Workforce and resources for future general practice

Discussion paper

April 2019
This discussion document has been prepared by GPNZ with input from Dr Tom Love of Sapere Research Group, drawing upon advice and information provided by clinicians and managers across GPNZ networks.

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EXECUTIVE SUMMARY

This paper considers the future delivery of general practice care services in New Zealand. It describes a model in workforce terms, and considers the approximate overall resource that would be needed to deliver such a model. It does not address questions about specific future business models for service delivery organisations, effective funding mechanisms, or matters of governance over services.

A potential model will have to offer an improved, comprehensive primary care service for New Zealanders, while recognising that the primary care workforce, and the health workforce more generally, is in a period of change. A potential model will therefore have to:

- Respond to unmet need for primary care;
- Recognise the changing roles and career expectations of medical practitioners;
- Build upon emerging workforce roles, and particularly the increased scope of practice available to nurses;
- Build primary health care teams that have a wider range of capability than is currently the norm;
- Articulate an approach that can be implemented widely across different communities, with a high degree of local responsiveness and local variation where appropriate.

The enhanced primary care team could include the following roles, with varying levels of resource depending upon the level of need in the enrolled population.

<table>
<thead>
<tr>
<th>Personnel</th>
<th>FTE per 10,000 high need patients</th>
<th>FTE per 10,000 general patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>7.9</td>
<td>5.5</td>
</tr>
<tr>
<td>Nurse practitioner</td>
<td>5.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Nurse</td>
<td>8.4</td>
<td>7.3</td>
</tr>
<tr>
<td>Reception/administration</td>
<td>6.7</td>
<td>5.0</td>
</tr>
<tr>
<td>Behaviourist/counsellor</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Social worker/Kaiawhina/Navigator</td>
<td>2.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Health care assistant</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Clinical pharmacist</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Trainee doctor</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Trainee nurse</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Trainee allied health</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Student clinicians (at any one time)</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Manager</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total team FTE</strong></td>
<td><strong>42.5</strong></td>
<td><strong>31.3</strong></td>
</tr>
</tbody>
</table>

An approximate estimate of the resource needed to deliver this extended primary care team can be generated by benchmarking incomes against public sector MECAs and estimating the annualised cost of a modern fit for purpose general practice facility. The total cost of delivering this workforce would be approximately $5.5 million per 10,000 high need population, and $3.9 million per 10,000 general population, representing a strong targeting of resource to those with high need. This equates to an overall cost of $2.2 billion nationally, if one third of the total population are served at the level of the high need workforce.

An approximate estimate of total annual primary care capitation and co-payment funding is at about $1.7 billion, although additional services provided by PHOs and in some cases by DHBs increase this number.

It is important to achieve clarity on the workforce and resource needed for an equitable, comprehensive, sustainable primary health care service before entering into the downstream policy debates on funding mechanisms and organisational models. GPNZ hopes that this contribution will stimulate debate on the best future shape of primary health care in New Zealand.
1 BACKGROUND

This paper considers the future delivery of general practice care in New Zealand. The vision presented here aims to strike a balance between, on the one hand, setting out a significant change to the core model of general practice as it has traditionally been delivered, and on the other describing a model that is realistically achievable across a majority of services.

The aim of this discussion paper is to describe what a widespread new normal for general practice could look like, rather than to articulate a model that might only be fully implemented in niches among more progressive organisations. There will always be a degree of variation in the model of care that is delivered to New Zealanders, with some services seizing upon progressive change and others reluctantly adopting new approaches. The approach proposed here is intended to be a new standard model for the majority of care services, but some communities and services will want to go further and to make more radical changes to the way that care is delivered.

This paper describes an approach to care in workforce terms, and considers the approximate overall resource that would be needed to deliver such a model. It does not address questions about specific future business models for service delivery organisations, effective funding mechanisms, or matters of governance over services. These are important questions, since current funding mechanisms and business models are often constraints upon change, and these issues will require careful assessment and investigation. But the focus here is principally upon the what of future primary care service delivery, particularly in workforce terms, as a pre-requisite for thinking about the how.

1.1 Existing strengths and weaknesses in general practice

The challenge of developing New Zealand’s primary care model lies in building upon some notable successes over the past 25 years while addressing weaknesses and failure to progress in key areas.

A key strength in New Zealand primary care lies in capable mid-level organisations, as PHOs have developed their capability to wrap an extended range of services around front line primary care. For example, some PHOs provide access to community-based counselling services, clinical pharmacists, and specialist long term condition nursing. PHOs have also developed a strong capability to coordinate and support general practice, providing continuing professional development for practice teams, effective clinical governance, support for fragile services, and infrastructure for the development of new services, or for services shifted from hospital settings.

Against these gains, there remain key challenges on which there has been little progress. There remain significant inequities in health outcome, in turn reflecting inequities in access to care. Services do not always respond to the cultural or social needs of communities and whanau, and to wider social determinants of health need, while Treaty Partnership with primary care organisations remains limited. While a number of individual primary care and general practice services have developed approaches that respond to diverse cultural needs, or have specific responses for high need communities such as refugee populations, much of mainstream general practice has continued with business models and workforce roles that have changed only incrementally over the last two decades. The funding mechanism for primary care relies upon bulk capitation, largely conceived and calculated since its inception as an average of the previous fee for service subsidy for a doctor consultation. At the current level of capitation funding most general practices receive approximately half or more of their revenue as fee for service patient co-payments, commonly focussed on doctor contacts and consultations. While some have embraced new models, in the absence of a special impetus many general practices have not moved away from traditional models of service delivery and business organisation.

Some health centres have been able to develop an extended primary care team that can be more responsive to communities, involving community health workers, whanau navigators, social workers and other professionals in meeting complex need. But this wider workforce is not a standard approach, and is often precariousely dependent upon short term agreements with funders. The practical consequence is that where primary care services have tried to extend and develop new models, these have tended to be one off developments rather than across the whole sector, and are often vulnerable when key individuals move on or...
funding becomes constrained. The opportunity now is to learn from some of these models of primary care, and to embed a comprehensive, extended model as the standard for primary health care in New Zealand.

1.2 Why now?

Earlier attempts to engender significant change in New Zealand’s general practice model have not been widely successful.

Several factors make this an auspicious time to move to a new model for primary care in New Zealand:

**A clearer focus on equity**

The Wai 2575 inquiry has brought a specific focus upon primary care and the need for responsiveness of primary care services to the needs of Maori. This is occurring at a time of greater focus on issues of equity and responsiveness to unmet needs more generally throughout the health sector. There is a need for a model of general practice that is equipped to respond to Maori and whanau in a more comprehensive and holistic way, with a wider team able to address the complex dimensions of health in a manner that reflects the need of Maori.

**The changing nature of the medical workforce**

Medical recruitment is increasingly difficult, and there are generational changes in expectation about the roles of nurses and general practitioners. These changes have already encouraged some practices to change their workforce models, and to explore different clinical roles within the core primary care team.

**The development of new workforce roles**

The workforce has developed over the past decade, particularly with the advent of nurse practitioners and prescribers in primary care. These roles have become increasingly common. Standard models of funding and business organisation in primary care, as well as the monitoring of primary care activity and productivity on the part of DHBs and the Ministry of Health, do not anticipate these roles or recognise much of what they deliver.

**The pressure of an ageing population**

Traditional general practices that may once have been comfortable and sustainable to operate with relatively lower need populations are now seeing pressures arising from an ageing population, and the need to manage an increasing number of people with multiple, complex long term conditions. This slow, but inexorable, pressure is being felt increasingly powerfully in many parts of New Zealand and is becoming a force for change that cannot be ignored.

**The ready availability of new technology**

Changes over the past decade have enabled a shift from the traditional episodic, doctor-based consultation to different modes of delivering care, meaning that first contact care is no longer always conducted in person. Whether through email consultations, providing advice and access to information through patient portals, or delivering consultations by videoconference, primary care services are taking advantage of technologies to deliver care that is more convenient and effective for patients. Patient information is often used actively to identify people with specific health needs or risks that should be anticipated, and this preventive activity is spread much more broadly across the team of doctors, nurses and allied health professionals. But again, change tends to be predominantly in those practices where there is an enthusiast for doing things differently, rather than diffused widely across the main stream of primary care service delivery and tends to be hampered, rather than enabled, by existing funding and business models.

The combined force of different factors for change means that general practice services across New Zealand are more open to exploring new models than has been the case in the past. A big part of making change happen will be to articulate an approach that can be implemented across the whole range of primary care services, so that innovation is not limited to a relatively small number of practices that have an enthusiastic leader, or services that are under extreme pressure.
The current appetite for change can be seen in the different models of organising a primary care service that are increasingly emerging across New Zealand, whether these be local examples under the auspices of the Health Care Home collaborative, Iwi owned and operated services, or services that draw upon international models. There will always be a range of perspectives among providers of general practice and primary care services, but in the current environment general practice leadership, and many front line practices, see a need for change and are likely to embrace a sustainable option for future services if such an approach can be developed.

2 DESIGNING A NEW MODEL

2.1 New Zealand primary care: current model

While there is great diversity in the way that primary care is currently delivered in New Zealand, it is possible to identify a standard model of traditional general practice, based upon a doctor led general practice. Under the standard model there is commonly a ratio of approximately 1:1 between doctors and practice nurses, although there is considerable variation around that level. The graph below shows the nurse to doctor ratio in a sample of 40 practices. The median is very close to 1:1, although the range is wide. The duties of the practice nurse may vary from relatively defined close support of medical consultations, to a more autonomous model in which the nurse conducts (and charges co-payments for) independent nurse consultations, takes responsibility for screening and prevention activities, and may provide group education sessions (for example for patients with diabetes, or children with asthma).

![Nurse : Doctor Ratio in 40 Practices](image)

*Figure 1 Nurse to doctor ratio in a sample of 40 practices*

Over and above the core capitation funding and activity in a practice, most practices will use CarePlus funding for supplementary service for those with more complex long term conditions. The specific bundle of services can vary substantially, depending upon the degree to which the local DHB and PHO specify the use of this funding or leave it to the discretion of an individual practice. Common uses would include extended consultations or nurse assessments to manage complex comorbidities, or to review and manage risk factors for hospital admission.
PHOs typically wrap a number of services around the traditional general practice core. While, again, the specific mix can vary substantially, a common set of services would include:

**Clinical pharmacy services**
Clinical pharmacists can provide medicine therapy assessments or utilisation reviews. Such services can improve prescribing, particularly for patients with complex long term conditions, and can help to address issues of adherence and patient literacy with medicines. This can be important for the elderly, but also for Maori and Pacific populations that experience a disproportionate burden of long term conditions.

Many PHOs operate a primary care mental health service, typically taking the form of access to a number of subsidised counselling sessions upon referral from a general practice. These services tend to be overwhelmed by demand, and are often very constrained in their access criteria in order to keep them open.

**Mental health services**

**Specialist nursing**
PHOs often provide specialist nurses to visit practices and work with general practitioners and practice nurses, for example in the management of diabetes or respiratory conditions. In many cases this is supplemented by the provision of PHO supported screening and monitoring programmes. For example, spirometry programmes are increasingly common, in which advanced respiratory monitoring can occur in a general practice rather than in a hospital outpatient setting, with support and quality control to ensure that the procedure is carried out effectively and accurately in the primary care setting. Retinal screening is another example of a preventive programme that a PHO may wrap around front-line practices.

The specifics vary, but some PHOs and DHBs now support practices with some form of social support role to work with patients and whanau. The kind of role can vary significantly, from a qualified social worker able to work with whanau in a practice population, to a navigation worker who may have a more informal role in supporting patients and whanau to understand and access the range of services available, to a nurse who is focussed upon high need patients living at home with complex conditions.

**Social support roles**

**Acute demand management**
Services for supporting primary care to manage acute demand in the community, such as the Primary Options for Acute Care programme in Auckland, or the Acute Demand programme in Christchurch, typically provide funding for primary care to do home visits and to deliver a range of services outside the usual scope of general practice activity, such as home based IV antibiotics.

Some PHOs operate palliative care programmes, providing funding for home visits and extended visits to support terminally ill patients in their home.

**Palliative care**

**Sexual health programmes**
In some cases, PHOs provide sexual health services, with additionally subsidised or free sexual health consultations. These increase access to sexual health care, particularly for younger populations that may not be well connected to their primary care service and may not otherwise experience good continuity of care.
In support of this range of services, and of the core clinical work of the medical and nursing team, PHOs typically deliver some form of continuing professional development programme. In some cases, these programmes are specifically funded by a DHB, and may have a high level of capacity to review evidence on best practice, analyse local data on practice variation and address important service and quality issues for a local population, with coordinated interprofessional education material for the whole clinical team. In other cases, education programmes can be conducted with little or no specific funding, and may consist of a few seminar or education sessions provided with the support of hospital specialists.

The core model may be supplemented or amended in several ways, particularly where there are challenges in providing care to a population with specific needs such as a rural community, or a community with high levels of health and social need. While the core model and funding approach for the general practice component of primary care tends to remain the same in these cases, the workforce mix may be different (for example with nurse practitioners alongside general practitioners, or in some cases leading a service), or specific additional services may be funded in order to improve access to care or to inject additional capability for linkage to social support and other services, such as Whanau Ora. The particular arrangements in these cases are often dependent upon specific agreements with a DHB or other funder (such as an Iwi), and often work in a hand to mouth fashion in an environment of financial constraint with short term contracts, high bureaucracy contractual arrangements, and little assurance of continuity and sustainability of service. When DHBs come under financial pressure, funding for some of these supplementary services in primary care can be the first to suffer cuts. The upshot of this is that some services with high need communities manage to provide a broader front line model of care than the traditional general practice model, but that it is difficult to do this in a systematic and sustainable fashion, and these progressive models therefore tend to be vulnerable.

The overall picture of the past two decades has been one of relatively slow change in the organisation of many front line general practices, but widespread locally driven development of services wrapped around the traditional core, with substantial variation in the service offering and form of delivery across New Zealand. The development in recent years of new core models of general practice, providing greater flexibility to respond to patient need, and a more sustainable workforce mix, has been within this context of wider service development across primary care.

### 2.2 Basis for a new model

There is an extensive literature on aspects of primary care. This is not the place for a comprehensive review, but there are a number of key points that are relevant for thinking about new models that are supported by aspects of literature. Moreover, in recent years New Zealand primary care leaders have investigated some key international models of progressive, integrated primary care. These range from the United States origins of what has become the New Zealand Health Care Home model, to whole system approaches to health services. Two particularly prominent examples of the latter that are currently being discussed widely in New Zealand include the Nuka model, at South Central Foundation in Alaska, and the Montefiore community oriented primary care system in New York.

#### 2.2.1 Some lessons from the literature

Without undertaking a comprehensive literature review, there are a number of key points that can be taken from widely cited studies and commentary that sensibly inform the basis of planning for a new model in New Zealand.

**Effective and easily accessible universal primary care can reduce inequalities.**

An extensive review by Starfield et al. (2005) uses evidence from international comparisons to demonstrate that more primary health care resources (in terms of workforce, and particularly in terms of primary care physicians) reduces disparities in health, with greater impacts on health in more socially deprived areas. Within the United States they show that the adverse impact of income inequality on several very clear health outcome measures health is moderated where there is more primary care workforce.
Resource and access are not the only issues: primary care also has to be responsive.

Sheer resource alone is not the only factor in reducing inequalities. For example, Asaria et al. (2015) examined inequality within the English NHS, and found that while there continue to be reductions in inequalities of primary care access and quality, there are only incremental improvements in inequality of outcome. The unsurprising conclusion is that interventions to reduce inequality of outcome are complex.

Primary care must become more comprehensive and multidisciplinary

In an editorial, Roland and Nolte (2014) argue that traditional general practice must change to respond to contemporary challenges, with increased access to multidisciplinary teams and facilities for investigation and treatment, and that this is at odds with the traditional organisation of general practice in the UK. A recent review and editorial (Bitton 2018) argues that comprehensive primary health care (in the sense of offering a wide range of responses that are tailored to an individual or whanau with a wider scope than addressing biomedical problems), should be a policy goal, with primary health care offering a comprehensive range of services across both health and social domains.

Effective primary care requires investment

Kringos et al. (2013) point out that strong primary health care systems (and particularly aspects of continuity between a patient and their carer) are associated with better health and lower ineqiuity across populations, but also with higher health expenditures (although also with slower growth in health expenditure), possibly because of the decentralisation of service delivery that arises from strong locally oriented primary health care. Schafer et al. (2016) found that European countries that had invested in primary care had managed to generate increased primary care comprehensiveness, with a wider range of services and more preventive care.

Future models should be based upon multidisciplinary primary care teams supported by good information

In a review of some key international primary care systems, including some in New Zealand (but framed for a UK audience), Smith et al (2013) proposed five design principles for future models of primary health care:

1. Primary care is delivered by a multidisciplinary team in which full use is made of all the team members, and the form of the clinical encounter is tailored to the need of the patient.
2. Primary care practitioners have immediate access to common diagnostics, guided by clinical eligibility criteria.
3. There is a single electronic patient record that is accessible by relevant organisations and can be read and, perhaps in future added to, by the patient.
4. Primary care organisations make information about the quality and outcomes of care publicly available in real-time.
5. Primary care has professional and expert management, leadership and organisational support.

Considering these design principles, New Zealand primary care has made some progress in the last two decades on principles 1, 2 and 3, but has scope to go much further on each of them. There has been relatively little progress on Principle 4. Compared to many other jurisdictions New Zealand primary care is relatively strong on Principle 5, with a generally high level of capability both at PHO level and nationally and less fragmentation from the rest of the health system than found in, for example, the UK or Australia.

2.2.2 Key features of Nuka

Southcentral Foundation (SCF) is an Alaska Native non-profit health care organization established in 1982. It provides integrated primary health care services to a high need population of approximately 65,000 people, with over 2000 employees and a budget of US$227 million. SCF also operates the Alaskan Native Medical Center, a 150 bed hospital. SCF is funded through a mix of third party health insurance payments, principally through Medicare, and additional state grants. SCF embarked upon a major redesign of health services in the 1990s, in close partnership with the Alaskan indigenous community. The result was the Nuka model, which has seen significant improvements in health outcome for a high need indigenous population.
The Nuka model is premised upon “customer-owners” having control over their own care, in a relationship of continuity with a generalist multidisciplinary primary health care team.

A team serves approximately 1400 people, and a group of six teams constitutes a clinic, serving approximately 8400.

The workforce for each team includes:

- 1 general practitioner
- 1 nurse case manager
- 1 or 2 administrative case management support staff
- 1 certified medical assistant

Integrated care teams are wrapped around the primary care teams, with:

For each primary care clinic of 8400 people:

- 0.7 FTE dietician
- 1.0 pharmacist
- 2.0 behavioural consultants
- 1.5 midwives

The model has 1 manager per clinic, who is supported by front desk staff.
The behavioural health consultants support the general practitioners and other team members in identifying behavioural health issues, carry out screening and assessment, join other team members in discussions and care conferences with customer–owners, provide brief behavioural interventions, make referrals to specialists for longer term interventions where needed, and support other clinical team members. This is not a role that is currently deployed in New Zealand, although there may be elements of it in services such as whanau ora, and in primary mental health services.

Benefits of the approach include (Collins 2015):

**Relationships**
The system enables small primary care teams to develop meaningful relationships with the individuals and families on their panels. The teams are better placed to support their populations because they understand their motivations, their clinical history, their personal backgrounds and their families.

**Holistic Care**
The primary care teams can provide holistic care for their populations, by combining a range of generalist skills covering both physical and mental health in the teams and bringing specialist skills into the teams where needed, rather than referring people out to other teams. The model supports coordinated care for the entire population, in comparison with models where only higher-risk groups are referred out to care co-ordinators and multidisciplinary teams.

**Structure**
The way Southcentral’s teams are structured means that there are opportunities for substitution between staff. Employees are able to work at the top of their licence, with doctors handing tasks to nurses, who hand tasks to the medical assistants and administrators. Doctors and nurses can spend more time supporting those most in need, because they aren’t spending time on routine activities.

**Model**
The model circumvents the general practitioner as the bottleneck that limits throughput in a primary care clinic. In traditional models, the doctor holds consultations with almost everybody who contacts the clinic. In Southcentral, people are sent directly to the right person.

The model supports closer joint working between the more specialist staff in the integrated teams and the generalists in the primary care teams. The specialists spend more time supporting the primary care teams than if they operated in separate units. The system also allows primary care staff to make rapid referrals and ‘warm’ handovers of service users to specialists where needed.

**Small Teams**
Small teams are fully responsible and can therefore be held fully accountable for the care of people on their panels, something that would not be possible if they were responsible for only part of the jigsaw.

2.2.3 **Key features of Montefiore**
The Montefiore Health system operates on a much larger scale, providing primary health care and hospital services to over 3 million people, largely centred in the highly deprived Bronx district of New York. Montefiore is primarily funded through third party insurance, with a component of risk based capitated contracts covering a population of approximately 400,000 people. Montefiore owns and operates some services directly, but is also a partner with other organisations for the delivery of many of its services. A key guiding principle for care at Montefiore is to identify the underlying cause of ill health, whatever that may be.

In Montefiore owned primary care clinics doctors work with teams of critical care registered nurses (CCRN) who provide some health care services and active case management for patients with complex needs, and licenced practical nurses (LPNs) who support doctors in some examinations and carry out tests and vaccinations. Psychiatrists, behavioural health staff, social workers, pharmacists, diabetic educators and others are either co-located with or circulate among the clinics. Behavioural health staff are typically psychiatric social workers, or for children, clinical psychologists, with psychiatrists also available for specialist support when needed. Montefiore also wraps its services around a network of traditionally doctor owned clinics.

Montefiore operates a care management organisation that focuses on patients with complex needs. In this model patients who could benefit from intervention are identified by data analysts. Case management services are organised within pods, care teams and case management units. There are four pods, each
overseen by a clinical director, each responsible for overseeing around 1,600 patients. Each of these pods has two clinical managers, each of whom in turn oversees a care team of around 12 registered nurses, licensed practical nurses (LPNs) and social workers responsible for a total of around 800 patients. Within the care teams, the nurses and social workers are organised into units of three: a registered nurse working with two licensed practical nurses, or a licensed practical nurse and a social worker, with each unit in charge of around 200 patients. Nurse case managers follow a structured process to reveal the range of the health care, social and environmental factors preventing patients' maintaining better health, and then find targeted interventions to address them, becoming 'life managers' for their patients.

Benefits of the Montefiore approach include (Collins 2018):

- Primary care staff can hand patients over to the behavioural health teams in person, rather than scheduling separate appointments and sending patients to facilities they are not used to;
- Primary care and behavioural health services can follow patients and engage more actively in their care between clinic visits. Nurse care managers follow up with patients to check their scores on questionnaires on anxiety and depression. If necessary, they can liaise with a psychiatrist to discuss an increase or change in medication before emailing the primary care doctor;
- Specific interventions are developed for particular diseases where they raise specific problems, but are integrated within care management for the population with complex needs rather than creating separate programmes. Nurse case managers overseeing patients with complex needs can bring these services into the package of support for their patients where required;
- Pharmacists and nutritionists can be rotated into smaller practices so that they can offer the same services as larger clinics.

2.2.4 Discussion

There are several points that must be borne in mind when considering the two examples discussed here, and some of the lessons from the wider literature.

The level of resource devoted to health care in other jurisdictions, and particularly in the US, can often be much greater then is seen in New Zealand. While models and approaches are important, sheer levels of funding are also part of the picture, and can bedevil fair comparisons between models. For example, the Nuka model spends, in New Zealand dollars, approximately $330 million for primary health care on a population of 65,000 people. Even allowing for purchasing power differences, this is much more than is routinely spent on primary care for any New Zealand community. Such high levels of resource also mean that there may be more scope for finding efficiencies in care while improving quality. It is instructive that Kringos found that more comprehensive primary care was associated with higher overall care costs in European countries, where spending on all forms of health care is lower than in the United States.

There is a clear trend in the systems considered here, and elsewhere, towards wrapping a comprehensive range of professionals around the traditional primary care team, giving an ability to address needs holistically and to considering physical health, mental health and social need together. This in turn provides the capability to link or navigate people to sources of help for underlying issues, rather than limiting care to that which can be directly provided by a small medical and nursing team. There are elements of this approach in some New Zealand primary care settings, where practices use navigators or social workers, but these examples tend to be the exception rather than a routine model. The behaviourist role, encompassing elements of mental health care as well as general life and social support, is also an important component of these models.

Co-location is important, with the ability for the core primary care team to interact in a direct and timely manner with behaviourists and case managers. This is supported by well developed information systems, but the direct contact is still important, as well as providing services to people in a more familiar environment. Referral to a service in a different time and location may present barriers to access, particularly if travel and time constraints are a challenge for the patient.
2.3 A potential model

A potential model will have to offer an improved, comprehensive primary care service for New Zealanders, while recognising that the primary care workforce, and the health workforce more generally, is in a period of change. A potential model will therefore have to:

- Be capable of responding to unmet need for primary care;
- Recognise the changing roles and career expectations of medical practitioners;
- Build upon emerging workforce roles, and particularly the increased scope of practice available to nurses;
- Build primary health care teams that have a wider range of capability than is currently the norm;
- Articulate an approach that can be implemented widely across different communities, with a high degree of local responsiveness and local variation where appropriate.

Some key assumptions in setting out an alternative model are:

<table>
<thead>
<tr>
<th>Change in Clinical Roles</th>
<th>There will be less of an exclusive focus upon individual doctor consultations, and medical roles will see an increased proportion of activity that is not directly patient-facing, for example planning complex care, contributing to training and development, working with other professionals to review care, providing care remotely and by electronic means etc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>More Nurses</td>
<td>There will be an increased proportion of nurses in the core primary care team, and a substantial proportion will work to a high scope, including as nurse practitioners, nurse prescribers and nurse specialists</td>
</tr>
<tr>
<td>Workforce Components</td>
<td>The overall workforce components are likely to be similar for communities with high need, and for those communities with lesser health need. But the level of input in terms of FTE will be significantly greater in high need communities</td>
</tr>
<tr>
<td>Health Information</td>
<td>There will be much increased focus on aspects of health information, with the primary health care team acting as a supporter of health literacy, and assisting individuals and whanau to navigate their way through a wide variety of sources of health information The primary care team will have a role to support individuals in the guardianship of their health information, making informed decisions about when to share information and with whom;</td>
</tr>
<tr>
<td>Comprehensive Teams</td>
<td>Delivery of the wider, comprehensive team should be co-located with the core primary care team where feasible, but where small size or rurality (for example) make this difficult, services will still be provided via PHOs or other organisations wrapping the comprehensive team around core primary care. Otherwise inequities would arise for smaller communities;</td>
</tr>
<tr>
<td>Training</td>
<td>Training is a core component of primary care, and involvement in medical, nursing and allied health training will be routine in all services</td>
</tr>
<tr>
<td>Physical Space</td>
<td>It is assumed that, whatever the business model may be, services have a physical facility that is adequate for the workforce and the extended activities envisaged in the model</td>
</tr>
</tbody>
</table>
More specifically, the potential comprehensive primary care team could include the following roles:

- General practitioner with increased non patient facing time
- Nurses (at a ratio of 2 nurses to one GP, rather than the more typical ratio of 1:1 or lower that is common today)
- Health care assistants
- Behavioural consultants (typically with counselling skills)
- Clinical pharmacist
- Social worker, Kaiawhina or navigator
- Physiotherapist
- Manager
- Reception and admin staff

The physiotherapist role is one that has been identified here, but is not an explicit part of the team in SCF or Montefiore. Physiotherapy is a profession that is arguably more developed in New Zealand than in some other countries, and physiotherapists can have an important role in managing falls prevention, mobility and respiratory care. Examples of services that integrate physiotherapy into core primary care are beginning to be developed in different parts of New Zealand, and the falls prevention programme developed by ACC and DHBs is being widely rolled out, integrating mobility support into wider health care. For these reasons, it is suggested that physiotherapy should be a part of the comprehensive primary care team under a new model.

The health workforce is dynamic and evolving. New professional roles are being developed, and it will be important to respond accordingly. For example, physician assistants are now working in some parts of New Zealand, and if this profession continues to develop, the mix of nurses, doctors and physician assistants could change within the overall resource envelope for a practice.

2.4 What this would achieve

Implementing this team as the standard for New Zealand primary health care would represent a significant jump from the traditional model. While not going as far as some international examples in transforming the entire approach, making this model standard at a national level for five million people would be one of the biggest changes to the overall approach to primary care ever experienced in New Zealand, and would do so on a scale much greater than individual case studies such as SCF and Montefiore. This approach would take some of the innovative work on wider primary health care that has happened in various sites around New Zealand, and embed it as a systematic model that is not dependent upon small scale pilots, short term agreements or enthusiastic individuals.

Moving the workforce in this direction (in combination with enabling mechanisms including new business models, funding models, workforce development and improved information systems) will have the impact of:

- Increasing the responsiveness of primary care by having resources specifically available for engagement with individuals and their whanau, including the ability to integrate physical and behavioural aspects of care, and significantly increasing the ability to address mental health as a routine element of care
- Increasing access to mental and social support services
- Reducing inequity by increasing the ability of primary care to address underlying causes of ill health and to connect with a wider range of health and social agencies in an integrated fashion
- Supporting health professionals to work to the top of their scope
- Increasing the sustainability of primary care services by redistributing activity across a wider range of professionals
- Readyng primary care to take advantage of technological change and innovation (for example by using clinical time differently for electronic interactions with patients, or using decision support and artificial intelligence tools to support decision making across the wider team)
- Contributing to workforce development through interprofessional training

This model would represent a progressive, modern system of primary care that could serve New Zealand for a generation.
3 CHARACTERISTICS OF A NEW MODEL

The core component of any primary care team is the patient and their whānau as defined by them. To support the patient, it is proposed that the primary care team incorporates the following roles: GP; nurse and extended scope nursing; behaviourist/counsellor, social worker/Kaiawhina.Navigator; health care assistance; clinical pharmacist; and, physiotherapist. In addition to the core team training roles in multiple professions, management and administration should be standard.

3.1 Workforce

Estimates of the workforce that might be needed under the new model will depend upon the level of need of a given enrolled population. For the sake of generating initial estimates, two scenarios have been developed, one for a very high need population, and one for a lower need population in socioeconomic terms, but reflecting some of the pressures of ageing that are increasingly being felt.

Some of the workforce estimates in these scenarios are more robust, being based upon existing examples of New Zealand primary health care centres. A few centres with very high need populations have indicated the workforce they operate with, and the workforce that they would seek to have in order to meet the needs of their population. These are centres with high Maori and Pacific populations, and in some cases with refugee communities. These along with estimates of current workforce in typical general practices serve as a starting point from which to estimate a changed workforce configuration, with fewer doctors and more nurses providing the core clinical input. While these sources have been used as a basis for this estimate, it should be noted that high need can be defined in many possible ways, and that this analysis should not preclude the development of new and better ways to define high need populations.

Other estimates are necessarily more speculative, and are based upon a crude extrapolation from overseas models or anecdotal information from PHOs about existing levels of support to practices. All workforce numbers should be treated as a first estimate for the purpose of identifying the approximate level of resource required to operate the proposed model. Any further development of the model would require detailed debate about and modelling of the level of resource reasonably needed in the different roles.

It should also be recognised that this workforce picture is intended as a typical distribution of resource for each of the two scenarios. Any individual health centre might have a different distribution of (for example) nurse practitioners, nurse prescribers and registered nurses to reflect community need, the vagaries of recruitment and workforce availability, and the best balance of skills with other individuals in the team. Nor is there an intention to enforce a specific model in detail, which could preclude innovation and community responsiveness. The workforce picture is intended to be a typical scenario, not a straitjacket, and is primarily a starting point for thinking about how much resource would be needed to implement such a model.
Doctor and nurse estimates have been derived through a process of:

- Estimating an approximate overall level of input in the traditional model (High need: 10 doctors, 10 nurses. General: 7 doctors, 7 nurses);
- Adjusting the numbers to keep the same overall level of FTE with a ratio of 2 nurses to one doctor;
- Adding 20% to doctor FTE to keep the same patient contact time, but reflecting that non patient facing time increases from an assumed average of 10% now, to 30% in the future.

The additional non patient facing time for the medical workforce provides for a wider range of activity to be an explicit part of the doctor role. This includes, among other potential activities, non face to face clinical advice; participation in multi-disciplinary team meetings; teaching and training; liaison with specialists; stewardship of clinical information; analysis of population and epidemiological trends.

There are several points to note:

**Focus on Equity**

Under these scenarios the high need population has an overall level of human resource 38% greater than the non high need population. Excluding trainees, reception and management, the high need population has 47% more FTE in the team than the non high need population. These scenarios therefore envisage targeting a significant amount of workforce resource to communities demographically identified as high needs. Compared to some typical examples of high need practices this model increases the clinical and professional FTE for high need populations by more than 25%.

**Nursing workforce**

The distribution of nursing personnel between nurse practitioner and registered nurse for high need populations is loosely based upon some existing examples. For general populations the distribution is a starting point. The reality is that centres would almost certainly see a fair amount of variation in these proportions to reflect workforce availability and local skill mix, among other factors;

**Behavioural Support**

The behaviourist FTE are lower than seen in, for example, SCF, which sees 2.4 behaviourists per 10000 population (in a high need indigenous community). There is scope to increase this, but it is assumed that the additional role of social worker/kaiawhina/navigator (depending upon the cultural and community

---

**Figure 3 Workforce estimates**

<table>
<thead>
<tr>
<th>Personnel</th>
<th>FTE per 10,000 high need patients</th>
<th>FTE per 10,000 general patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>7.9</td>
<td>5.5</td>
</tr>
<tr>
<td>Nurse practitioner</td>
<td>5.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Nurse</td>
<td>8.4</td>
<td>7.3</td>
</tr>
<tr>
<td>Reception/administration</td>
<td>6.7</td>
<td>5.0</td>
</tr>
<tr>
<td>Behaviourist/counsellor</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Social worker/Kaiawhina/Navigator</td>
<td>2.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Health care assistant</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Clinical pharmacist</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Trainee doctor</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Trainee nurse</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Trainee allied health</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Student clinicians (at any one time)</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Manager</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total team FTE</strong></td>
<td><strong>42.5</strong></td>
<td><strong>31.3</strong></td>
</tr>
</tbody>
</table>
orientation of the individual health centre), will to some extent overlap with the activity of a behaviourist as implemented in South Central Foundation. It should also be noted that there is an implicit assumption here that existing primary mental health programmes continue, or are enhanced. The behaviourist role is envisaged as additional to existing mental health services, not as a replacement. An addition to this model which could be considered is the availability of a community psychiatrist to deliver services in primary care and/or to be on call for advice to general practitioners and nurse practitioners.

**Allied Health**

The clinical pharmacist estimate is based upon a small number of existing practices, and may be on the low side. It is worth noting that the level of clinical pharmacist resource reported in Nuka and Montefiore appears to be higher than this. The physiotherapist estimate is a crude guess at the level of physiotherapist resource involved in non ACC work for a population of this size. This will require refinement with a full analysis of activity in a potential physiotherapist role, and an estimate of population need.

**Technology**

Technological changes (such as patient portals) are already bringing efficiencies to administration and reception roles. These have not been reflected in an assumption of fewer FTE for these roles compared to the status quo, in part because there is a counterbalancing trend – the increased number of professionals in the practice team will need more administrative support. A detailed model would have to consider this issue carefully, but for the present purpose of an initial estimate the assumption is that any future efficiencies in administration will be offset by a greater need for support.

**Workforce Development**

The trainee positions are in addition to core capacity. For the sake of simplicity, there is an implicit assumption that any additional productivity they contribute to the centre will be offset by the resources involved in supervising them. A more detailed analysis will have to consider this assumption, and draw upon information from training institutions to generate a more nuanced estimate of resource needed for supervision and the trade-off with productive care delivery. The Royal New Zealand College of General Practitioners has conducted analysis on the net costs of trainees in general practice.

**Maternity and Well Child**

Maternity and Well Child services have not been explicitly considered in this initial model, although there is scope to model the provision of these services within the framework that has been outlined here.

### 3.2 Discussion

Overall, this extended care team represents a substantial change from the existing standard of general practice care in New Zealand. There are some examples of services which may be close to the picture set out here, but they are not common – this approach would make such progressive services the norm for New Zealand. Shifting the entire distribution of existing primary care models to the point that this approach represents the common standard would be a significant change for primary care, and for the health system as a whole.

In some respects, the model described here is more radical than the Nuka approach in that it envisages a greater shift towards nursing roles than is seen at SCF, where medical and nursing roles appear to have a 1:1 ratio. This model is very strongly underpinned by the nursing workforce, and relies upon a large, and highly skilled nursing team.

Some of the extended team described in this model already exists, in some cases, within PHOs that wrap services around front line health centres. That model would have to prevail where centres are unable or unwilling to incorporate the extended team directly into its organisation, whether for reasons of size or remoteness. But where feasible it would be preferable for the extended team to be functionally, and possibly organisationally, integrated into front line health centres. Co-location is clearly important, but one of the interesting points in both Nuka and Montefiore is that the organisation of the extended team into groups that wrap around specific smaller front line teams, each serving a relatively small population, maintains a level of continuity for patients to professionals, but also from professional to professional.
The approach taken here to describe a model is silent on some important points. One of those is the organisation of after hours services. There is an implicit assumption that primary care will continue to have responsibility for the delivery of services 24 hours a day, as is currently the case. There is such great variation in the current state of organisation of after hours primary care services that it is difficult to make a generalisation about where the resources for those service lie — in some cases they are provided by primary care organisations with additional funding from DHBs, in some cases provided by a DHB emergency department with funding clawed back from PHOs, and in some cases complex combinations of these apply depending upon the time of day or week. Overall, there is an assumption under this model that primary care services will continue to have responsibility for after hours care, whatever the eventual mode of delivery, consistent with the philosophy of comprehensive primary health services having overall responsibility for the primary care of a population.

A further important point is that the changed workforce distribution described in this model places general practice in a strong position to deliver new services in the community on a sustainable basis. With a much increased nursing role in the primary health centre general practitioners will have more freedom to work to the top of their scope (with appropriate support from specialists) to deliver care that today is usually the domain of hospital outpatient services. Such a shift in delivery has occurred in some parts of New Zealand for some services but progress is patchy, in part because of physical and workforce constraints. While such services will still need to come with resources as their setting is changed from hospital to the community, the workforce described in this primary care model is better equipped to pick up such services on a sustainable basis than is often the case today.

### 3.3 A current Example: Porirua Union and Community Health Service

Porirua Union and Community Health Service is a not for profit low cost health service that provides affordable and accessible services to the community it serves. PUCHS covers the wider Porirua area, up to and including Johnsonville and Paremata.

With a diverse and well qualified clinical staff PUCHS has been providing quality primary health care to the Community since 1990.

PUCHS serves a high need population of 6,000, with 11% refugee enrollees, 49% Pasifika and 25% Maori. The practice includes Community Health Worker, Cross Cultural Health Worker roles, as well as a Health Care Assistant and Clinical Pharmacist.

The practice team includes:

- Community Health Worker
- Cross Cultural Health Workers
- Health Care Assistant
- Clinical Pharmacist

This workforce is already some way towards the proposed model, and with the addition of a behaviourist and a physiotherapist, a rebalancing across medical and nursing roles, and some additional per capita clinical resource to reflect the high need in the population, would be close to the proposed model for a high need practice. Under the model proposed here, this high need service would see an increase of 26% in total clinical and professional FTE compared to the current workforce (excluding trainees and students).
4 IMPLEMENTING A NEW MODEL

This section discusses the approximate overall resource that would be needed to deliver the model proposed above. Effective funding mechanisms and not presented in this report.

4.1 Physical Space

The physical infrastructure will remain an important element of general practice, and in many cases is a constraint upon developing modern models of care and professional teams. A fit for purpose facility is an absolute prerequisite for teamwork, with adequate space for professionals to work with patients, enough room for trainees and students, and spaces for multidisciplinary teams to confer.

To estimate a cost for a facility that would house a workforce like that described here, it is possible to start with a crude estimate of space needed. The following assumptions can be made:

- 80% of the clinical and professional FTE are likely to be working with patients at any one time, and will need a space to do so, whether configured as a consulting room or as bays;
- The average size of such a space is $12m^2$;
- A larger meeting room is needed at $24m^2$, to support multidisciplinary work and education;
- Reception, waiting room and toilets at $40m^2$;
- A procedure room at $20m^2$;
- Administration area at $24m^2$;
- Circulation adds 30% to the total;
- The cost of the area is $5000/m^2$;
- A flat additional cost of $500,000 represents the value of the land on which the facility is placed. This is likely to vary very significantly across New Zealand, but is included as a holding figure for the sake of argument.

These assumptions generate a total facility cost of $3,171,500 for the high need team serving 10,000 people, and a cost of $2,625,500 for the smaller non-high need team. Applying a capital charge of 6%, representing return to the owner of the facility (equivalent to the 6% capital charge levied on government equity in DHBs), and depreciation of 2.5%, gives an annual facility cost of approximately $270,000 for the high need service, and $223,000 for the non high need service. This could be realised in several ways, whether as rent to an external party, or as part of the profit for a clinician owner. Whatever the specific arrangement in a particular case, being explicit about the value of the facility is the fist step in being clear about how important it is, and how it should be paid for.

These are clearly very approximate estimates, and the issue of land cost means that substantial variation can be expected around them. But it is important that the cost of an adequate facility is represented in the overall picture of resources needed to deliver a primary health care service.

4.2 Workforce

The approach presented here will require substantial workforce development, with a significant increase in primary care workforce, particularly among nurses, behaviourist experts, and social worker/kaiahwina. Training is a core part of service delivery, rather than an add on, and this has been represented by including three trainees and two students within the overall workforce estimate above. Primary care will need to draw upon a new workforce, and will therefore need to be an active part of developing that workforce.

This discussion does not address the specific training activities that will be required of senior clinicians. But it is assumed that part of the role of a senior clinician is to provide training and support for students and postgraduate trainees, and that this activity must be part of the overall paid role of a clinician rather than a voluntary addition.
4.3 Cost

The cost of operating the model suggested here can be estimated from the proposed workforce. Key assumptions are:

- The salary cost of a GP is based upon the cost of a DHB senior medical officer. Based on data provided by a large DHB, the average actual paid cost of salary to SMOs, before tax, but including a range of allowances, is $280,000 per annum;
- Costs of nurses, admin and allied health workers are taken at the ¾ point of the seniority scale from current DHB MECAs, representing the average level of seniority expected in primary health care services;
- A manager fulfils a senior business management role within the practice, and is paid at a rate of $120,000 per annum, a level seen currently in general practices that employ a senior manager;
- Consumables are costed at a level of 4% of the salary bill;
- Salaries are not included for students or trainees;
- ACC and Kiwisaver add 4.5% to the salary bill.

Together with the facility cost estimated above, these assumptions give a total cost for operating the proposed model.

<table>
<thead>
<tr>
<th>Role</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>$280,000</td>
</tr>
<tr>
<td>Nurse practitioner</td>
<td>$110,146</td>
</tr>
<tr>
<td>Nurse</td>
<td>$77,443</td>
</tr>
<tr>
<td>Reception/admin</td>
<td>$50,000</td>
</tr>
<tr>
<td>Behaviourist/counsellor</td>
<td>$90,862</td>
</tr>
<tr>
<td>CHW/SW/cultural</td>
<td>$72,772</td>
</tr>
<tr>
<td>HCA</td>
<td>$48,698</td>
</tr>
<tr>
<td>Clinical pharmacist</td>
<td>$90,862</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>$90,862</td>
</tr>
<tr>
<td>Manager</td>
<td>$120,000</td>
</tr>
</tbody>
</table>

*Figure 4 Estimated salaries*

These then translate into total costs for each of the two workforce models - high need and non-high need, presented in the table below (Figure 5). As with the facility costs, this represents an approximate estimate, and will require significant analysis and refinement if developed as a basis for future services.

The model proposes a substantial level of targeting towards high populations. As a crude average, this implies a total revenue of $554/person for high need populations, and $386/person for non high need populations. In the two illustrative examples presented here, the high need service has a premium of 43% in overall funding compared to the non high need example. In reality, most enrolled populations are complex mixtures of different levels of need, and for any one service the high need/non-high need components would have to be weighted accordingly.

A simple extrapolation to a national picture can be made based on a total New Zealand population of 5 million people, with one third of that population being high need (on whatever criteria are used to determine high need). On that basis, the total cost of funding a primary care service nationally is $2.2 billion, of which $924M is targeted towards a high need third of the population, and $1.31 billion provides service for the two thirds of less high need population.
Estimated costs for each of the two workforce models, presented in the table below (high need and non-high need):

<table>
<thead>
<tr>
<th>Cost Centre</th>
<th>High need FTE/10,000</th>
<th>Cost</th>
<th>Non-High Need FTE/10,000</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>7.9</td>
<td>$2,212,000</td>
<td>5.5</td>
<td>$1,540,000</td>
</tr>
<tr>
<td>Nurse practitioner</td>
<td>5.0</td>
<td>$550,730</td>
<td>2.0</td>
<td>$220,292</td>
</tr>
<tr>
<td>Nurse</td>
<td>8.4</td>
<td>$650,521</td>
<td>7.3</td>
<td>$565,334</td>
</tr>
<tr>
<td>Reception/admin</td>
<td>6.7</td>
<td>$333,333</td>
<td>5.0</td>
<td>$250,000</td>
</tr>
<tr>
<td>Behaviourist/counsellor</td>
<td>1.0</td>
<td>$90,862</td>
<td>0.5</td>
<td>$45,431</td>
</tr>
<tr>
<td>CHW/SW/cultural</td>
<td>2.5</td>
<td>$181,930</td>
<td>1.0</td>
<td>$72,772</td>
</tr>
<tr>
<td>HCA</td>
<td>4.0</td>
<td>$194,792</td>
<td>3.0</td>
<td>$146,094</td>
</tr>
<tr>
<td>Clinical pharmacist</td>
<td>0.5</td>
<td>$45,431</td>
<td>0.5</td>
<td>$45,431</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>0.5</td>
<td>$45,431</td>
<td>0.5</td>
<td>$45,431</td>
</tr>
<tr>
<td>Manager</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Trainee doctor</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Trainee nurse</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Trainee allied health</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>2.0</td>
<td>$120,000</td>
<td>2.0</td>
<td>$120,000</td>
</tr>
<tr>
<td>IT/communications</td>
<td></td>
<td>$30,000</td>
<td></td>
<td>$25,000</td>
</tr>
<tr>
<td>Rental/capital</td>
<td></td>
<td>$269,578</td>
<td></td>
<td>$223,168</td>
</tr>
<tr>
<td>Consumables</td>
<td></td>
<td>$177,001</td>
<td></td>
<td>$122,031</td>
</tr>
<tr>
<td>Cover for leave</td>
<td></td>
<td>$442,503</td>
<td></td>
<td>$305,078</td>
</tr>
<tr>
<td>ACC/kiwisaver etc.</td>
<td></td>
<td>$199,126.37</td>
<td></td>
<td>$137,285.32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$5,543,239</strong></td>
<td></td>
<td><strong>$3,863,348</strong></td>
</tr>
</tbody>
</table>

*Figure 5 Estimated total service cost for 10,000 enrolled population*

The current total level of revenue for general practice is unclear, since the level of co-payment varies, and even given a nominal level of co-payment, actual charging policies can differ substantially from practice to practice. Moreover, individual DHBs may fund additional services around general practice, but these are not usually transparent at the national level. As a starting point, current capitation is at a level of approximately $930M nationally, although up to approximately $150M of this lies in the flexible funding pool, and some of that does not flow directly to practices. If capitation funds, typically, 55% of the total cost of a typical general practice, then it is likely that national co-payment revenue is, very approximately, in the region of $750M. This gives a very approximate total cost of providing primary health care, as is it is in New Zealand today, of approximately $1.7 billion. The true level of current funding is likely to be higher, since PHOs and DHBs fund some specific services (such as clinical pharmacy), so this is a low estimate of the true level of current investment in primary care.
It should be noted that ACC revenue for general practice has not been considered in this analysis. ACC is typically a small component of urban general practice funding, but is often very significant for rural practices. Applying this approach in a rural setting would require careful analysis of the roles that primary care plays in rural communities, and how these differ from urban primary health care.

4.4 Discussion

The outline presented here suggests a model for the future of primary care services in New Zealand, drawing upon aspects of models that exist both within New Zealand and overseas. Many aspects of the approach suggested here are already in place in some parts of New Zealand, but where they do exist they are often present on an ad hoc basis, and are not a sustainable component of a standard service. Moreover, as pressure builds up on primary care services from ageing populations, a changing workforce and changing expectations from communities, a more comprehensive standard model is needed than that which has prevailed over the past twenty years.

There will always be a range among individual services, with some willing to push new and innovative models, and others reluctant to change. But the approach outlined here envisages that the whole curve of general practice will move, and that the future standard primary health care team will look like some of the more innovative models that already exist today, while those willing to embrace further change will look for more radical models.

The level of workforce envisaged here for a high need population will equip general practice to respond to inequity in health outcomes in several ways. Firstly, the sheer level of resource proposed for a high need population is higher than is typical today, representing a jump in resource for those with the greatest need. While existing practice revenue streams are complex and highly variable, as an initial estimate this model is likely to increase the financial resource for high need populations by over 30%, representing a significant jump in investment in primary care services. Secondly, this approach envisages a broader team, co-located in general practice. The wider team has greater capability than a traditional general practice to respond to complex social circumstances that are associated with poor health outcomes, to liaise with a wider range of community services, and to include staff with specific cultural skills and experiences. This will increase the effectiveness of general practice in meeting the needs of individuals and whanau who are at risk of poor outcomes in a more traditional model.

The approach taken here has several important strengths:

**Overall Resourcing**

It is based on a picture of the overall resource needed to run a primary care service. Much analysis of primary care resources is limited to consideration of capitation funding, without considering the whole picture. Establishing the overall resource needed for a sustainable service is a pre-requisite for a policy discussion about how the service should be organised and funded as a whole.

**Reducing Inequity**

The general approach taken here of specifying a workforce in a bottom up manner means that there is scope to consider unmet need, and how primary health care services can respond to inequity. The workforces outlined here propose a significantly greater level of input for high need populations than for non-high need populations. The proposed high need workforce broadly represents the level that some health centres with high need populations already provide, with some additional resource to reflect that need is not fully met. But the levels proposed here are still a relatively crude estimate. There is scope to refine the overall approach with a more comprehensive analysis of unmet need, and therefore to estimate the service level required to address health and social inequities that can be influenced by primary health care.

**Not Prescriptive**

It is workforce focussed, but not prescriptive about roles. It will be important in the future for primary care roles to be highly flexible, to respond to and fully exploit technological change. The development of increasingly sophisticated decision support tools will mean that the capabilities of individual professionals will change, and the way that they work together as a team to serve the needs of a population will evolve.
Similarly, different communities may need variations around the models that have been presented here as typical examples. For example, the precise mix of nurses and clinical pharmacist might vary from the levels presented here in a service that works with a number of rest homes. In a community with a high proportion of Maori or Pasifika people there might appropriately be some variation around the social worker and behaviourist roles that is particularly culturally acceptable.

**Relativity**

This outline of costs is based upon benchmarking primary care costs to equivalent costs in the public hospital system. Maintaining this level of relativity will be important for the future recruitment and retention of the primary care workforce.

Clearly there are limitations to this analysis. The data on which some of the estimates have been based are not in the public domain, so there is a need to find better publically available general practice workforce information to test and improve these estimates. Similarly, the estimates for the annualised facility cost are based upon crude assumptions, and will be highly variable given differing land cost across the country. More generally, there is a debate to be had about some of the workforce roles discussed here, and how these can and should develop in the New Zealand context. These are all important limitations, but they also represent a starting point for the collection of better information and more sophisticated analysis.

The aim of this discussion paper is to generate debate about a future shape of general practice that can be implemented in a widespread, sustainable fashion, and that can respond effectively to the needs of communities across New Zealand. The estimates derived in this paper are based upon existing information and models, whether in New Zealand or internationally, but they are far from definitive. They represent a starting point for the analysis of the future workforce and resources that will be needed for effective care. What is important is the approach of considering the whole level of resource needed for a service.

It is important to achieve clarity on the workforce and resource needed for an equitable, comprehensive, sustainable primary health care service before entering into the downstream policy debates on funding mechanisms and organisational models. GPNZ hopes that this contribution will stimulate debate on the best future shape of general practice care in New Zealand.
5 REFERENCES


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