approach to equity adjustment | Pros | Cons |
|---|---|---|
| **One up** – moving all Māori and Pacific patients up one priority band i.e. P4 to P3. In practice this was limited to the lower bands, P3s were not moved to P2 and P2s were not moved to P1. | • Simple<br>• Intuitive | • Initial data analysis suggested this caused some inequity within Māori and Pacific groups. Long waiting P4s moved into the P3 band were effectively jumping ahead of P3 Māori and Pacific patients already there due to higher days waiting. Even if P3s were allowed to move to P2, the same would happen in this band.<br>• No finer adjustment possible. May over or under adjust. |
| **Adding additional days waiting for Māori and Pacific patients** – e.g. adding 30 days to the waiting time of Māori and Pacific patients so they are pushed higher up the list within their priority band. | • Simple<br>• Intuitive<br>• Some evidence it may impact equity (though there were other confounding variables in the data)<br>• Has some level of adjustment (by adjusting number of days added) | This likely works well in higher priority bands but may leave patients stranded in lower bands. Frequently, resource constraints result in the lowest priority band patients never being reached as the new influx of higher priority patients fill the limited number of slots. Adding additional days waiting to these patients does not make them any more likely to be seen. Data only looking at average waiting times may give an impression of overall improvement but some groups may be left behind. |
| **Algorithm based approach** (as per the Urology tool described in this paper) i.e. assign and order patients according to an adjusted risk score determined by priority, days waiting and ethnicity. Different priorities and ethnicities accumulate points at different rates to accelerate Māori and Pacific patients higher up the booking order as they wait longer. | • Some evidence it may impact equity (though there were other confounding variables in the data)<br>• Patients can effectively jump priority bands if they have waited long enough so they can't be stranded<br>• You have control over the settings to determine the level of adjustment required to achieve the desired impact (this will likely vary by service) | • Complex<br>• Requires building of tools for Bookers and Schedulers incorporating the algorithms<br>• Requires an operational process to review and adjust parameters to achieve desired result |

## Appendix 3: Evidence of impact of the original Urology equity adjuster tool

As described earlier, the urology equity adjuster used an algorithm approach similar to the proposed model but without any adjustment for deprivation index or remote location. Māori and Pacific patients were adjusted to the same extent and accumulated risk score points at a higher rate than non-Māori/Pacific in each priority band.

The data supporting the impact of the tool is based on mean waiting times by priority group. This has limitations (see 'flaw of averages' under risks). There were also other initiatives underway at the time e.g. Navigator services had started, which likely also had an impact. It was also hard to track data back to a clear baseline period prior to the equity tool being in place as priority data was not accurately captured before then.

Despite these data limitations, it is encouraging to see the average waiting time for Māori tracking down relative to non-Māori/Pacific over the period of tool implementation (see Fig, 2 and 3 below). Though he impact on Pacific appears limited in this data.

The parameters in the tool were adjusted over the period in question in response to limited initial impact. It was also noted that actual booking order was often significantly different to that proposed by the tool for a host of reasons including theatre list constraints and patient availability.
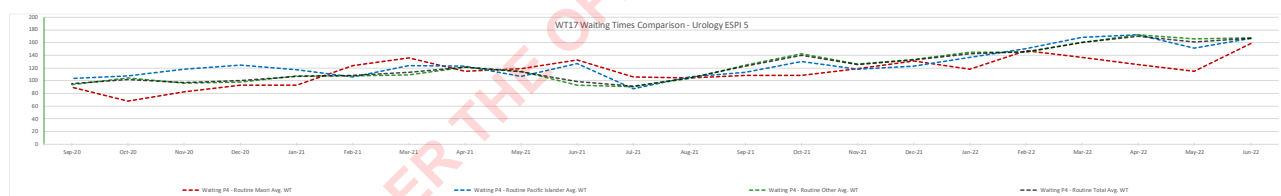


Fig.2 Mean waiting time for P4 patients on Urology surgical waiting list by ethnicity
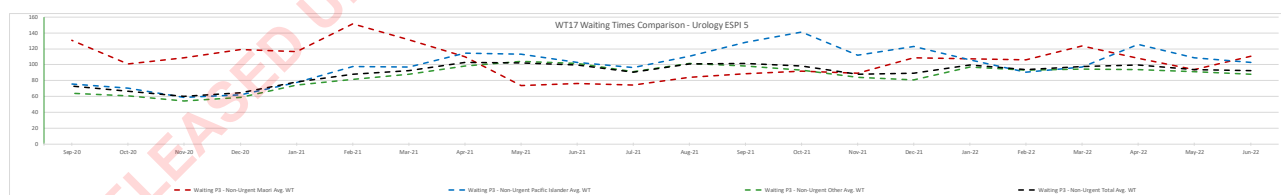


Fig.3 Mean waiting time for P3 patients on Urology surgical waiting list by ethnicity