# A Rapid Review of the Health Care Home Model in Capital and Coast District Health Board





**FINAL REPORT** 

17 August 2020

Nieves Ehrenberg, Andrew Terris and Kirsty Marshall

# **About the International Foundation for Integrated Care**

The International Foundation for Integrated Care (IFIC) is a not for profit network that brings people together to advance the science, knowledge and adoption of integrated care policy and practice.

The Foundation seeks to achieve this through the development and exchange of ideas among academics, researchers, managers, clinicians, policy makers and users and carers of services throughout the World.

The Foundation's goal is to provide a unique forum to bring these various perspectives together with the aim of improving the experience of care for patients, their families and communities, while improving the overall effectiveness of health and care systems.

#### We achieve this by:

- publishing the latest integrated care related research, case studies and evidence in our peerreviewed, open-access Journal (The International Journal of Integrated Care)
- bringing people together to present and hear from the latest research, evidence, innovations and practice at our international conferences
- Integrated Care Solutions© provides customised services that combine research, best practice and expertise to design and support the effective and sustainable implementation of integrated care
- developing people and organisations by providing education and training through our Integrated Care Academy ©
- undertaking primary research and providing research and evaluation support to integrated care research-based projects
- supporting a network of global members so that they might collaborate, share knowledge and ideas and discuss the latest ideas around integrated care

IFIC has over 20,000 members in its network of over 75 countries.

www.integratedcarefoundation.org

#### **Acknowledgements**

We are grateful to the practice, community services, PHO and DHB staff that generously provided their time and insights to inform this evaluation. We also want to say thank you to Molly and Sarah for moving mountains to organise the interviews under such a tight schedule, and to Sam and Mel for answering all our information requests so promptly.

# Contents

1.	Inti	roduction	6
	1.1	Purpose of this rapid review	6
	1.2	Background to the Health Care Home model	6
	1.3	Equity and the Health Care Home	7
	1.4	Roll out of the HCH model in the region	8
	1.5	Financing the model	8
2.	Me	ethodology	10
	2.1	Evaluation framework	10
	2.2	Evaluation questions	12
	2.3	Data sources	12
	2.4	Limitations	14
3.	Fin	dings	15
	3.1	From a formative perspective	15
	3.2	Clear improvements in business efficiency through lean processes	19
	3.3	Better management of urgent and unplanned care	21
	3.4	A gap between vision and practice on proactive care	22
	3.5	Good progress supporting routine care but less so with preventative care	24
	3.6	From a summative perspective	31
	3.7	Agreement that the model helped preparedness to manage Covid-19	43
4.	Ma	aturity of the model against main building blocks of Integrated Care	46
5.	Ref	flections	51
	5.1	There was a clear need to transform primary care	51
	5.2	Change and reach occurred at an ambitious pace	51
	5.3	But some were left behind	51
	5.4	The journey is just beginning	52
	5.5	Sustainability and scalability	52
	5.6	Measures that matter	54
	5.7	Fit with broader primary care direction / system changes	55
6.	Thr	rough the looking glass	56
	6.1	Case studies	56
7.	Red	commendations	61
	7.1	Where to next?	61
	7.2	Continue strengthening primary care	62

#### **EXECUTIVE SUMMARY**

The purpose of this rapid review was to measure progress of the Health Care Home (HCH) model in achieving its aims and to inform the evolution of the model across the Capital and Coast District Health Board (CCDHB) region. The review was commissioned by CCDHB as an independent and objective formative and summative rapid evaluation, including consideration of the impact of Covid-19.

Our main reflections on the HCH model can be summarized as follows:

- There was a clear need to transform primary care The model has provided a call to action and
  a framework to move from an exhausted and reactive workforce and model of care that has
  not changed much in the last 50 years to a proactive model where staff feel empowered to
  work to top of their grade and have the infrastructure to support them.
- Change and reach occurred at an ambitious pace Coverage of over 80% of the enrolled population in the CCDHB region was reached by the third year of implementation an ambitious target to achieve. The model can best be described as delivering better coordinated care that is more accessible, timely, flexible, and efficient. The move to proactive care, the focus on prevention and on patient-centredness has not yet been strongly embedded. There was little evidence on co-production, for example and goal-oriented care and shared care plans are very much in an early stage.
- **But some were left behind** Taking an 'equity lens' was an inherent part of the model from the start but a systematic approach to reducing health inequities was not built into the original design of the HCH model of care. While it is widely recognised that access to primary health care is a major social determinant of health and is considered as a strategy for addressing health inequity<sup>1</sup>, there was not a tailored approach to improving access according to different population needs. The ability to address the social determinants of health and to reduce health inequities remains constrained. This is due to the HCH model still being, in effect, a health centric medical model. To truly address equity, it is necessary to take a population health approach and address the socio-economic drivers of health. The achievement of uptake of technology such as the portal and virtual consults need further research to understand how different populations benefit from it. A project to revise the HCH model of care requirements was carried out (March 2019) to ensure a greater focus on equity for Māori and other priority populations<sup>2</sup>.
- The journey is just beginning The model has had an overall positive impact on strengthening primary care and equipping General Practice to manage interventions more efficiently. It has brought teams together from different settings and started to bend the curve on acute and unplanned emergency admissions. It has introduced more flexibility of delivery through improved relationships and technology making it more resilient to cope with shocks such as Covid-19. In effect the HCH has improved the readiness for integration beyond health and more into the community. The HCH journey so far has succeeded in establishing strong foundations for a real system-wide transformation of health and care services towards one where people and the community are at the centre and General Practice takes on more of a support role.

<sup>1</sup> Commission on Social Determinants of Health. Closing the gap in a generation: Health equity through action on the social determinants of health. Geneva, CH: In Final report to the CSDH: World Health Organisation; 2008.

<sup>&</sup>lt;sup>2</sup> Health Care Home Collaborative Newsletter (July 2020). Enhancing the Health Care Home Model of Care – Our Journey. (Access online August 2020: https://www.healthcarehome.org.nz/download/hch-collaborative-newsletter-mocenhancement-july-2020.pdf?inline)

Our recommendations are made at two levels:

#### A. Where to next?

- 1. More ambitious integration with community
- 2. Co-design with customers
- 3. Stronger focus on equity
- 4. Review funding and support mechanisms to reflect new objectives
- 5. Change the current top-down approach to measuring health system performance

# B. Continue strengthening primary care

- 6. Review how the multi-disciplinary teams (MDTs) can be used to plan more proactive care
- 7. Review the implementation of Year of Care Plan as part of Long-Term Care
- 8. Review the use of the risk stratification tool
- 9. Include Mental Health and Aged Residential Care in future plans
- 10. Continue work towards electronic infrastructure to support integrated health and community integration

#### 1. Introduction

# 1.1 Purpose of this rapid review

The purpose of this rapid review was to measure progress of the Health Care Home model in achieving its aims and to inform the evolution of the model across the Capital and Coast District Health Board (CCDHB) region. The review was commissioned by CCDHB as an independent and objective formative and summative overall rapid evaluation, including consideration of the impact of Covid-19.

# 1.2 Background to the Health Care Home model

The NZ Health Care Home model (HCH) is a primary care led initiative with foundations in the Group Health Cooperative model from Seattle. The model also reflects the characteristics for strong primary care as defined in the seminal work of Barbara Starfield, these characteristics are:

- person centered
- continuous and developed relationships over time between patients and clinical teams
- coordinated access to other services
- comprehensive services

The introduction of HCH in New Zealand was pioneered by Pinnacle primary care network in 2010. The model adopted and evolved learning from previous models and incorporated global evidence of 'what works well'.

The HCH model enables primary care practices and teams to apply lean quality improvement principles to the development of services focusing on four core domains of health care:

- Managing urgent and unplanned care effectively
- Shifting from reactive to much more proactive care for those with more complex health or social needs
- Ensuring routine and preventative care are delivered conveniently, systematically and aimed at keeping people as well as they can be
- Ensuring that this is all done with greater business efficiency for long term sustainability

The NZ-HCH model focuses on improvements across these four areas as presented in figure 1 below.

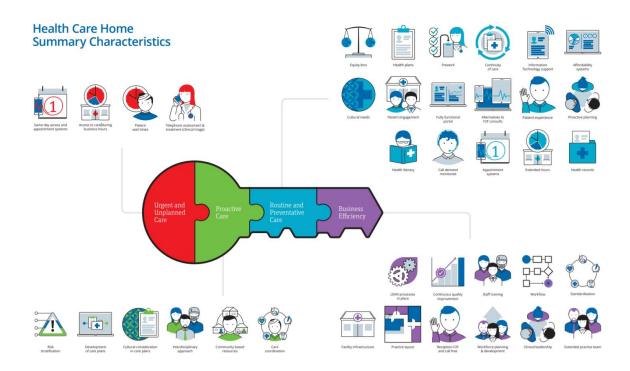


Figure 1 Health Care Home Summary Characteristics

#### 1.3 Equity and the Health Care Home

Indigenous populations around the world experience a disproportionate burden of disease and ill health and it is recognised that these inequities in health outcomes are driven by a complex mix of social determinants (poverty, historical consequences of colonialism, social exclusion, government policies of assimilation, cultural annihilation, and racism in all its forms (societal, institutional)) (United Nations, 2008). New Zealand, like other countries, faces the challenge of confronting these longstanding and embedded issues. In 2018/19, it is estimated that approximately 318,040 people live in the area served by the CCDHB. It is reported that in 2016/17, 11.5 percent of the CCDHB population were Māori, i.e. approximately 36,500 people<sup>3</sup>. Māori are disproportionately impacted by socio-economic deprivation in CCDHB<sup>4</sup>. Inequities in the health of Māori compared with other New Zealanders are neither natural nor inevitable. They need to be addressed at a societal level, including considering system-level change as well as targeted responses at individual and community levels.

Despite the Treaty of Waitangi's principles of partnership, participation and protection underpinning the relationship between the Government and Māori, the 1980s and 90s saw a significant widening of the gap in health in New Zealand, and by 2011 there was an overall seven-year gap in life expectancy.

The Pacific community are also recognised as being disadvantaged in the topic of equity and with variation in cultures, language and customs spread across Samoan Cook Island, Tokelauan and

<sup>3</sup> CCDHB. Taurite Ora: Māori Health Strategy Data Profile 2019

<sup>&</sup>lt;sup>4</sup> Robson B, Purdie G, Simmonds S, Waa A, Faulkner R, Rameka R, Andrewes J. 2015. Capital and Coast District Health Board Māori Health Profile 2015. Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare. URL: www.otago.ac.nz/wellington/departments/publichealth/research/erupomare/research /otago152540.pdf

Tongan. There is an eight-year life expectancy gap between Pacific people and non- Māori, non-Pacific people in the CCDHB region; a statistic that has not changed in the last 10 years<sup>5</sup>.

The recent Covid-19 pandemic has exposed the impact of health inequities on disadvantaged communities around the world and although New Zealand managed to avoid the worst impacts from the pandemic, the international experience serves to highlight the unequal impact on different population groups and the importance of reducing health inequities through addressing the social determinants of health . The New Zealand Health and Disability System Review (2020) asserts that improvements in the way primary and community (Tier 1) services are organised has the biggest potential to improve the health outcomes of those currently disadvantaged. Part of this evaluation explores the HCH model's impact on equity. The findings from this evaluation have been triangulated with those from the Māori and Pacific evaluations and where possible, data has been obtained and presented differentiating high needs populations (defined as Māori, Pacific and people living with high deprivation).

## 1.4 Roll out of the HCH model in the region

In 2015, Capital & Coast District Health Board (CCDHB) commenced funding the implementation of the HCH model in General Practices that operate in the CCDHB region. The programme included all four Primary Healthcare Organisations in CCDHB (Cosine Primary Health Care Network, Ora Toa PHO, Well Health Trust PHO, and Compass Health). Compass Health – now Tū Ora Compass Health were competitively selected to lead the first implementation cohort. The HCH model was subsequently rolled out to 35 practices across the CCDHB region in three cohorts using a 3-year implementation plan. The strategy for the HCH Programme for CCDHB to reach 80% of population coverage within 3 years was achieved. However, three practices have since been on hold, so the latest update is that there are 32 practices currently active covering 76% of the population. Compared to other regions in New Zealand, the roll out in CCDHB has been ambitious in terms of speed and coverage.

The selection process for HCH practices involved completing an Expression of Interest showing they were willing to make the required changes and to appoint clinical and managerial champions to lead change. After tranche 1 the practices with high needs population were selected preferentially to enable a focus on equity. Practices have different levels of back office infrastructure and management support available to them and this impacts their readiness to change.

#### 1.5 Financing the model

The programme was initially established with a three-year funding track to drive transformation with the expectation that change would be embedded into business-as-usual over time. While this funding was earmarked for the programme, it still required an annual case to be made to release the next tranche. The HCH funding is intended to cover costs of implementing the programme, including:

- Purchase of modern phone and video systems
- Minor clinic layout changes
- Release time for doctors and nurses
- The cost of establishing new roles such as Health Care Assistants
- The loss of copayment revenue associated with new activities (such as multidisciplinary team meetings, longer proactive care appointments, GP triage, huddle) that reduce the number of 15-minute consultations a GP can provide

<sup>&</sup>lt;sup>5</sup> Pacific Perspectives for CCDHB. O le fale e fau ao fau po: An evaluation of the Health Care Home programme from a Pacific World View. 19 July 2020

Participating practices were allocated funding of \$16.00 per enrolled population base (ESU – enrolled service user). There was an \$11.00 baseline payment and a \$5.00 retention allocated on a pay for performance basis for reaching specific targets.

The baseline \$11.00 was predicated on achieving the (then existing) national targets that are used as proxies for population health - smoking brief advice and immunization rate targets.

The funding was initially planned to run for three years. Subsequent funding for a further period was allocated by the DHB. The at-risk funding of \$5 per ESU in year one focused on reaching the performance targets of establishing a baseline set of model of care changes within the first 90 days of entering the HCH programme including: GP Triage, extended hours, call management, same day appointments and patient portal availability and adoption, as well as achieving activities set out in the annual practice specific HCH Implementation Plan.

Years 2 and 3 of the model retained the same base payment of \$11.00 and introduced new performance targets around reduction in ASH rates, acute admissions and ED attendances, targets for third next available appointment and an increase in volume of uptake and use of the patient portal. If practices achieved 3 out of 5 of the targets, they received the full at-risk amount, or a percentage based on achieving less than 3 of the 5 targets. Year 3 also introduced the Year of Care target of practices having 3% of their highest needs' patients with a plan, of which at least 30% of this cohort would be Māori or Pacific. In February 2017 (Year 1) Community Services Integration (CSI) began whereby Community Services joined in Multidisciplinary Team (MDT) discussions at a practice about shared patients. Project Management and change support was provided from within the DHB to facilitate this component of the model.

At the end of Year 3, practices could become certified by the HCH Collaborative. The HCH practice subsidy decreased from the beginning of year 4 to a \$7 per enrolled person per year payment (\$2 of which was at risk and linked to targets) and, \$8 per high need enrolled person per year (\$3 of which was at risk and linked to targets). The differential rate for high needs (defined as Māori, Pasifika and those in Quintile 5) is applied from year 4+, when most of the significant model of care change is expected to be complete, but ongoing funding is considered to be required to compensate for costs such as participation in MDTs, extended hours availability, year of care planning, etc.

At the time of this review, the quantum and allocation of funding beyond year 5 for the HCH is undecided.

We observe that the funding allocation for the first 3 years was per enrolled person and the higher payment for high needs populations was not applied until year four. It should be noted that the HCH model exists within a broader funding framework available to General Practice which includes Very Low-Cost Access (VLCA), Service to Improve Access (SIA) and Care Plus to compensate for high needs populations.

# 2. Methodology

A mixed method approach was used to gather data and address key evaluation questions. The core components of the approach were:

- Review of relevant programme documentation
- Key stakeholder interviews
- Thematic analysis
- Triangulation of qualitative themes from the interviews with existing relevant data
- Assessment of the model against IFIC's building blocks for integrated care
- Comment on the impact of Covid-19 and on relevant future trends based on IFIC's expertise

A Steering Group was established to provide expert advice, test findings and support with the collection of data. This group included: Dorothy Clendon (Interim GM IC CCDHB), Jenny Langton (GM Commissioning, PC, LTC & Health of Older People, CCDHB) and Melissa Simpson (Health Care Home Lead, Tū Ora), supported by Sam McLean (CCDHB), Sarah Henderson (CCDHB) and Molly Rogers (Tū Ora).

#### 2.1 Evaluation framework

In close collaboration with the Steering Group and prior to the commencement of the evaluation, an evaluation framework and evaluation questions were developed. The evaluation framework is a diagrammatic representation and logic model of the key components of the HCH programme as applied in CCDHB and depicts the movement of actions to their intended outputs and outcomes. The framework was derived from a synthesis of the background documentation and adds the enablers identified by IFIC as building blocks for effective integrated care. It underlines actions and intended outcomes enabling the overall evaluation to challenge assumptions and prompt a reality check about whether or not the programme's interventions were adequate to achieve its intended outcomes (Figure 2).

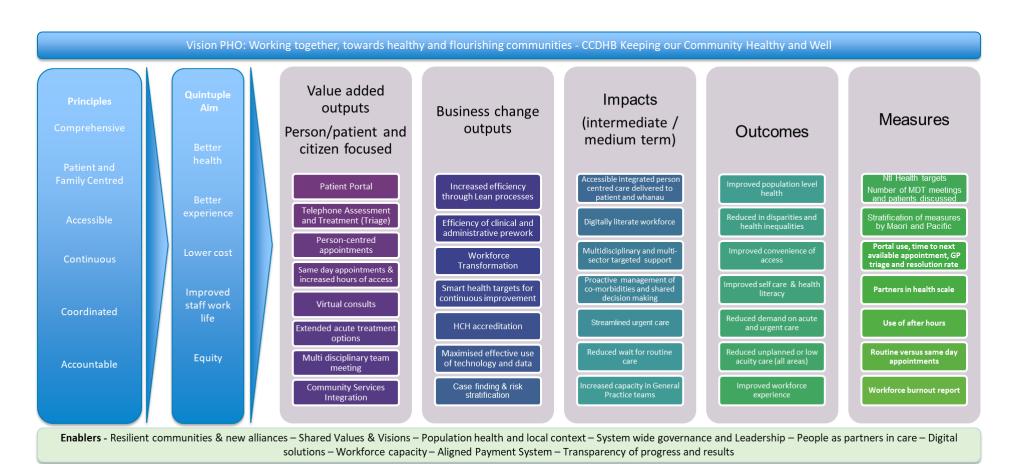


Figure 2 Evaluation framework

#### 2.2 Evaluation questions

The evaluation questions included:

#### Formative questions

- 1. Is there a strong shared vision and understanding of purpose for the HCH model? / has there been buy-in?
- 2. What about the new model has worked well? What has not worked so well?
- 3. What were the barriers to implementing the HCH model and how were they overcome?
- 4. Lessons for future of the model (including sustainability)
- 5. What is the maturity of the HCH model against main building block of integrated care?

#### Summative questions

- 1. Has the HCH model helped to achieve its stated outcomes?
- 2. What are the unintended consequences of implementing the HCH model?

#### 2.3 Data sources

#### Key stakeholder interviews

The main source of information for this evaluation was stakeholder interviews. The interviews aimed to gain an insight from a broad range of perspectives. 19 interviews were carried out, covering 35 people in total (12 interviews were one-to-one and 7 were group interviews). The chart below illustrates the range of professionals interviewed. More detailed information on each role included in the interviews is included in Annex 1.

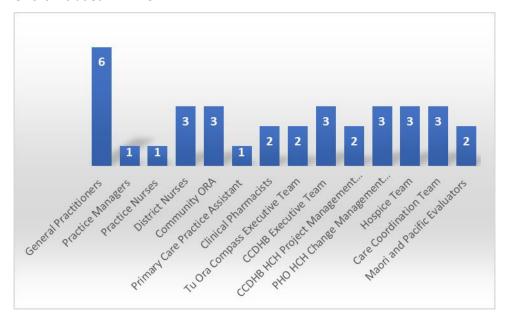


Figure 3 Interviewee roles

The practices covered through the interviews included a wide range of population size and profiles (some with a high proportion of high needs patients<sup>6</sup> and others with a majority of patients in high-income quintiles). Table 1 provides an overview of the practices covered through the interviews and describes their patient populations.

<sup>&</sup>lt;sup>6</sup> Defined as Maori, Pacific and people living with high deprivation

Table 1 General practices included in this evaluation and their context

<b>General Practice</b>	Practice population				
Trache 1 – launched July 2016 (currently in Year 5)					
Raumati Road Surgery	Total patients 4,327				
	High needs patients: 14% (n= 643)				
	Over 65s: 17% (n=774)				
	Ethnicity: European 85%, Māori 9%, Asian 2%, Pacific 1%, Other				
	0.5%				
	<b>Deprivation:</b> majority of patients are in a medium income				
	quintile				
	Non VLCA				
Johnsonville Medical Centre	Total patients: 16,903				
	High needs patients: 15% (n= 251)				
	<b>Over 65s</b> : 13% (n= 2,218)				
	Ethnicity: European 53%, Asian 30%, Māori 7%, Pacific 4%, Other				
	2%				
	<b>Deprivation:</b> majority of patients are in a high-income quintile				
	Non VLCA				
Karori Medical Group	Total patients: 14,887				
	High needs patients: 10% (n=1,436)				
	<b>Over 65s</b> : 15% (n=2,184)				
	Ethnicity: European 72%, Asian 17%, Māori 5%, Pacific 3%, Other				
	2%				
	<b>Deprivation:</b> majority of patients are in a high-income quintile				
	Non VLCA				
Tranche 2 – launched October 2017 (currently in Year 3)					
Porirua Union and	Total patients: 6,804				
Community Health	High needs patients: 88% (n=5,992)				
	<b>Over 65s</b> : 7% (n=510)				
	Ethnicity: Pacific 45%, Māori 23%, Asian 16%, European 9%,				
	Other 5%				
	<b>Deprivation:</b> Most patients (n=4,872) are in low income (quintile				
	5)				
	VLCA				
Tranche 3 – launched January					
Titahi Bay Doctors	Total patients: 5,624				
	High needs patients: 56% (n= 3164				
	<b>Over 65s:</b> 12% (n= 706)				
	Ethnicity: European 46%, Māori 31%, Pacific 10%, Asian 10%,				
	Other 0.6%				
	<b>Deprivation:</b> majority of patients are in a low income quintile				
	majority (32% quintile 5 and 22%) in quintile 4)				
	Non VLCA				

# Programme documentation and existing data

Relevant HCH documents and existing data reviewed and used for triangulation with themes rising from the interviews included:

- Oversight group papers (2019 and 2020)
- Health and disability System Review

- Performance Measures and Payments 2019 11
- Business Rules 2020 05
- Monthly practice update reports
- Key HCH utilisation reports
- Existing evaluations, including Māori<sup>7</sup> and Pacific<sup>8</sup>
- National Patient Experience Survey
- Partners in health scale used in year of care plan (evidence based self-management tool from Flinders University)

#### 2.4 Limitations

Independent quantitative analysis of raw data was outside of the remit of this evaluation by agreement with the CCDHB due to the limited timeframe of 7 weeks and the focus on interviews. Instead, information from existing reports and data that could be verified as being of a sufficient standard and value, were used to triangulate against the themes that emerged from the interviews, to see where the data either supported or diverged from the emergent themes.

It should be noted practices within the scope of our evaluation are at different stages of the HCH journey (based on when they started and their time in the programme to-date) and therefore, their stage of maturity against the model. From a data analysis perspective, it is, therefore, unfair to compare each practice directly with their other peers in the evaluation. For the sake of time and simplicity, the data does not adjust for this variation in this report. More detailed quantitative analysis would be required to ensure a robust comparison.

Patient interviews were also out of scope. Patients' perspectives were indirectly sourced and themed from the (HQSC) National Patient Experience Survey and from the Māori and Pacific evaluations which did include patient and whanau interviews. It is acknowledged this is a limitation in the representation of the patient/customer experience, but it does provide some useful insight into the impact of the HCH model.

During the course of the evaluation, there were some questions that have occurred to us that, given the time, we would have liked to explore further. In the interests of time and scope, we have parked these and included them in Annex 2 should CCDHB wish to follow-up on these in future.

<sup>7</sup> Simmonds, S and Potter, H. (Tīaho Limited) for CCDHB. Kaupapa Māori evaluation of the CCDHB Health Care Home Programme. June 2020.

<sup>&</sup>lt;sup>8</sup> Pacific Perspectives for CCDHB. O le fale e fau ao fau po: An evaluation of the Health Care Home programme from a Pacific World View. 19 July 2020

# 3. Findings

#### 3.1 From a formative perspective...

Overall positive view on most changes introduced

Front line staff agreed most changes introduced by the HCH model have been useful, although some components of the model have been adopted to a greater degree than others. Some interviewees noted that the practice had already been working on similar initiatives or certain aspects of the model, but there seems to be agreement that the introduction of the HCH model allowed them to go further and in a more structured way.

"It has made us realise that we are not alone in this – and provided a support network that has allowed us to grow and achieve together" <GP>

'I feel they know me and care about me' < Patient, National Patient Experience Survey>

# Different levels of buy-in and understanding of the vision and purpose of the model

Having a shared vision and understanding of purpose galvanizes support for change and ensures sustainability. 80% of the population in the region are currently enrolled in HCH model practices, demonstrating that – at least on paper – a large proportion of primary care (32 out of 65 practices) in the CCDHB shares a common vision and understanding of the purpose of the new way of working. There was a recognised need for transforming primary care and the HCH model appears to have provided an umbrella of initiatives and infrastructure under which to bring practices and teams together into a more effective and efficient way of working.

Interviewee respondents presented a somewhat mixed view. Those with executive and governance level roles were clear and felt strongly about the vision and purpose of the HCH model and talked about improved access to services, increased coordination of care/ reducing fragmentation, proactive approach, better use of resources.

"We set about reinventing primary care and making fit for the current century. Looking at being smarter and more efficient. How can we use data better, how can we use our people and roles better... Basically, making primary care more effective, more team-based and better for the patient" <Executive/ governance role>

We identified a common thread around the purpose of introducing the HCH model being about strengthening primary care through establishing relationships and infrastructure. This was described as establishing the foundations.

'<It's about> ensuring that all the fundamental bases and components are in place as strongly as possible' <Change management>

The model was also described as getting General Practice to the start line for future transformation and more ambitious integration (towards community). It was described as a 'catalyst for change' and as providing a strong push onto a journey, a journey that was really just beginning.

'The journey has begun – there's no turning back. [We] now need more work on person-centred side and tailoring to locality/ communities needs to prevent people getting sick in the first place' <Change management>

'The HCH has helped move the culture forward and was a good start moving from primary care more into the wider community team' <GP>

'Our work was about forming relationships. As a general rule, General Practice didn't use to know anyone outside of their immediate realm. Some were and are more mature than others. The premise was to completely transform primary care infrastructure and it still needs to be embedded

properly...it's in the making and hopefully the Community Health Networks will continue helping to mature the change" <Change management>

Those at the coal face broadly agreed with the rationale for introducing the HCH model (e.g. more streamlined processes and proactive management).

'The HCH model very much aligned with my thinking of the type of things we needed to look at to improve the running of the practice and the funding helped implementation' <practice manager>

Some front-line interviewees were excited that it would be a vehicle for improvement or would help speed up progress towards what they were seeking to achieve anyway.

'I was keen for a system that was more flexible and more responsive to patient needs and more designed with the user in mind rather than the provider... more focused on the needs of the population that you're trying to care for. The model of 15 min consultation was not fit for purpose and needed to change' <GP>

'<For a very low-cost access practice> the model was an opportunity to develop our services and think of next steps. [It] gave us a framework to challenge our thinking and [practices] <GP>

On the other hand, several interviewees noted more work was required to ensure buy-in from clinicians, particularly around illustrating the potential benefits to patients and 'speaking to the motivation' of the practices. Several noted that the focus on the business efficiency had been very strong but understanding how to create equity for their patient populations and community was a gap.

'There wasn't a strong vision – there was a lack of narrative to the building blocks of primary care on how these would improve patient outcomes, particularly those with more complex needs. The result of this was the leadership were not convinced of the benefits' <GP>

'It is important to make the model speak to the motivation of the practices and understand that while the business elements are important – in not for profit practices clinicians are concerned with creating equity for their patient group and community' <GP>

Several front-line interviewees expressed that, particularly at the start of the programme, it was difficult to understand the rationale behind certain components of the model (e.g. GP triage, the huddles, risk stratification tool). Some noted they were on board with the 'philosophy' of the model but were unsure about how they fit in to it and how it would work in practice.

'I didn't really understand the concept [initially] and didn't really get how it would work, but in retrospect it has been very valuable in terms of how the business is run and really good for [managing] COVID' cpractice management >

'We didn't really get what the huddles were about – if we'd known, we would have adopted them earlier as it would have helped us make the other changes' cractice team >

'You are presented with concept but not exactly how it's meant to be implemented...from a nurse perspective who have a very practical nature...it takes a lot of time to understand how it works in practice and embed it into practice' <practice nurse>

One interviewee noted there had been anxiety amongst some GPs around the HCH model and whether it would lead to loss of autonomy and ability to tailor their practice as required. They acknowledged that in retrospect this was not the case.

Some interviewees felt that some practices 'just did it for the funding' and that in those cases the model became more of a tick box exercise rather than transformational change. The ability to drive and sustain change practice was strongly linked to leadership, especially as support from the Change Team reduces over time.

#### Clear improvement in communication and relationships

All interviewees felt that the process of introducing the HCH model has helped to break down barriers and has markedly improved communication and relationships both *within* General Practices and *between* General Practices and Community Services (ORA, Care Coordination Team, DNs, Hospice). Care coordinators were used to working with GPs but now feel much more engaged with the wider team through the Multidisciplinary Team meetings.

#### 'People are more likely to pick up the phone now' <Care coordinator>

District Nurses felt that, as a result of the model being introduced, and in particular the MDT meetings, the 'nursing voice is being taken more seriously'. These views were mirrored in statements from practices who stated that they gain a lot from the nurses in-depth knowledge and relationships with patients ORA team added 'we really see the benefit ... of shared risk being acknowledged and [a] shared plan going forward'.

Communication and relationships have also improved beyond primary care and community teams. Primary and specialist integration was also reported as having improved. Shared secondary appointments and case conferences between GP and specialists were reported as being successful and of benefit to patients and although these initiatives are not explicitly part of the HCH model, they seem to have been partly enabled by the change in culture towards more collaborative working.

The interviewees from the hospice team noted that:

'Going into the practice to the MDT meetings is useful – even though palliative care element of MDT seems like a tag on. It's good for building collegial relationships and developing trust. The meetings are more about networking' <hospice>

The move towards greater team-work and shared responsibility is widely recognised as providing a more well-rounded and responsive care to those with complex needs.

Two GPs noted the potential of learning from each other:

"We need a knowledge exchange and getting buy in from clinicians to do things differently. This is a time intensive process and costly to do. We could learn a lot from the fee-for-service practices because they run to attract patients and they could learn from us about how to deal with high needs practices. Learning involving front line clinicians" <GP>

#### Strong change management support – particularly around business efficiency

The change team, providing support practices, was seen as vital and received strong praise. It was described as a *'relationship focussed change programme'* and the change team itself raised the importance of tailoring support depending on the practice.

Some interviewees felt the support was more focussed on business efficiency changes than models of care and that more time would have been useful to ensure buy-in and allow for the 'softer side' of transformation and cultural change. A couple of interviewees mentioned it would have been useful for the whole extended team to have had more facilitated sessions where the different team members had a chance to understand the different roles, expectations and goals. One mentioned it felt like they 'were moved through the process like puppets' <GP>. In contrast, several interviewees felt it was necessary to change things at pace and that if the change process had been slower, momentum might have been lost.

## Opposing views on the flexibility of the model

The model was described in equal measures as flexible and inflexible. It was described as 'flexible' in that it enabled practices to 'work within the framework but maintain their autonomy and ability to tailor their service to their community'. This was in relation to new roles introduced as part of the model, such as the Primary Care Practice Assistant (sometimes referred to Health Care Assistant (PCPA/HCA) where specific roles and responsibilities were for each practice to decide. It was also described as flexible and nimble compared to the 'productive GP' programme which was perceived as much more resource intensive and onerous. HCH was described as 'inflexible' in the sense that funding is tied to targets and there was perceived to be little or no flexibility around how these targets are met.

'The model was very prescriptive and limiting – we had to fit in a box. For example, we were already doing extended hours to improve access, but just in a different way through clinics on Saturdays. But this was not acknowledged as extended hours. You only got funding if you met the targets which for a high needs practice is difficult' <Manager>

"There is one homogenous model and you just have to implement it correctly to make it work. This did not consider the context of the setting and the culture and make-up of the patient base."

Executive role>

Note that some practices provided limited clinics after hours – e.g. Flu clinics, or screening clinics. This did not meet the requirements that a patient should be able to book a regular clinic appointment type out of usual business hours, to enable those who found it difficult to get time off work to attend.

#### Created a learning culture

At the local level, the huddles and the data dashboards discussed were perceived as supporting a culture of continuous improvement.

'[The model] has succeeded – there is no fail because it is a learning culture. It has been an incremental set of changes. The HCH practices use data to drive decisions' <Exec role>

At the regional level, the maturity matrix (see sample report in Annex 3) was perceived as useful as it provided a more nuanced picture of how practices are performing against the model and opens the conversation, helping to avoid the risk of 'ticking boxes'.

At the national level, the National Collaborative was described as useful for benchmarking progress from region to region.

On the other hand, a number of interviewees reported that the current set of measures are not right – they are mostly the same measures used for traditional primary care, so they do not capture innovative practices.

The broader context of historic funding issues for VLCA practices has impacted on the HCH model

The HCH funding on the one hand was perceived by some as enabling General Practice to release time to adopt new ways of working.

'It was useful having the head space to think about the changes. The funds helped hire locums which in turn freed up GPs to think about how to change things' <GP>

On the other hand, there was a strong sense among interviewees on the VLCA end that there was not enough funding to support practices to make the required changes. Practices were all at different starting points in capacity, particularly in terms of their technology, back office and management support to drive the changes required. Some interviewees reported that the funding model did not take this into account.

'There needs to be a way to support [practices] according to need and not all the same. This has a huge impact on equity. Practices managing high need populations can't be expected to do the same, at the same speed and for the same amount of money than the non VLCA practices. The co-payment top-up is meant to balance it out in a way, but it's nowhere near enough' <Manager>

The Maori evaluation echoes this finding noting that the HCH readiness assessment design was limited and was not geared up to assess provider infrastructure.

Others we spoke with introduced the counterpoint to this that VLCA practices were not reliant on fee-for-service co-payment so had more flexibility of how and where to apply their funding without loss of revenue that traditional non VLCA practices have based on 15-minute appointments. It was also pointed out that HCH funding exists within a broader funding context of differential funding for SIA and Care plus together with broader discretionary funding from the DHB.

Some observed that VLCA practices and those non-VLCA practices with a higher percentage of high needs patients than others, might be disadvantaged in their ability to meet the targets and, therefore, secure the at-risk funding. Our observation is that the data does not directly support this. In terms of achieving the target to reduce the rates of ED, ASH and acute admissions, both the VLCA practice (PUCHs) and the practice with high proportion of high needs patients but not VLCA (Titahi Bay) were achieving this as well (or better) than the non VLCA, non-high-needs practices (See section 3.6)

However, there was a theme that emerged from our discussions that the VLCA practices may not be able to sustain new roles introduced by the HCH model such as the HCA's if the funding for these roles is discontinued. This seems to depend on the ability to delegate clinical tasks to the HCA and to free up nursing time to cover the cost of new roles and this varies between practices. While we were not able to dig deeper into the subject, given time constraints, we also sensed that there was a difference in the depth of capacity for information analysis between practices who are coming from a deficit (VLCA). VLCA practices may have less flexibility to be able to absorb change.

Unpacking the question of funding for VLCA practices is a broader systems level issue and beyond the HCH, though it impacts the model. It is evident that the very important issues interviewees emphasized relate to the broader funding model of General Practice in New Zealand not being equitable enough. Some interviewees noted that VLCA funding had not been adjusted for some years and was not sufficient to compensate for the burden of complexity of high needs populations.

'The whole funding model needs to change- very low cost access practices particularly need more income than they are receiving' <GP>

One interviewee noted the overall funding model for general practice impacts on implementation of HCH. Capitation means that General Practice have the flexibility to define services and spend funds to support optimum activity. But when a practice relies more on co-payments/ fees, there is less room for flexibility as the incentive is to attract as many consults as possible. In this sense the funding model gives more flexibility to VLCA practices because they do not rely as much on fee for service co-payments.

#### 3.2 Clear improvements in business efficiency through lean processes

This is the strongest component in evidence compiled from interviewees and, arguably, it is a prerequisite to achieving the other components.

The components of the model that were more readily adopted and seemed to have the most positive reactions seem to be those related to business efficiency including: lean processes, continuous

quality improvement, workflow redesign, standardisation, facility infrastructure, practice layout and extended practice teams.

'Flow through the service has improved so patients with high needs tend to be slotted in if necessary ...parking [patients] happens a lot less. It's rare that we're overwhelmed' (GP)

The reception F2F and call free component was described as good in principle but tricky to adopt for some (practices with less space).

## New roles useful

New roles introduced such as the Health Care Assistant (HCA) role were viewed as useful in freeing up nurse and GP time, but their potential being realised seemed to depend on how enabled their role was by the clinical leadership in each practice, i.e. the latitude that was given to the role to take over existing clinical tasks and/or take on new functions (more around prevention and outreach) .

Those practices that found the HCA role beneficial were those that were able to support harder to reach patients and were able to be more proactive and more patient centred. The HCA interviewed described the role as including several administrative duties previously carried out by nurses and that are considered related to prevention and health promotion. These include recalls for smoking prevention and immunisations. Further potential for this role was noted due to the ability to build closer relationships with patients. One example we heard was that the HCA was able to spend time with refugee patients who face language barriers and doing so helped improve their trust in the system and their confidence communicating.

HCH programme set out to embed clinical pharmacists into practices as part of the extended practice team with the idea that direct patient contact would be beneficial. Clinical pharmacist roles are partly funded by CCDHB, partly by Tū Ora Compass PHO and supplemented by General Practices. Interviewees from practices that had access to a clinical pharmacist as part of the model described positive impacts on practice.

'Clinical pharmacist improved practice having that extra expertise has really helped improve patient safety and clinical effectiveness' <GP>

# Stronger digital infrastructure but there's still work to do

In terms of digital technology infrastructure, video conferencing was seen as a strong enabler to transformation and it was mentioned as also helping in terms of adapting faster to new ways of working during Covid-19. Several interviewees noted that even though great progress has been made, more investment is needed to support digital shared care plans and greater integration of IT systems.

'We need real time patient information to be shared across different services to enable the teams to be more proactive' <Change management>

Some challenges raised around shared care plans that traverse settings of care and roles included:

- ManageMyHealth (the patient portal software) is currently a view into the GP record, not a shared care plan. Some work has been done on adopting the INDICI system shared care plan but this is not as evolved as it need to be.
- There is a divide between health and social services where issues include confidentiality and using "different languages".

#### 3.3 Better management of urgent and unplanned care

Telephone (GP or nurse) triage

We found mainly positive reactions to the components related to urgent and unplanned care including the GP triage, which helped reduce patient wait times and improved the ability to provide same day access and appointments. The idea is that on-the-day acute appointments are reserved by each GP, based on forecast volumes, but where clinically appropriate, patients do not need to attend the clinic, saving them time.

'It's been a huge success. It enables us to more effectively manage same day demand' <GP>

'Patients like it because they don't need to come in. We have a good success rate of people not having to come in because the GP resolved the issue over the phone' <Manager>

Interviewees reported that some practices offer it to deal with overflow, but some preferred to offer GP triage to improve access in terms of ensuring the patient has access to the right person.

'We have number of high needs patients but also older more well-off pakeha patients. The problem we had was that [the more well-off] patients were good at booking ahead and [those with higher needs] tended to book [an appointment] on the day and ended up either being seen at the after hours medical centre or booked in 3 days' time and then wouldn't come in. This meant there was no continuity for those that need continuity the most as they tend to need to be seen for more than what they present with. GP triage solved this problem within a month. We used to refer about 16 patients a week to the after hours clinic and that went down to none. We're seeing our own patients and engaging with them' <GP>

GP triage was also reported to have improved patient experience: 'patients know about it and want it' < Manager>

Using the National Patient Experience Survey to cross check patient reported-experienced it is unclear what effect the HCH model has had. There was little change from 2016 to 2019 under the relevant questions:

Table 2 National Patient Experience Survey

Question	2016 responses	2019 responses
When you ring to make an appointment how quickly do you usually get to see	<b>40%</b> of patients ringing their practice to make an appointment indicated being able to see a GP on the same day or on the next working day	34% of patients ringing their practice to make an appointment indicated being able to see a GP on the same day or on the next working day
	<b>90%</b> of patients reported being able to see their GP within a week.	<b>90%</b> of patients reported being able to see their GP within a week.
When you contact your usual GP clinic about something important, do you get an answer the same day?	<b>54%</b> of patients said they were able to <i>always</i> obtain an answer on the same day when contacting their usual GP clinic about something important.	<b>53%</b> of patients said they were able to <i>always</i> obtain an answer on the same day when contacting their usual GP clinic about something important.

In terms of equity, the Māori evaluation found that Māori triage events have been increasing in the time period from July 2016 to July 2019, from 3.7 to 19.6 per cent. It also found triage outcomes to

be similar for Māori and non- Māori, although a lower proportion of triage had been completed by a GP.

One interview felt GP triage was useful, but could go further, as the current morning slot does not work for everyone (particularly blue collar workers) but noted tension with management as it takes away from face-to-face consults which brings in revenue to the practice.

#### Huddles

The huddles were unanimously praised as beneficial to managing acute on the day demand and general management of the practice.

'Having a visual data board enabled teams to take ownership of their performance and also enabled our workflow to be adjusted and managed more effectively – with more focus on team working'

Health Care Assistant>

'The huddles have allowed us to have subtle/ underlying conversations about how we better service patients. Being more proactive with patients' <GP>

'For high dep practices under financial stress, the focus easily goes away from patient onto survival and this has allowed us to focus on the patient again' <GP>

## 3.4 A gap between vision and practice on proactive care

There seems to be a disconnect around the proactive care aspect of the model. Most interviewees mentioned it, unprompted, as one of the aims of the model and expressed their support for it, but in terms of describing the practice of it, most felt change had not quite been embedded yet.

'Relationships are in place, to the point people don't even need to be face to face anymore. But the focus is still on what's coming through the door, not pro active care planning and sharing across information in real time' <change management>

#### Multidisciplinary Team Meetings

Multidisciplinary Team meetings (MDT) were raised by most interviewees as one of the most important changes introduced. MDT meetings involve a broad range of care practitioners (GPs, Nurses, District Nurses, ORA team, Care Coordinators, Hospice team, Clinical Pharmacists, Social Workers and specialists as required) with the aim of offering more comprehensive and coordinated care to patients.

Several interviewees noted it was the first time the different teams had met face-to-face, as one team. All interviewees that discussed MDTs felt it helped to establish relationships across services and that it had markedly improved communication and the management of patients.

'People are more likely to pick up the phone now... It's helped move from a 'referral system' towards a team approach' <ORA>

Practice staff were broadly positive about closer working relationships with and having better access to community-based services.

'MDTs are just wonderful...getting to know the community teams, understanding their pressures - we all benefit. It felt like the community teams had let us into their bubble' (GP)

Community teams (ORA, care coordinators, hospice, DNs) were positive about 'being invited in' too, about increased parity of their roles and the ability to care for patients more effectively and efficiently. They also felt their role in the MDTs was partly about raising awareness with practices on what services are available in the community.

It was noted that GPs do not always attend MDT meetings. Patients have sometimes been invited in (this was reported as a relatively rare event). Specialists are invited as required.

Responses seem to point towards MDTs not quite realising their full potential. They are mostly enabling the relevant people to discuss the most urgent patients or those of most immediate concern. There is little evidence based on these interviews that the MDT meetings are used for proactive care.

'The intention was that MDTs were about proactive planning and identifying patients using the risk stratification tool, but understandably the meetings became about who's in crisis now. Once those crisis patients dried up, the habit of being proactive fell a bit by the way-side' <ORA>

There was support for having social workers involved at the MDTs and/or as part of the extended team, but most had not been able to achieve that yet. Three interviewees noted the MDTs are a good start but still lack the ability to address the wider social determinants of health.

There were different views on the required frequency for the MDTs and this depended on the role. DNs noted 'there is an acute, reactive nature to the DN role which normally requires a quick response from the GP and (as a result) the MDT which is every two months is not [responsive] enough' < District Nurse>

Interviewees broadly agreed MDTs helped to enhance care coordination and felt that, as a result, patients were receiving better care. Those that had been involved in MDTs where patients were invited to attend were all very positive about the experience.

Some cultural change obstacles were noted:

- Several interviewees talked about difficulties identifying people to be discussed at MDTs and
  not using the risk stratification tool to help identify those that would most benefit from pro
  active and interdisciplinary care, but rather just discussing those that were of most concern.
- Resistance from management to 'free up' GPs to attend
- GPs not always seeing the value of attending and seeing MDTs as a tick box exercise 'because
  they get paid to do it (as part of the HCH model), they just put up with it as a way of getting
  the funding' <ORA>

Some practical difficulties were raised, including:

- Finding the time to attend the MDTs due to workload (although introduction of virtual meetings seems to have helped with this)
- Having the right people attending the MDT (due to shortages, workloads, logistics)
- Logistics of organising the MDT meetings burdensome, including email overload as emails seem to be sent to all the team regardless of whether patients are relevant or not
- Different views on how often MDT meetings should take place (most preferred monthly than bimonthly)
- Facilitation of MDTs 'MDTs don't always result in decisions or outcomes people can talk a lot and decide nothing' <care coordinator>

#### Risk stratification tool

A risk stratification tool is available to Tū Ora Compass practices to identify complex patients and patients at high risk of admission. The idea is that complex patients have a care plan developed and are scheduled visits with appropriate appointment length to manage both current symptoms and to update plan of care. Most interviewees reported not using the risk stratification tool successfully or on a regular basis.

'We used the risk stratification tool but struggled with it. The hardest thing was the algorithm of predicted risk - the GPs struggle to see what the patients in the risk list need - just because they are high risk doesn't mean they need more GP input' <Manager>

There was one good example of a practice adapting the year of care element of the HCH model to meet the needs of their population. The team found the YoC difficult to apply to their practice however, they felt that the concept would be of benefit if they targeted the approach. As a team they developed a project that used the year of care to support patients presenting with gout. The importance of this approach that the team stated it reinvigorated the YoC and provided an opportunity to enhance the health of disadvantaged communities. Māori and Pacific peoples had 2-3 times the gout prevalence of non-Māori, non-Pacific populations. the practice expressed the development of the project enabled them to use the HCH model to support improvements in population health.

'We didn't really find the risk stratification tool useful, so we decided to target people with gout – this enables us to address equity issues as we identified it was a gap in our services. Gout is more common in Māori men and also helps us work preventatively (prevention of diabetes and CVD – through diet and life style advice). This shift in focus got us very excited as a practice and really got people interested in Year of Care plans' <GP>

To recap - this component is not as mature nor uniformly understood, adopted or leveraged. The use of the risk stratification tool has people focussing at the top of the pyramid – largely to the cohort that are already well known to the practice. The more effective leverage is, while addressing the high-risk patients, to also look at the next tier to see what interventions may work to stop some of these patients becoming more complex. YoC is at times being used as a checklist without it really being used as a patient co-production and goal-based tool.

## 3.5 Good progress supporting routine care but less so with preventative care

Routine care is well supported via appointment systems, extended hours, portal adoption/use and alternatives to face to face consults. Although the preventative care elements feature in the model (see key diagram section 1.2) and interviewees seem to recognise the need for these, they do not appear to have translated well into actions and behaviours. Equally, interviewees did not report strongly on other aspects of the routine and preventative care component of the model, including cultural needs, patient engagement and patient experience, health literacy and proactive planning.

#### Patient portal

Patient portal is a key enabler for self-management, easy access and to promote continuity of care.

There were mixed views on the *patient portal*. Some practices had rolled it out fully (including patient access to notes and ability to book appointments).

'[The] patient portal has been very successful – patients can order repeat prescriptions, book appointments, view notes – the whole thing. Email traffic comes directly to doctor and not to nurse, so it reduces double and triple handing. We are aware of the digital divide and that it doesn't suit all of our patients (probably 20% of patients), but it has had a high uptake overall' <GP>

'For a certain number of patients has been a real boon being able to communicate with doc and nurse, takes pressure off' <GP>

'Being able to make appointments, renew prescriptions and consult with my GP using ManageMyHealth is of significant benefit to me' < Patient, National Patient Experience Survey> VLCA practices interviewed expressed greater difficulty in rolling the patient portal full set of features out. In particular, there was a reluctance to allow patients to book appointments themselves and to access clinician's notes.

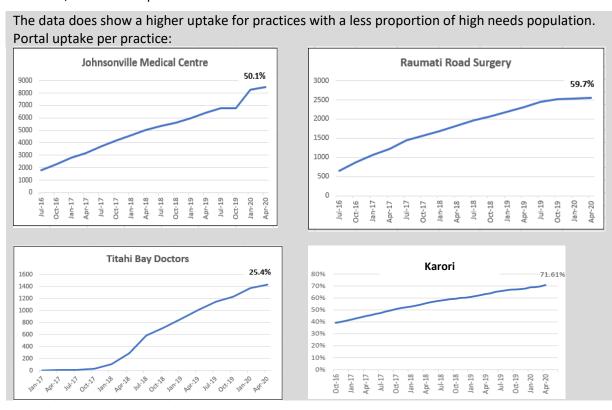
'GPs were pretty sceptical as to what should and shouldn't be available – e.g. they didn't want appointment open. Didn't want open notes' <Manager>

One interviewee explained this as being because of the high prevalence of mental health, substance abuse and other complex and sensitive issues in the practice population, GPs were concerned that open access to notes may make the clinical community more circumspect on what they would write, as well as making it difficult to flag sensitive and potentially dangerous situations to fellow clinicians.

There were mixed views on the portal's ability to improve access for those patients that need it most.

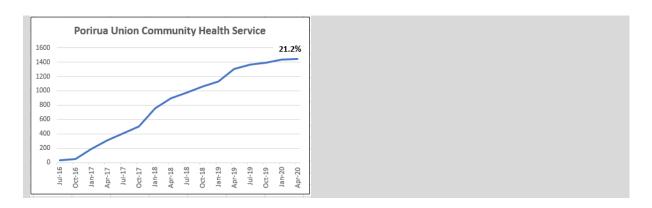
'Lots of people in our community may have mobile phones but no data, so accessing the portal is difficult for them' <GP>

The Pacific evaluation<sup>9</sup> found that amongst patient and family interviewees, the use of the portal was relatively low. Those who were using it regularly, however, spoke positively about its convenience for booking appointments, renewing prescriptions, and receiving communication about test results, reminders, and follow-ups.



25

<sup>&</sup>lt;sup>9</sup> Pacific Perspectives for CCDHB. O le fale e fau ao fau po: An evaluation of the Health Care Home programme from a Pacific World View. 19 July 2020



Looking at patient portal activations (following registration, patients need to activate the portal) for four  $T\bar{u}$  Ora VLCA practices with majority high needs patients, VLCA practices are steadily increasing the number of Patient portal users – though at a slower trajectory. They had very few users prior to joining HCH. Note that PUCHs began their HCH journey 1 Oct 2017 – but started preparing prior. Whaiora<sup>10</sup> began their HCH journey 1 April 2019.

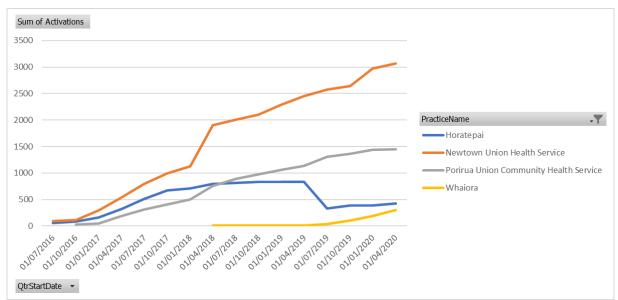


Figure 4 Patient portal activations for VLCA practices \* Hora te Pai switched PMS systems in 2019 and have had to re-enrol folk which is why their numbers dropped.

In contrast the chart below shows four comparative non HCH, non VLCA practices. So far they have had one patient portal activation (Practice C).

26

<sup>&</sup>lt;sup>10</sup> Note that Whaiora is not a practice covered in this evaluation, but it is included here for comparison purposes, as a VLCA practice

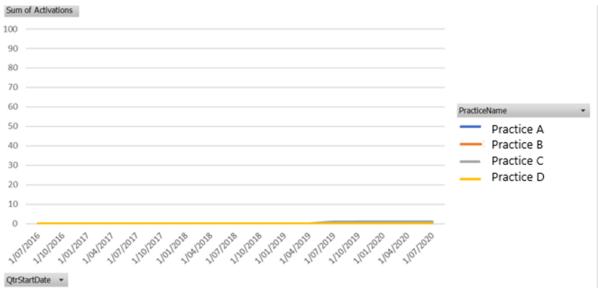


Figure 5 Patient portal activations for non HCH practices

#### Extended hours

Extended hours of access were recognised as being of benefit to patients, particularly those who work, but was reported as harder to implement, in particular depending on the different General Practice ownership models.

'One of the issues [with extended hours] is that you're hoping you're not robbing your daytime services to provide at night, but I think it's ok. Doctor triage has helped with this as patients don't always have to come in...they can get [a] script over the phone and they don't always have to see the GP. It improves access both through extended hours and through GP Triage' <GP>

# Long term care and Year of Care Plan

For more complex patients HCH's focus is on proactive care planning based on what is most important to the patient using patient-directed and nurse-led Year of Care (YoC) Plans. YoC plans are intended to be a one-hour session using the self-management support tool developed by Flinders University. The approach includes

- Assessment of self-management capacity and barriers with Partner's in Health Scale and Cue and Response Interview
- 2. Identify the main problem from the client's perspective using the Problems and Goals

  Assessment and formulate a key goal the client would like to work towards over the following 69 months
- 3. Formulate a care plan with:
  - identification of mutually agreed issues and goals
  - key action steps, roles and responsibilities to address issues and goals for the next 12 months
  - monitoring and reviewing.

The Partners in Health scale<sup>11</sup> includes 12 questions.

Interviewees noted the Long Term Care and YoC Plan parts of the model were not quite right yet. They were described as being very time consuming for both clinicians and patients.

'Year of care questionnaire is ridiculous - too onerous. We talked to them about shortening it for our population but didn't come to anything while we were still in' <practice manager>

A lack of clarity as to how they should be implemented was reported.

'The YoC plan is almost too flexible so hard to know what to do with it. Before YoC there used to be CarePlus, which was essentially the same thing but much more rigid' <Nurse>

Nurses felt patients identified as candidates for the YoC plan were receiving optimum care and would not gain much from it.

'Year of care was difficult at the start as focused their 3% uptake on patients from the top 7% from risk stratification however these patients were already heavily involved in the practice so gained little from the extra input' <GP>

'The nurses will do it because it's the system but they don't always see the value' < Nurse>

Some interviewees reported struggling to find patients that would be suitable for YoC planning and so have trouble meeting the targets.

'Tried a few different ways to engage patients to manage their conditions. e.g. diabetic annual reviews, CVD reviews, year of care plan model where patients identify what is important to them – not sure we have any outcome data to support that that works. Philosophically it is but it takes quite a lot of time to get it up and running' <GP>

Interviewees reported patients do not always see the value either.

'If you are an older, retired pakeha patient, you may value an hour with the nurse talking about you goals and care plan. If you are a Māori man in his mid forties who has to take time off work to attend, you may not value it so much' <GP>

There were issues with the digital infrastructure intended to support YoC planning.

'The technology isn't great. It's difficult to share with-systems that are not set up for it and so you end up 'man handling' a nurse lead piece of work into a very GP led system" <Manager>

To date HCH practice teams have developed year of care plans with over 4,500 patients.

<sup>11</sup> Battersby, Malcolm & Ask, Alex & Reece, Marion & Markwick, Mignon & Collins, James. (2003). The Partners in Health Scale: The Development and Psychometric Properties of a Generic Assessment Scale for Chronic Condition Self-Management. Australian Journal of Primary Health

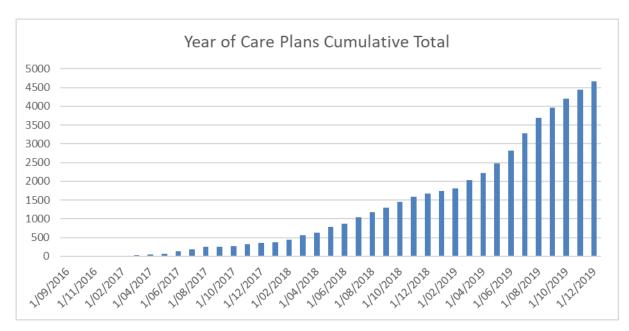
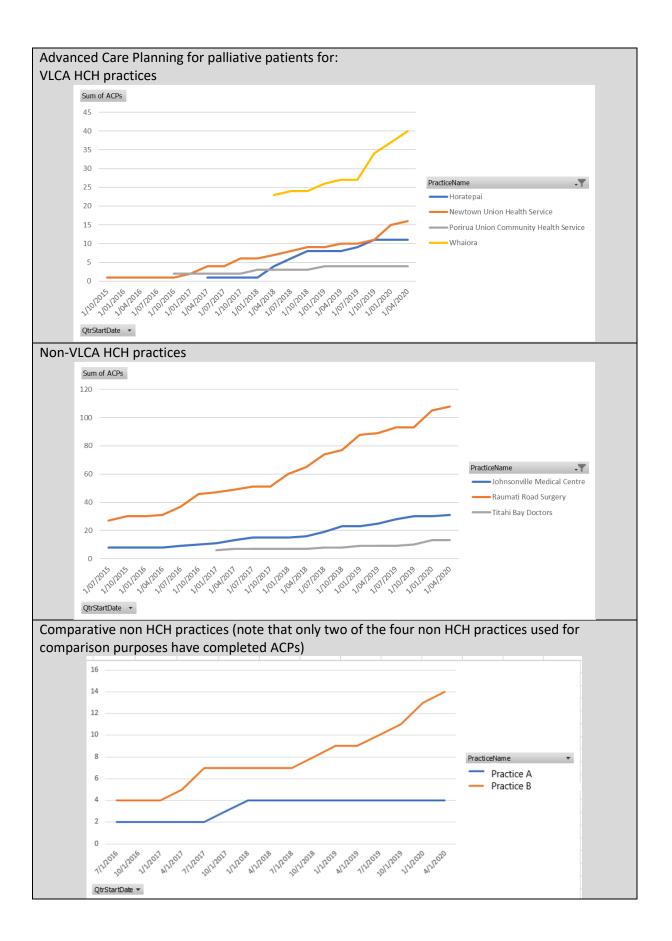


Figure 6 Total Year of Care Plans carried out by HCH practices

We cannot compare HCH and non-HCH practice on year of care plans, as non HCH do not do YOC plans. As a proxy comparison measure, we have looked at Advanced Care Plans (ACPs) for palliative patients. All practices are funded to do ACPs.

Looking at the difference between VLCA and non-VLCA HCH practices, they both seem to be making similar progress in carrying out ACPs. This is in contrast to non HCH practices that seem to be making very slow progress (or do not do ACPs at all).



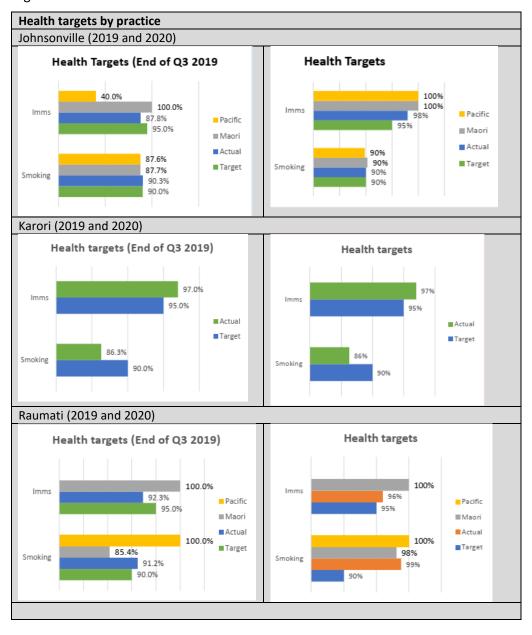
## 3.6 From a summative perspective...

We describe below how the HCH model has progressed against achieving its intended outcomes.

## Time will tell whether it is improving population level health

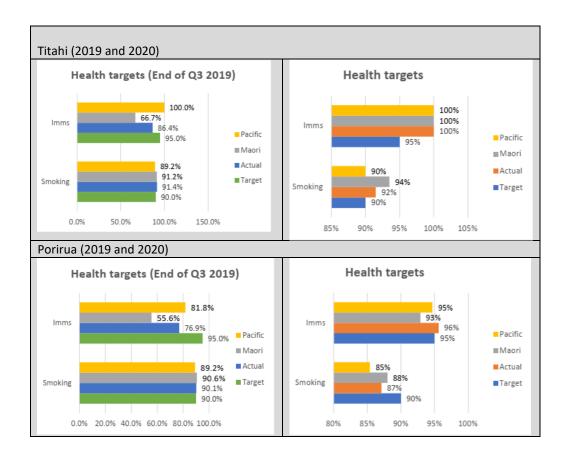
Interviewees reported a sense that the HCH model, in particular its focus on proactive care and care coordination is better for patients and that it is therefore likely improving overall health.

Using smart health targets as basic population health measures, including immunisations and smoking<sup>12</sup>, we see HCH practices have all mostly achieved their targets from September 2019 to May 2020. It should be noted that when a target is set and particularly when funding is tied to it, most practices tend to meet them if at all possible. Also, as part of the selection process for the HCH programme, practices needed to prove they could meet targets, so their baselines were likely fairly high to begin with.



<sup>&</sup>lt;sup>12</sup>The smoking target has been recently replaced by a diabetes target.

-



These measures are structural process measures and as such they are not broad enough to judge whether population health has improved or not as a result of HCH. Outcome targets lag significantly in seeing the dials turn from intervention to outcome. This is also, in part, a function of a complex adaptive system of integrated care (which HCH is an example of) not having a linear cause and effect relationship between intervention and outcome. HCH is keeping people out of hospital (see section 3.6) and providing better and more timely access to general practice when it is needed (see section 3.3). Is it improving the quality of life and health in the community? Time will tell and it appears this is a focus of the next phase beyond year 5.

## Convenience of access has clearly improved

Interviewees noted access to services had improved through:

# **GP** triage

HCH practices are required to offer a GP telephone assessment and diagnosis service for on the day appointment requests.  $T\bar{u}$  Ora Compass Health reports that approximately 30% of the requests for an appointment can be resolved by phone, saving the patient from travelling to an appointment; and that across all HCH practices over 30,000 patient appointments have been successfully resolved by telephone since 2018.

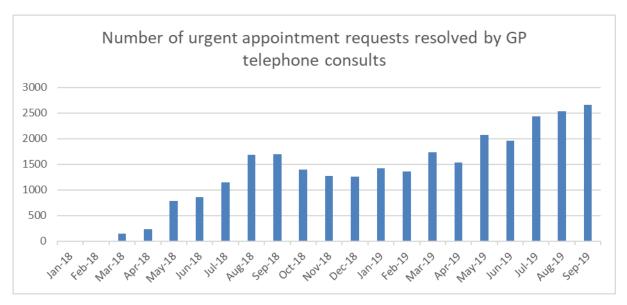


Figure 7 Number of urgent appointment requests resolved by GP telephone consults

Looking at the practices covered through the interviews for this report, we find relatively high resolution rates, with the exception of Raumati:

GP triage resolution rates (2020) for the HCH practices covered in this review:

Johnsonville: 57%Raumati: 27%Titahi: 49%

Karori: not available

• Porirua: 85%

#### **Extended hours**

'I got hold of my medical team [because] they do Saturday's [and that is] a time I don't take time off work' <Patient, National Patient Experience Survey>

Health Care Home practices are required to introduce extended hours (outside 8-5pm) with bookable appointments for the benefit of patients. The chart below shows that, as practices have joined the HCH programme, the extended hours available to patients has grown – to now over 8,200 hours per year.

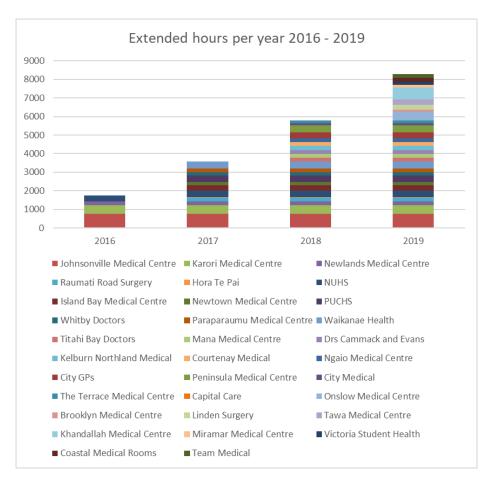


Figure 8 Extended hours per year 2016 -2019

#### **Portal**

HCH practices are required to offer a patient portal for appointment booking, lab results, clinical diagnosis and secure messaging. Portal use increases patient self-management capability. Over 100,000 people in CCDHB are now registered to use the patient portal. The portal allows patients to communicate directly with GPs and nurse and to book their own appointments. We were unable to obtain data that showed the uptake of the portal by ethnicity.

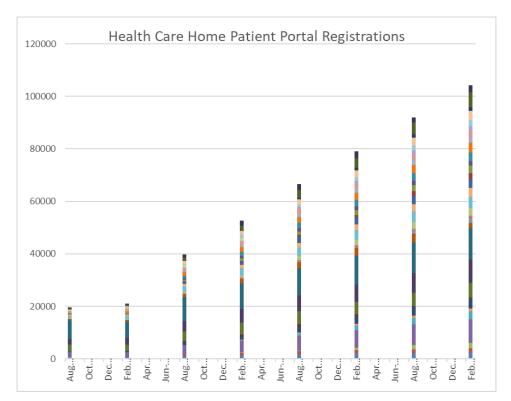


Figure 9 Patient Portal Registrations from August 2016 to February 2020

New modes of consultation such as phone or video consultations were also reported as having improved access and avoided travel. The HCH Māori evaluation reported that virtual consultation worked well for Māori and that there is a desire for more<sup>13</sup>.

These combine to a strong case for there being improved convenience of access. Some respondents noted that while there had been improvements there was a need for more targeted efforts to improve equity of access.

#### Some vulnerable populations missing out on improved access

A gap was raised in terms of access to Mental Health Services as the local secondary mental health services have not yet engaged in the community services integration component of the HCH model.

'We have had mental health teams contribute to MDTs sometimes and that has been beneficial, but we can't provide mental health support especially on the complex end' (ORA)

The Community Services Integration programme, led by CCDHB, took a staged approach to involving different disciplines in the MDT. The first 2 disciplines included in MDT meetings were the ORA and District Nursing teams. Care coordination and Hospice followed after. There has always been both a desire and a need to engage with mental health services, however this service has been undergoing some internal reconfiguration. Practices such a PUCHS have involved team members from Mental Health services at their MDT meetings, but this has occurred organically and independently.

Aged Residential Care (ARC) was also described as a gap. ARC can operate on two models, one is an affiliated GP practice, the other are GPs specific to residents through existing relationships. The latter is reported to be problematic for some GPs in releasing time for these visits. Given there is a high proportion of polypharmacy in the age and complexity of the cohort of people in residential

<sup>&</sup>lt;sup>13</sup> Simmonds, S and Potter, H. (Tīaho Limited) for CCDHB. Kaupapa Māori evaluation of the CCDHB Health Care Home Programme. June 2020.

care, access to clinical pharmacists for medication reconciliation and med reviews and continuity of care arrangements for general practice cover may lower the risk to these residents and decrease unplanned hospital admissions from residential care.

## The ability to reduce disparities and health inequities remains limited

The HCH model was reported by most interviewees as having improved access to care and to a wider range of services, including services in the community. Improved access was viewed as contributing to reducing health inequalities. The ability to reduce inequities in access however is less clear. Very little was reported in terms of reaching out to disengaged or more vulnerable people. As the picture below shows, providing the same access to everyone (e.g. through establishing the patient portal, extending hours of care, virtual consults) does not necessarily result in the same outcomes. There is a risk that the HCH model mostly benefits those patients who are already engaged with their practices.

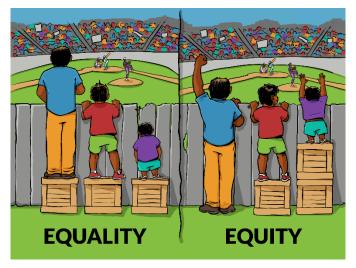


Figure 10 Equality versus equity

Interviewees from Executive teams at the DHBs and PHOs seem to agree that the HCH model has not addressed equity as well as it could have. At the strategic level there seems to be a strong awareness of the implications of ongoing inequity in the region and changes have occurred progressively to increase the focus on equity, including:

- 2016-17: practices with larger high-need populations were given priority entry to the programme
- 2017: the revised funding model for years 4 onward was agreed with a higher per-capita amount for high needs patients
- 2018: the HCH model was revised to have a 'stronger and more explicit' equity focus by requiring HCH practices to demonstrate their ability to monitor processes and outcomes by ethnicity and to develop a 'practice-based approach to achieving better health outcomes where possible', particularly for Māori, Pacific and patients living in high deprivation.
- 2018: the Oversight group started receiving health target and year of care data on practice performance broken down by ethnicity.
- Data quality indicator reports were split by ethnicity to provide transparent reporting for each practice by Maori, Pacific, other and total group.
- Ethnicity specific targets were set for proportion of Year of Care targets required to be from the high-needs populations in each practice.
- 2019 the National Health Care Home Collaborative started work on building more specific equity features into the model of care requirements.

Based on our interviews, there was little evidence of taking an equity lens to improve services at a practice level. A reflection from the change team is that they consider they are not pushing practices

enough on the hard discussions on variation by ethnicity. There was some dissonance between interviewees raising equity as something important but this not being translated into action.

There was a sense that the model brought standardisation and efficiency, but now there is a need to address the variation in contexts and practices and a corresponding move toward more focussed support.

The HCH model was described by community-based teams as a health focused model and therefore as not being well-equipped to address the social determinants of health and reduce inequities in health. The Māori evaluation also found the model is not patient-centred and has elements that are ill-suited to whanau.

One GP described the HCH programme as a "model driven by providers, not the needs of patients". One practice manager felt that the HCH programme was very doctor-centric.

Some interviewees from VLCA practices reported struggles trying to fit into a model that was a 'one size fits all' in that they were expected to meet the same targets as their non VLCA counterparts even though achieving these targets in a high needs population is much harder. The data available did not reflect this, i.e. the targets are mostly being met regardless of whether the practice is VLCA or not. However, more research may be advisable to understand the difficulties faced by those serving the most high-needs populations.

Interviewees also reported the following as important to improving the ability to address health inequities. Note these are outside of the scope of the HCH model, yet have an impact on the model and therefore are considered relevant.

- The need for more Māori GPs as a key factor in addressing equity in one of the practices that
  did have a Māori GP, it was reported that the MDT would tend to discuss younger patients with
  wider socio economic issues than those without a Māori GP which seem to focus their MDT
  discussions more on the elderly.
- Having a co-located social worker and support team and ensuring everyone attends the MDT also was described as important
- Providing the option of house visits

# Unclear how much the model has improved self-care and health literacy

The voice of the patient is not a direct component of this evaluation, so it is difficult to gauge this first-hand. Access to the portal and (where it is implemented) open notes makes the patients who are digitally enabled feel more engaged in their care. We found pockets of outreach to the community e.g. social workers going out to men's groups to proactively engage those who would not typically self-refer to general practice. There are some project-specific examples (such as a gout project) that anecdotally seem to have led to better literacy about specific areas of health and self-management.

The Shared Medical Appointments (SMA) with patients that live with long term conditions were also reported as useful. These provide an opportunity to improve a patient's experience of healthcare as well as improve service efficiency through better use of clinician time (GP, Nurse Practitioner, Nurse, Allied Health Professional), by bringing patients with common health needs together with one or more healthcare providers. Generally attended by 6 to 10 people and can be up to 90 minutes duration, consisting of 60 minutes of clinical consultation time and 30 minutes for follow-up discussion and/or education.

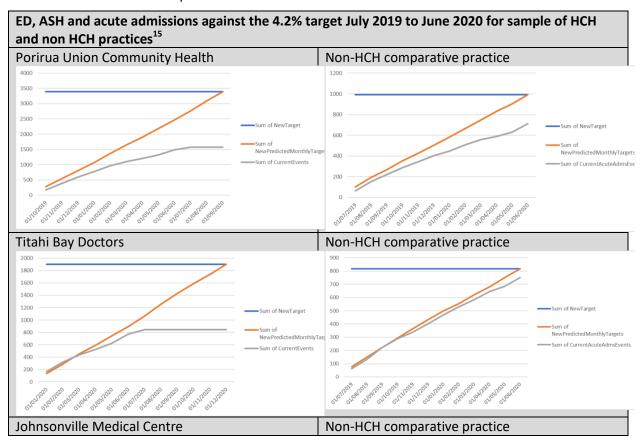
'We did a group session for gout. We have done 2 sessions of 3 people, where over the space of an hour with pharmacists to test people's uric acid. Works really well. Well received by patients' (GP)

Even though the change management team has pushed for the adoption of shared care appointments these appear to be isolated examples and not yet embraced by all. Equally, Tu Ora Compass facilitates a Stanford self-management course that patients can be referred to. Some practices have trained their own Stanford facilitators such as Raumati Road so that they can run these courses in- house, but analysis would be required to understand what the impact of these has been.

# Reduced demand on acute and urgent care

Significant reductions in use of secondary care services could indicate an improvement in resource use of the health system overall and an improvement in patient outcomes from avoided hospital care.

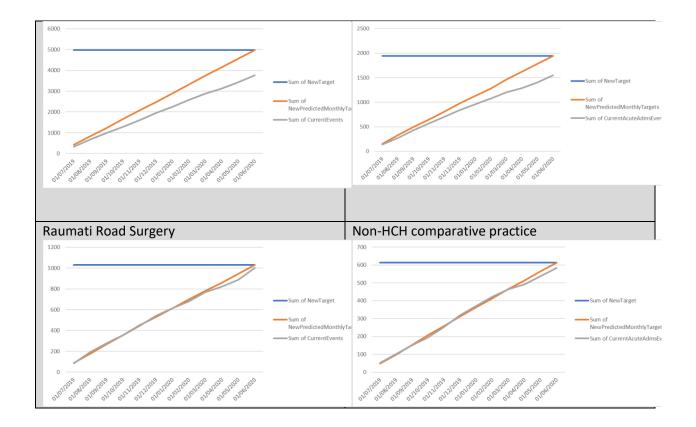
Data available for this evaluation was based on progress against a target on maintaining a 4.2% reduction on baseline rate ED, ASH and acute admissions<sup>14</sup>. The HCH practices reviewed, including those with high needs populations and VLCA ones appear to be maintaining a reduced rate of admissions compared to what is expected (based on past trends). Of note, PUCHs (VLCA) seems to be the most successful and responsive to Covid-19.



38

<sup>&</sup>lt;sup>14</sup> The 4.2% target was based on the decrease in admissions and therefore in costs that would be required for the HCH programme to make enough of a return on investment and 'break even', based on the amount of funding available for the HCH programme.

<sup>&</sup>lt;sup>15</sup> Note that where there is a flat line (Titahi Bay Doctors and PUCHs) it means the data is incomplete



The question is whether this is the right measure and if it is, whether it is ambitious enough, and how does it relate to broader NZ initiatives for POAC? It would be interesting to have a macro view of ED, ASH and acute admissions over time and compared to other regions in New Zealand to understand the impact on secondary care services of the CCDHB HCH model compared to other regions.

A report for the Productivity Commission<sup>16</sup> examined whether the HCH model has had an impact on ED presentations, acute admissions, length of stay in hospital, ASH or readmissions. It found that the implementation of HCH resulted in a drop in the likelihood of an individual experiencing an ED event by 0.1 percentage points per practice quarter. This was significant. No other impacts on other hospital-related events was detected at that time.

There is evidence in Integrated Care initiatives that any business case prefaced on shifting cost from secondary to (lower cost) primary care is often frustrated by the fact that the initiatives often surface unmet demand that was previously not visible. Therefore, many integrated care business cases often focus on the population health benefits rather than a reduction in cost to the system.

From an equity perspective, the Māori evaluation found that Māori enrolled with HCH providers experience consistently lower ASH rates than Māori not enrolled with HCH, although overall Māori experience approximately twice as many ASH hospitalisations and non-Māori, whether enrolled with an HCH provider or not.

In terms assessing the impact of the HCH programme on the use of urgent care services, it was necessary to take a longitudinal view to avoid the seasonal variation and random fluctuations. The charts below show a trend over 5 years in the use of in hours urgent primary care services for HCH practices and their non-HCH practice comparators.

\_

<sup>&</sup>lt;sup>16</sup> Dasgupta, K and Pacheco, G (2018) Health Care Homes: early evidence in Wellington. Wellington: NZ Productivity Commission

Non-HCH practice A has a linear trend up while Johnsonville and Karori practices trend down. The period reflects the 12 months ending in the quarter the two HCH practices started in the programme.

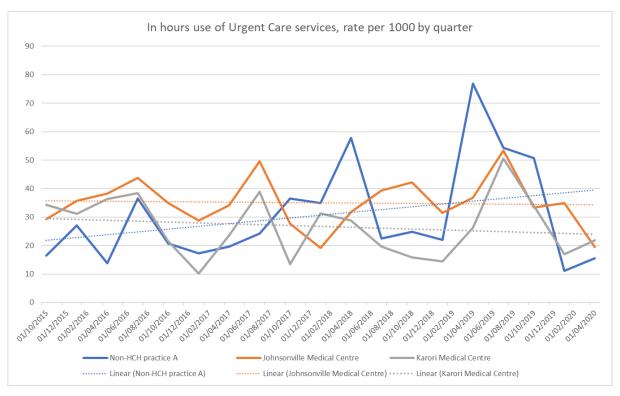


Figure 11 In hours use of urgent care services for Johnsonville Medical Centre, Karori Medical Centre and Non-HCH practice A

The chart below compares in a similar way Porirua Union Health (HCH) clinic with Non-HCH practice B. The PUCHs trend is flat while the Non-HCH practice B has a small increase over the period.

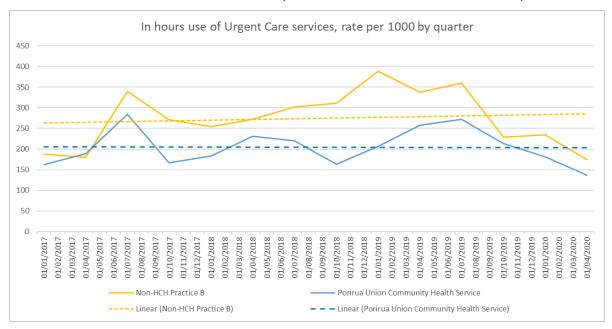


Figure 12 In hours use of urgent care services for PUCHS and Non-HCH Practice B

#### The Raumati practice trend tracks below its non-HCH comparator.

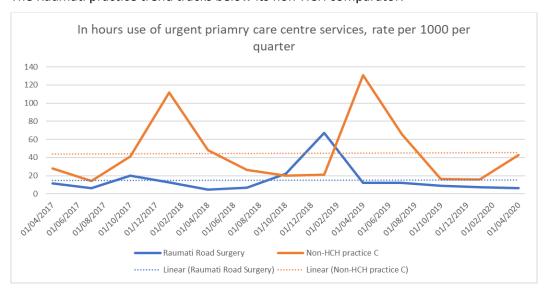


Figure 13 In hours use of urgent care services for Raumati Road Surgery and Non-HCH practice C

# Titahi Bay Doctors seems to have managed to bend the curve over the last five years albeit more gradually.

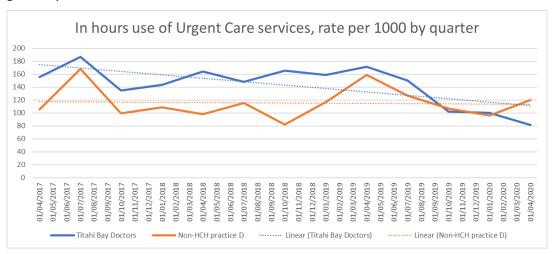
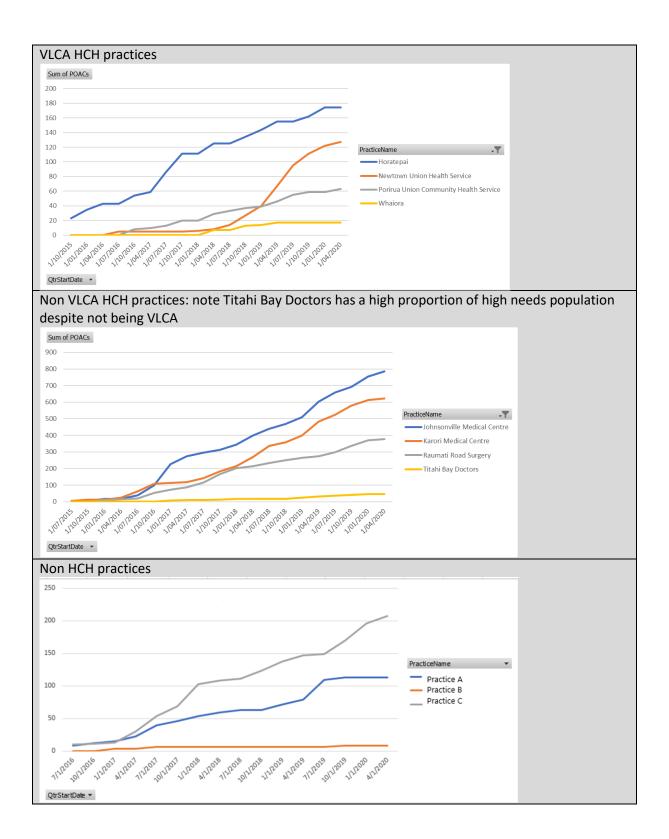


Figure 14 In hours use of urgent care services for Titahi Bay Doctors and Non-HCH practice D

# Reduced unplanned or low acuity care (all areas)

One focus has been on decompressing General Practice to provide more planned care and encourage up-take of alternatives to hospital care for those with DVT, cellulitis, etc. The data available – primary options for acute care- shows that HCH seems to have succeeded in freeing up General Practice to focus on more planned and complex care.

In terms of whether VLCA have fared different to non-VLCA ones, the charts below show VLCA HCH practices making progress over time in contributing to acute care diversion, albeit at a slower pace than non-VLCA ones. Non HCH practices are the slowest.



# Workforce experience

The HCH model sets out to decompress General Practice through bringing in new roles and hence it should help where there are shortages of GPs and/or growing demand from enrolled populations. Due to time limitations, an analysis of how the workforce makeup as changed was not possible. We have included this question in Annex 2 Parked Questions as one that would be useful to follow up.

A 2019 study<sup>17</sup> examining the level of burnout experienced by clinicians who work in HCH practices in the region found that clinicians who were working in the practices that had been in the HCH programme for some time reported a lower level of emotional exhaustion.

# 3.7 Agreement that the model helped preparedness to manage Covid-19

Interviewees described that because HCH practices had already adopted the necessary technology to allow them to carry out virtual consultations, they felt they were more resilient and better equipped to respond to the changes required to manage Covid-19. But it was not only the infrastructure required to enable remote consultations that helped equip practices to better deal with Covid-19. Just as important were the established relationships that had been formed as part of the HCH change process. Staff from different parts of the system already 'knew' each other and so were able to organize themselves and adapt to the new situation faster. Also, because practices had the 'change mindset', they were able to adapt faster.

'We were able to adapt quickly. We had to virtualise in space of 24 hours. We came together as a team very quickly to make rapid decisions and partly due to HCH experience and lean thinking, etc' (GP)

The hypothesis is that this would have allowed HCH practices to retain higher consultations rates than non HCH practices during Covid-19 (March – June 2020).

43

<sup>&</sup>lt;sup>17</sup> Tran, F. for Tu Ora Compass Health. July 2019. Clinician Burnout: The case of HCH practices in Capital & Coast

		HCH F	Pract	ice				Co	omp	arat	or (n	on H	ICH p	ract	tice)	
ohnsonville	e							Non-HCH o	com	para	tive r	oract	ice			
Month	0-4 5-1	4 15-24	25-44	54-64	65+	Total		Month			14 15-2			4 65+	- Total	
•							^	_								^
July 2019	0.67 0.2			0.45	0.75	0.43		July 2019			28 0.2					
August 2019	0.56 0.2			0.42	0.63	0.40		August 2019 September 20			31 0.2 23 0.2					- 1
September 2019 October 2019	0.55 0.2			0.39	0.59	0.37		October 2019		).45 0.						
November 2019	0.49 0.			0.44	0.58	0.34		November 20		0.50 0.						
December 2019	0.42 0.2			0.37	0.62	0.34		December 20			22 0.2					
January 2020	0.33 0.1			0.35	0.58	0.31		January 2020			17 0.2					
February 2020	0.31 0.1	7 0.24	0.26	0.35	0.53	0.31		February 202	0 0	).29 0.	22 0.2	27 0.2	26 0.3	4 0.5	3 0.31	
March 2020	0.35 0.1	8 0.26	0.30	0.43	0.65	0.37		March 2020	C	).36 0.	24 0.2	26 0.2	29 0.4	4 0.6	3 0.36	
April 2020	0.22 0.1	1 0.18	0.21	0.27	0.44	0.24		April 2020	C	).20 0.	13 0.2	20 0.2	23 0.2	7 0.3	8 0.23	
May 2020	0.34 0.2			0.38	0.49	0.33		May 2020		).33 0.						
June 2020	0.41 0.2			0.36	0.59	0.36	~	June 2020		).33 0.						~
Total	0.44 0.2	2 0.26	0.29	0.38	0.60	0.35		Total	0	.44 0.	24 0.2	25 0.2	8 0.3	7 0.5	4 0.34	
				111.				No. 11CH				<b>.</b>	•			
orirua Uni			7					Non-HCH o						ce   •		
Month	0-4 5-1		25-44		65+	Total	^	Month	0-4		15-24				Total	^
July 2019	0.72 0.2			0.82	1.17	0.56		July 2019	0.32	0.13	0.11	0.31			0.30	
August 2019	0.78 0.3			0.85	1.08	0.57		August 2019	0.25	0.11	0.13	0.21			0.24	
September 2019	0.81 0.3		0.48	0.76	1.17	0.56		September 2019 October 2019	0.42	0.15	0.13	0.21			0.28	
October 2019	0.53 0.2		0.43	0.78	1.16	0.51		November 2019	0.35	0.14	0.14	0.18			0.27	
November 2019 December 2019	0.57 0.2 0.42 0.2		0.43	0.76	0.99	0.49		December 2019	0.30	0.13	0.14	0.19			0.19	
January 2020	0.42 0.2			0.09	1.09	0.44		January 2020	0.20	0.08	0.05	0.21			0.19	
February 2020	0.44 0.2			0.67	0.96	0.43		February 2020	0.22	0.13	0.14	0.28	0.50	0.74	0.29	
March 2020	0.47 0.2			0.85	1.23	0.55		March 2020	0.28	0.15	0.15	0.29	0.57	0.83	0.32	
April 2020	0.22 0.1			0.50	0.81	0.29		April 2020	0.32	0.18	0.16	0.24	0.49	0.71	0.30	
May 2020	0.29 0.1			0.61	1.04	0.39		May 2020	0.19	0.14	0.12	0.21	0.43	0.42	0.23	
		7 0.20	0.35	0.70	1.07	0.44		June 2020	0.13	0.08	0.11	0.16	0.25	0.34	0.16	~
June 2020	0.38 0.2	7 0.28	0.55	0.70	1.07	0.44	V									
June 2020 <b>Total</b>	0.52 0.2	6 0.29		0.74		0.48	<u> </u>	Total	0.28	0.14	0.12	0.22	0.41	0.68	0.26	
June 2020 Total	0.52 0.2 ad Sur	6 0.29					^	Non-HCH o		para		oract			0.26 Total	^
June 2020 Total  Raumati Ro	o.52 o.2 oad Sur	ery 15-24	<b>0.42</b> 25-44	<b>0.74</b> 54-64	<b>1.07</b>	0.48	^	Non-HCH o	com	para	tive p	oract	ice			^
June 2020 Total  Caumati Ro  Month Iuly 2019	0.52 0.2 oad Sur 0-4 5-14 0.81 0.29	gery 15-24 9 0.44	0.42 25-44 0.48	<b>0.74</b> 54-64 0.50	<b>1.07</b> 65+ 0.83	0.48 Total 0.53	^	Non-HCH (	0-4	para 5-14	tive p	oract 25-44	ice 54-64	65+	Total	^
June 2020 Total  Caumati Ro  Month Iuly 2019  August 2019	o.52 0.2  oad Sur;  o-4 5-14  o.81 0.29  o.71 0.29	gery 15-24 9 0.44 9 0.38	0.42 25-44 0.48 0.42	54-64 0.50 0.47	1.07 65+ 0.83 0.82	0.48  Total  0.53  0.50	^	Non-HCH o	0-4 0.55	<b>para</b> 5-14 0.17	tive p	oract 25-44 0.27	54-64 0.34	65+ 0.65	Total 0.33	^
June 2020 Total  Raumati Ro Month  July 2019 August 2019 September 2019	0.52 0.2  rad Sur; 0-4 5-14  0.81 0.29 0.71 0.29 0.82 0.20	gery 15-24 9 0.44 9 0.38 5 0.31	0.42 25-44 0.48 0.42 0.47	54-64 0.50 0.47 0.50	1.07 65+ 0.83 0.82 0.83	0.48  Total 0.53 0.50 0.51	^	Non-HCH of Month July 2019 August 2019	0-4 0.55 0.45	para 5-14 0.17 0.20	tive p 15-24 0.25 0.25	0.27 0.20	54-64 0.34 0.31	65+ 0.65 0.51	Total 0.33 0.30	Ŷ
June 2020 Total  Raumati Ro Month  July 2019 August 2019 September 2019 October 2019	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.29  0.71 0.29  0.82 0.20  0.64 0.20	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.35	0.42 25-44 0.48 0.42 0.47 0.42	0.74 54-64 0.50 0.47 0.50	1.07 65+ 0.83 0.82 0.83 0.77	0.48  Total 0.53 0.50 0.51 0.47	^	Non-HCH of Month July 2019 August 2019 September 2019	0-4 0.55 0.45 0.41	para 5-14 0.17 0.20 0.19	15-24 0.25 0.25 0.24	0.27 0.20 0.18	0.34 0.31 0.27	65+ 0.65 0.51 0.48	Total 0.33 0.30 0.27	^
June 2020 Total  Raumati Ro Month  July 2019 August 2019 September 2019 October 2019 November 2019	0.52 0.2  rad Sur; 0-4 5-14  0.81 0.29 0.71 0.29 0.82 0.20	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.35 4 0.25	0.42 25-44 0.48 0.42 0.47	54-64 0.50 0.47 0.50	1.07 65+ 0.83 0.82 0.83	0.48  Total 0.53 0.50 0.51	^	Non-HCH of Month July 2019 August 2019 September 2019 October 2019	0-4 0.55 0.45 0.41 0.33	5-14 0.17 0.20 0.19 0.16	15-24 0.25 0.25 0.25 0.24	0.27 0.20 0.18 0.24	0.34 0.31 0.27 0.30	65+ 0.65 0.51 0.48 0.51	Total 0.33 0.30 0.27 0.29	^
June 2020 Total  Raumati Ro  Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.29  0.71 0.29  0.82 0.20  0.64 0.20  0.46 0.20	gery 15-24 0 0.44 0 0.38 0 0.31 0 0.25 0 0.27	0.42 25-44 0.48 0.42 0.47 0.42 0.35	0.74 54-64 0.50 0.47 0.50 0.47 0.46	1.07 65+ 0.83 0.82 0.83 0.77 0.78	0.48  Total 0.53 0.50 0.51 0.47 0.44	^	Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019	0-4 0.55 0.45 0.41 0.33 0.27	para 5-14 0.17 0.20 0.19 0.16 0.18	15-24 0.25 0.25 0.24 0.24	0.27 0.20 0.18 0.24	0.34 0.31 0.27 0.30 0.29	65+ 0.65 0.51 0.48 0.51 0.54	Total 0.33 0.30 0.27 0.29	^
June 2020 Total  Raumati Ro  Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2; 0.71 0.2; 0.82 0.2; 0.64 0.2; 0.46 0.2; 0.39 0.1;	gery 15-24 0 0.44 0 0.38 5 0.31 4 0.35 4 0.25 0 0.27 3 0.30	0.42 25-44 0.48 0.42 0.47 0.42 0.35 0.35	0.74 54-64 0.50 0.47 0.50 0.47 0.46 0.41	1.07 65+ 0.83 0.82 0.83 0.77 0.78 0.82	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42	^	Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019	0-4 0.55 0.45 0.41 0.33 0.27	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10	15-24 0.25 0.25 0.24 0.24 0.17 0.24	0.27 0.20 0.18 0.24 0.24 0.24	0.34 0.31 0.27 0.30 0.29	0.65 0.51 0.48 0.51 0.54 0.52	Total 0.33 0.30 0.27 0.29 0.27 0.28	^
June 2020 Total  Raumati Ro  Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2: 0.71 0.2: 0.82 0.2: 0.64 0.2: 0.46 0.2: 0.39 0.1: 0.33 0.1:	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.35 4 0.25 9 0.27 3 0.30 0 0.25	0.42 25-44 0.48 0.42 0.47 0.42 0.35 0.35 0.34	0.74 54-64 0.50 0.47 0.50 0.47 0.46 0.41 0.42	1.07 65+ 0.83 0.82 0.83 0.77 0.78 0.82 0.73	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40	^	Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10	0.25 0.25 0.25 0.24 0.24 0.17 0.24	0.27 0.20 0.18 0.24 0.24 0.24 0.19	0.34 0.31 0.27 0.30 0.29 0.31 0.26	0.65 0.51 0.48 0.51 0.54 0.52 0.59	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26	^
June 2020 Total  Raumati Ro  Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2: 0.71 0.2: 0.64 0.2: 0.64 0.2: 0.39 0.1: 0.33 0.1: 0.42 0.2!	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.35 4 0.25 9 0.27 3 0.30 0 0.25 7 0.35	0.42 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39	0.74 0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44	1.07 65+ 0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.77	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43	^	Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15	0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17	15-24 0.25 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19	0.27 0.20 0.18 0.24 0.24 0.24 0.19 0.21 0.28 0.19	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43	0.65 0.51 0.48 0.51 0.54 0.52 0.59 0.45 0.68	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24	^
June 2020 Total  Raumati Ro  Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2: 0.71 0.2: 0.64 0.2: 0.46 0.2: 0.39 0.1: 0.33 0.1: 0.42 0.2: 0.55 0.2:	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.25 9 0.27 3 0.30 0.25 7 0.35 0 0.25	0.42 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53	0.74 0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53	1.07 65+ 0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.77 0.90	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53	^	Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18	15-24 0.25 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25	0.27 0.20 0.18 0.24 0.24 0.24 0.29 0.21 0.28 0.19 0.21	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.29	0.65 + 0.65 0.51 0.48 0.51 0.54 0.52 0.59 0.45 0.68 0.47 0.58	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28	^
June 2020 Total  Caumati Ro Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2: 0.71 0.2: 0.64 0.2: 0.39 0.1: 0.33 0.1: 0.42 0.2: 0.55 0.2: 0.22 0.1!	gery   15-24   9   0.44   9   0.38   5   0.31   4   0.25   9   0.27   3   0.30   0.25   7   0.35   0.25   3   0.26   3   0.26	0.42 25-44 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.32	0.74 54-64 0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36	1.07 0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.77 0.90 0.54	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32	^	Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23	Dara 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20	15-24 0.25 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24	0.27 0.20 0.18 0.24 0.24 0.24 0.19 0.21 0.28 0.19 0.21 0.26	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.29 0.30	0.65 + 0.65 0.51 0.48 0.51 0.54 0.52 0.59 0.45 0.68 0.47 0.58 0.56	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30	^
June 2020 Total  Raumati Ro  Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020	0.52 0.2  ad Sur; 0-4 5-14 0.81 0.2 0.71 0.2 0.82 0.2 0.46 0.2 0.39 0.1 0.33 0.1 0.42 0.2 0.55 0.2 0.22 0.1 0.26 0.26	gery   15-24   15-24   9   0.44   9   0.38   14   0.25   9   0.27   3   0.30   0.25   7   0.35   0.25   3   0.26   0   0.34	0.42 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46	0.74 54-64 0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53	1.07 0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.77 0.90 0.54 0.80	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45	^	Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18	15-24 0.25 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25	0.27 0.20 0.18 0.24 0.24 0.24 0.29 0.21 0.28 0.19 0.21	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.29	0.65 + 0.65 0.51 0.48 0.51 0.54 0.52 0.59 0.45 0.68 0.47 0.58 0.56	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28	^
June 2020 Total  Raumati Ro  Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 June 2020 Total	0.52 0.2  ad Sur; 0-4 5-14 0.81 0.2: 0.71 0.2: 0.82 0.2: 0.64 0.2: 0.46 0.2: 0.39 0.1: 0.42 0.2: 0.55 0.2: 0.26 0.2: 0.46 0.3: 0.52 0.2:	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.35 4 0.25 9 0.27 8 0.30 0 0.25 7 0.35 3 0.26 0 0.34 6 0.32	0.42 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46	0.74 54-64 0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53	1.07 0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.77 0.90 0.54 0.86	0.48  Total 0.53 0.50 0.51 0.47 0.42 0.40 0.43 0.53 0.32 0.45 0.51	^	Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16	0.25 0.25 0.24 0.24 0.17 0.24 0.18 0.36 0.19 0.25 0.24	0.27 0.20 0.18 0.24 0.24 0.24 0.24 0.19 0.21 0.28 0.19 0.21 0.26 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.43 0.27 0.29 0.30 0.31	0.65 + 0.65 0.51 0.48 0.51 0.54 0.52 0.59 0.45 0.68 0.47 0.58 0.56	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30	^
June 2020 Total  Raumati Ro Month July 2019 August 2019 September 2019 October 2019 November 2019 Jenuary 2020 March 2020 April 2020 May 2020 June 2020 Total  Titahi Bay C	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2: 0.71 0.2: 0.64 0.2: 0.39 0.1: 0.33 0.1: 0.42 0.2: 0.55 0.2: 0.22 0.1: 0.26 0.2: 0.46 0.3: 0.52 0.2:  Ooctors	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.25 9 0.27 0.35 0 0.25 7 0.35 0 0.25 3 0.26 0 0.34	0.42 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46	0.74 54-64 0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46	1.07 65+ 0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.79 0.90 0.54 0.86 0.78	0.48  Total 0.53 0.50 0.51 0.47 0.42 0.40 0.43 0.53 0.32 0.45 0.51	^	Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16	0.25 0.25 0.24 0.24 0.17 0.24 0.18 0.36 0.19 0.25 0.24	Dract 0.27 0.20 0.18 0.24 0.24 0.19 0.21 0.28 0.19 0.21 0.26 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.29 0.30 0.31	65+ 0.65 0.51 0.48 0.51 0.54 0.52 0.59 0.45 0.68 0.47 0.58 0.56 0.56	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29	
June 2020 Total  Raumati Ro  Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total  Titahi Bay D	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2: 0.71 0.2: 0.64 0.2: 0.39 0.1: 0.33 0.1: 0.42 0.2: 0.55 0.2: 0.22 0.1: 0.26 0.2: 0.46 0.3: 0.52 0.2:  Ooctors	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.25 9 0.27 0.35 0 0.25 7 0.35 0 0.25 3 0.26 0 0.34	0.42 25-44 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41	0.74 0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46	1.07 65+ 0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.79 0.90 0.54 0.86 0.78	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34	5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16	15-24 0.25 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.24	Dract 0.27 0.20 0.18 0.24 0.24 0.19 0.21 0.28 0.19 0.21 0.26 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.29 0.30 0.31	65+ 0.65 0.51 0.48 0.51 0.54 0.52 0.59 0.45 0.68 0.47 0.58 0.56 0.56	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29	
June 2020 Total  Raumati Ro Month July 2019 August 2019 September 2019 October 2019 November 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total  Titahi Bay C Month July 2019	0.52 0.2  ad Sur; 0-4   5-14  0.81 0.2; 0.82 0.2; 0.64 0.2; 0.46 0.2; 0.39 0.1; 0.33 0.1; 0.42 0.2; 0.22 0.1; 0.26 0.2; 0.46 0.3; 0.52 0.2;  Ooctors	gery 15-24 15-24 15-24 15-24 15-24 15-24 15-24	0.42 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41	0.74 0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46	1.07    65+   0.83   0.82   0.83   0.77   0.78   0.82   0.73   0.77   0.90   0.54   0.80   0.78	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46		Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total  Non-HCH of Month	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34	5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16	15-24 0.25 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24 <b>0.24</b>	0.27 0.20 0.18 0.24 0.24 0.24 0.29 0.21 0.28 0.19 0.21 0.26 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.30 0.31	0.65 + 0.65 0.51 0.48 0.51 0.54 0.52 0.59 0.45 0.68 0.56 0.56 0.56	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29  Total	
June 2020 Total  Caumati Ro  Month  July 2019 August 2019 September 2019 October 2019 December 2019 January 2020 March 2020 April 2020 May 2020 June 2020 Total  Citahi Bay C  Month July 2019 August 2019	0.52 0.2  ad Sur; 0-4   5-14 0.81 0.2; 0.82 0.2; 0.64 0.2; 0.39 0.1; 0.33 0.1; 0.42 0.2; 0.26 0.2; 0.46 0.3; 0.55 0.2; 0.46 0.3; 0.50 0.2; 0.70 0.25 0.2; 0.70 0.25 0.2; 0.70 0.25 0.2; 0.70 0.25 0.2; 0.70 0.25 0.2; 0.70 0.25 0.2; 0.70 0.25 0.2; 0.70 0.25 0.25 0.2; 0.70 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.2	gery   15-24   15-24   0.31	0.42 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41	0.74  54-64  0.50  0.47  0.46  0.41  0.42  0.44  0.53  0.36  0.49  0.53  0.46	1.07  65+  0.83  0.82  0.83  0.77  0.78  0.82  0.73  0.77  0.90  0.54  0.86  0.78	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46		Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 June 2020 June 2020 Total  Non-HCH of Month July 2019	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34  com 0-4	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16  para  5-14 0.13 0.24	15-24 0.25 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24 <b>tive</b> [	0.27 0.20 0.24 0.24 0.24 0.29 0.21 0.28 0.19 0.21 0.26 0.29 0.21 0.26 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.39 0.30 0.31	0.65+ 0.65 0.51 0.54 0.52 0.59 0.45 0.68 0.47 0.58 0.56 0.56	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29  Total 1 0.43 7 0.42	
June 2020 Total  aumati Ro  Month  July 2019 August 2019 September 2019 October 2019 November 2019 Jecember 2019 Jecember 2019 Jecember 2020 March 2020 May 2020 June 2020 Total  itahi Bay D  Month July 2019 June 2019 June 2020	0.52 0.2  ad Sur; 0-4   5-14  0.81 0.2; 0.71 0.2; 0.64 0.2; 0.39 0.1; 0.33 0.1; 0.42 0.2; 0.26 0.2; 0.46 0.3; 0.52 0.2;  Doctors  0-4   5-14  0.75 0.33  0.66 0.37	gery   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-24   15-25	0.42 0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.41 25-44	0.74  54-64  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46	1.07  0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.77 0.90 0.54 0.80 0.78	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46  Total 0.61		Non-HCH of Month  July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 June 2020 Total  Non-HCH of Month  July 2019 August 2019	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34  COM 0-4 0.55 0.37	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16  para 5-14 0.13 0.24 0.17	15-24 0.25 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24 <b>tive</b> \$\mathbb{r}\$ 15-24	0.27 0.20 0.18 0.24 0.24 0.24 0.19 0.21 0.28 0.19 0.21 0.26 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.30 0.30 0.31	0.65 + 0.65 0.51 0.48 0.52 0.59 0.45 0.68 0.47 0.56 0.56 0.56 0.56 0.65 0.65 0.65 0.65	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29  Total 1 0.43 7 0.42 5 0.39	
June 2020 Total  Caumati Ro  Month July 2019 August 2019 September 2019 October 2019 November 2019 January 2020 March 2020 April 2020 May 2020 June 2020 Total  Citahi Bay D  Month July 2019 August 2019 September 2019	0.52 0.2  o-4 5-14  0.81 0.2  0.71 0.2  0.82 0.2  0.64 0.2  0.46 0.2  0.39 0.1  0.42 0.2  0.55 0.2  0.46 0.3  0.52 0.2  O-20 0.46  0.50 0.2  O-20 0.2  O-20 0.3  O-50 0.3  O-50 0.3  O-60 0.3  0.60 0.34  0.45 0.24  0.47 0.27	gery   15-24	0.42  0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41	0.74  54-64  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46	1.07    65+   0.83   0.82   0.83   0.77   0.78   0.82   0.73   0.77   0.90   0.54   0.80   0.78    1.17   1.15   1.14	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.51 0.45 0.51 0.46  Total 0.61 0.61 0.56		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 June 2020 Total  Non-HCH of Month July 2019 August 2019 September 2019	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34  CCOM 0-4 0.55 0.37 0.35	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16  para 5-14 0.13 0.24 0.17 0.11	15-24 0.25 0.25 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.24 0.24	0.27 0.20 0.18 0.24 0.24 0.29 0.21 0.28 0.19 0.21 0.26 0.23 0.29 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.39 0.30 0.31	0.65+ 0.65 0.51 0.48 0.52 0.59 0.45 0.68 0.47 0.58 0.56 0.56	Total  0.33  0.30  0.27  0.29  0.26  0.24  0.38  0.24  0.28  0.30  0.29  Total  1 0.43  7 0.42  5 0.39  3 0.39	
June 2020 Total  Raumati Ro Month July 2019 August 2019 September 2019 October 2019 November 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total  Titahi Bay D Month July 2019 August 2019 September 2019	0.52 0.2  o-4 5-14  0.81 0.2  0.71 0.2  0.82 0.2  0.64 0.2  0.46 0.2  0.39 0.1  0.42 0.2  0.25 0.2  0.46 0.2  0.26 0.2  0.46 0.3  0.40 0.3  0.40 0.3  0.40 0.3  0.41 0.41  0.42 0.2  0.44 0.3  0.45 0.2  0.46 0.3  0.46 0.3  0.46 0.3  0.46 0.3  0.46 0.3  0.47 0.39 0.22	gery   15-24	0.42  0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41  25-44  0.50 0.48 0.47 0.46 0.40 0.38	0.74  54-64  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46  54-64  0.75 0.75 0.60 0.64 0.57 0.61	1.07    65+   0.83   0.82   0.83   0.77   0.78   0.82   0.73   0.77   0.90   0.54   0.80   0.86   0.78   1.17   1.15   1.14   1.08   1.05   1.05   0.56   0.57   0.	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46  Total 0.61 0.61 0.56 0.53 0.49 0.48		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 June 2020 Total  Non-HCH of Month July 2019 August 2019 September 2019 October 2019	0-4 0.55 0.45 0.41 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34  COM 0-4 0.55 0.37 0.35 0.25	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.16  para 5-14 0.13 0.24 0.17 0.11 0.11	15-24 0.25 0.25 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.21 0.26 0.27 0.26	0.27 0.20 0.18 0.24 0.24 0.19 0.21 0.28 0.19 0.21 0.26 0.23 0.29 0.23	ice 0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.43 0.27 0.30 0.31 0.66 0.43 0.70 0.90 0.31 ice	0.65+ 0.65 0.51 0.48 0.52 0.59 0.45 0.68 0.47 0.58 0.56 0.56	Total  0.33  0.30  0.27  0.29  0.27  0.28  0.26  0.24  0.38  0.24  0.28  0.30  0.29  Total  1  0.43  7  0.42  5  0.39  3  0.39  9  0.34	
June 2020 Total  Raumati Ro  Month July 2019 August 2019 September 2019 October 2019 November 2019 January 2020 March 2020 March 2020 April 2020 March 2020 June 2020 Total  Titahi Bay D  Month July 2019 August 2019 September 2019 October 2019 November 2019 October 2019 November 2019 October 2019 November 2019 October 2019 November 2019 October 2019 Innuary 2020	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2: 0.82 0.2: 0.64 0.2: 0.46 0.2: 0.49 0.33 0.1: 0.42 0.2: 0.46 0.2: 0.46 0.30  0.52 0.2: 0.46 0.30  0.52 0.2: 0.46 0.30  0.52 0.2: 0.46 0.31  0.47 0.37  0.39 0.22  0.37 0.19	gery 15-24 0.31 0.35 0.25 0.31 15-24 0.31 0.35 0.36 0.35 0.36 0.35 0.36 0.36 0.37	25-44  0.48  0.42  0.47  0.42  0.35  0.34  0.39  0.53  0.32  0.40  0.41  25-44  0.50  0.48  0.47  0.46  0.40  0.38  0.37	0.74  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46  54-64  0.75 0.75 0.60 0.64 0.57 0.61 0.61	1.07  0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.90 0.54 0.80 0.86 0.78  1.17 1.15 1.14 1.08 1.05 1.04	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46  Total 0.61 0.56 0.53 0.49 0.48 0.46		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 January 2020 February 2020 March 2020 April 2020 June 2020 Total  Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34  COM  0-4 0.55 0.37 0.35 0.25 0.23	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.16  para 5-14 0.13 0.24 0.17 0.11 0.11 0.19	15-24 0.25 0.25 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.21 0.24 0.24 0.21	0.27 0.20 0.18 0.24 0.24 0.19 0.21 0.28 0.19 0.21 0.26 0.23 0.29 0.23	ice 0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.30 0.31 ice 54-64 0.50 0.48 0.46 0.50 0.40 0.41	65+  0.65  0.51  0.48  0.52  0.59  0.45  0.68  0.47  0.58  0.56  0.56  0.56	Total  0.33  0.30  0.27  0.29  0.27  0.28  0.26  0.24  0.38  0.24  0.28  0.30  0.29  Total  1  0.43  7  0.42  5  0.39  3  0.39  9  0.34  0  0.32	
June 2020 Total  Raumati Ro  Month  July 2019 August 2019 September 2019 October 2019 November 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total  Titahi Bay D  Month  July 2019 August 2019 September 2019 October 2019 November 2019 October 2019 November 2019 October 2019 November 2019 October 2019 August 2020 September 2020 September 2020	0.52 0.2  octors  0.4 5-14  0.81 0.2  0.71 0.2  0.82 0.2  0.64 0.2  0.46 0.2  0.49 0.2  0.40 0.2  0.40 0.3  0.41 0.3  0.42 0.2  0.45 0.3  0.46 0.3  0.46 0.3  0.46 0.3  0.46 0.3  0.47 0.75 0.3  0.49 0.34  0.47 0.27  0.39 0.22  0.37 0.19  0.35 0.22  0.37 0.19  0.35 0.22	gery   15-24   0.31   0.35   0.34   0.25   0.34   0.25   0.26   0.34   0.35   0.36   0.35   0.36   0.32   0.31   0.35   0.34   0.29   0.22   0.27   0.22   0.29   0.29	0.42  0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41  25-44 0.50 0.48 0.47 0.46 0.40 0.38 0.37 0.34	0.74  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46  54-64  0.75 0.75 0.60 0.64 0.57 0.61 0.61 0.53	1.07  0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.79 0.90 0.54 0.80 0.78  1.17 1.15 1.14 1.08 1.05 1.04 0.92	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46  Total 0.61 0.61 0.56 0.53 0.49 0.48 0.46 0.43		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total  Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019	0-4 0.55 0.45 0.41 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34  COM  0-4 0.55 0.37 0.35 0.25 0.23 0.21	para 5-14 0.17 0.20 0.19 0.16 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16  para 5-14 0.13 0.24 0.17 0.11 0.11 0.19 0.11 0.10 0.11 0.10 0.11 0.10 0.11 0.10 0.11 0.10 0.11 0.10 0.11 0.10 0.10 0.10	15-24 0.25 0.25 0.24 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.24 0.21 0.26 0.27 0.24 0.19 0.20	0.27 0.20 0.18 0.24 0.24 0.19 0.21 0.26 0.23 0.29 0.21 0.26 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.43 0.27 0.29 0.30 0.31  iice 54-64 0.50 0.44 0.50 0.44 0.50	0.65+ 0.65 0.51 0.48 0.52 0.59 0.45 0.68 0.47 0.58 0.56 0.56 0.56 0.66 0.66 0.66 0.75	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29  Total 1 0.43 7 0.42 5 0.39 3 0.39 9 0.34 0 0.32 3 0.29	
June 2020 Total  Raumati Ro  Month July 2019 August 2019 September 2019 December 2019 January 2020 March 2020 May 2020 June 2020 June 2020 Total  Titahi Bay C  Month July 2019 August 2019 September 2019 September 2019 June 2020 Total  Titahi Bay C  Month July 2019 August 2019 September 2019 December 2019 December 2019 December 2019 December 2019 June 2020 February 2020 March 2020 March 2020 March 2020 March 2020 March 2020	0.52 0.2  o-4   5-14  0.81 0.2  0.64 0.2  0.64 0.2  0.64 0.2  0.65 0.2  0.64 0.2  0.65 0.2  0.65 0.2  0.66 0.3  0.66 0.3  0.66 0.3  0.66 0.3  0.67 0.3  0.69 0.3  0.40	gery 15-24 0 0.44 0 0.38 5 0.31 4 0.35 0 0.25 0 0.25 0 0.36 0 0.35 0 0.36 0 0.36 0 0.36 0 0.37	0.42  0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41  25-44 0.50 0.48 0.47 0.46 0.40 0.38 0.37 0.34 0.53	0.74  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46  54-64 0.75 0.75 0.60 0.64 0.57 0.61 0.61 0.53 0.81	1.07  0.83 0.82 0.83 0.77 0.78 0.82 0.73 0.77 0.90 0.54 0.80 0.78  655+ 1.17 1.15 1.14 1.108 1.05 1.04 0.92 1.37	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46  Total 0.61 0.56 0.53 0.49 0.48 0.46 0.43 0.64		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 December 2019 January 2020 February 2020 March 2020 April 2020 May 2020 June 2020 Total  Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020	0-4 0.55 0.45 0.41 0.27 0.28 0.33 0.24 0.28 0.15 0.24 0.23 0.34  COM 0-4 0.55 0.37 0.35 0.25 0.23 0.21 0.16	para 5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16  para 5-14 0.13 0.24 0.17 0.11 0.11 0.19 0.10 0.11 0.10 0.11 0.10 0.11 0.10 0.11 0.11 0.11 0.11 0.09 0.06 0.08	15-24 0.25 0.25 0.24 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.24 0.21 0.26 0.27 0.26 0.27 0.26 0.27 0.24 0.19 0.20 0.16	0.27 0.20 0.18 0.24 0.24 0.19 0.21 0.26 0.23 0.25 0.22 0.23 0.25	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.26 0.43 0.27 0.29 0.30 0.31  ice 54-64 0.50 0.48 0.40 0.40 0.41 0.36 0.41	65+  0.65  0.51  0.48  0.51  0.52  0.59  0.45  0.68  0.75  0.68  0.75  0.66  0.75  0.66  0.75  0.66  0.75  0.66  0.75  0.66  0.75	Total 0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29  Total 1 0.43 7 0.42 5 0.39 3 0.39 9 0.34 0 0.32 3 0.29 0 0.34	
June 2020 Total  Raumati Ro  Month July 2019 August 2019 September 2019 October 2019 December 2019 January 2020 March 2020 June 2020 Total  Titahi Bay D  Month July 2019 August 2019 September 2019 June 2020	0.52 0.2  o-4   5-14  0.81 0.2  0.64 0.2  0.64 0.2  0.64 0.2  0.65 0.2  0.65 0.2  0.65 0.2  0.66 0.3  0.66 0.3  0.66 0.3  0.67 0.3  0.68 0.3  0.69 0.3  0.60	gery 15-24 0.31 0.35 0.31 0.35 0.25 0.31 0.35 0.26 0.31 0.35 0.34 0.39 0.25 0.31 0.35 0.31	0.42  0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41  25-44 0.50 0.48 0.47 0.46 0.40 0.38 0.37 0.34 0.53 0.31	0.74  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46  54-64 0.75 0.60 0.64 0.57 0.61 0.53 0.81 0.57	1.07  65+  0.83  0.77  0.78  0.82  0.73  0.77  0.90  0.54  0.80  0.78  655+  1.17  1.15  1.14  1.14  1.08  1.09  1.37  1.08	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46  Total 0.61 0.53 0.49 0.48 0.46 0.43 0.64 0.43		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 December 2019 January 2020 February 2020 March 2020 April 2020 June 2020 Total  Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 February 2020	0-4 0.55 0.45 0.41 0.28 0.33 0.24 0.28 0.35 0.34 0.29 0.35 0.34 0.29 0.37 0.36 0.37 0.36 0.37 0.37 0.38	5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.18 0.20 0.16	15-24   0.25   0.25   0.24   0.20   0.18   0.36   0.19   0.25   0.24   0.24   0.26   0.27   0.26   0.27   0.26   0.27   0.26   0.27   0.26   0.27   0.20   0.16   0.21   0.21	0.27 0.20 0.18 0.24 0.29 0.21 0.28 0.19 0.21 0.26 0.23  Dract 0.29 0.20 0.20 0.20 0.20 0.20 0.20 0.20	0.34 0.37 0.30 0.29 0.31 0.26 0.43 0.27 0.30 0.29 0.31 0.26 0.43 0.27 0.30 0.31  ice  54-64 0.50 0.44 0.41 0.36 0.41	0.65 + 0.65   0.65   0.51   0.52   0.59   0.45   0.56   0.56   0.56   0.56   0.66   0.56   0.66   0.	Total  0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29  Total  1 0.43 7 0.42 5 0.39 3 0.39 9 0.34 0 0.32 3 0.29 0 0.34 2 0.43	
June 2020 Total  Raumati Ro  Month  July 2019 August 2019 September 2019 November 2019 December 2019 January 2020 March 2020 April 2020 May 2020 June 2020 Total  Titahi Bay D  Month July 2019 August 2019 September 2019 September 2019 October 2019 November 2019 December 2020 March 2020 March 2020 May 2020 May 2020	0.52 0.2  ad Sur; 0-4 5-14  0.81 0.2: 0.71 0.2: 0.82 0.2: 0.64 0.2: 0.46 0.2: 0.40 0.2: 0.42 0.2: 0.42 0.2: 0.46 0.3: 0.55 0.2: 0.41 0.33  0.52 0.2: 0.46 0.3: 0.57 0.33  0.60 0.37 0.19 0.37 0.19 0.37 0.19 0.37 0.37 0.31 0.17 0.32 0.15	gery 15-24 9 0.44 9 0.38 5 0.31 4 0.25 9 0.27 3 0.30 0.25 0 0.35 0 0.35 0 0.34 0.39 0.29 0.34 0.29 0.22 0.27 0.22 0.27 0.23	0.42  0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41  25-44  0.50 0.48 0.47 0.46 0.40 0.38 0.37 0.34 0.53 0.31 0.34	0.74  54-64  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46  54-64  0.75 0.60 0.64 0.57 0.61 0.61 0.53 0.81 0.57 0.61	1.07    65+   0.83   0.82   0.83   0.77   0.78   0.82   0.77   0.54   0.80   0.86   0.78   0.78   0.78   0.78   0.78   0.78   0.78   0.78   0.78   0.78   0.	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.45 0.51 0.46  Total 0.61 0.56 0.53 0.49 0.48 0.46 0.43 0.64 0.43 0.46		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 April 2020 May 2020 June 2020 Total  Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 March 2020	0-4 0.55 0.45 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.35 0.37 0.25 0.37 0.35 0.25 0.23 0.21 0.16 0.22 0.33	5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.16  5-14 0.13 0.24 0.17 0.11 0.09 0.06 0.08 0.11 0.09	tive   15-24   0.25   0.24   0.24   0.20   0.16   0.25   0.24   0.25   0.24   0.25   0.24   0.25   0.24   0.26   0.27   0.26   0.27   0.26   0.27   0.20   0.16   0.21   0.24   0.24   0.21   0.24   0	0.27 0.20 0.24 0.24 0.24 0.24 0.21 0.25 0.27 0.27 0.27 0.28 0.29 0.21 0.26 0.23 0.29 0.29 0.21 0.26 0.23	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.43 0.27 0.30 0.31 0.26 0.43 0.27 0.30 0.31  ice  54-64 0.50 0.40 0.40 0.40 0.40 0.40 0.40 0.4	0.65 0.65 0.51 0.54 0.52 0.59 0.45 0.68 0.56 0.56 0.56 0.68 0.70	Total  0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.38 0.24 0.28 0.30 0.29  Total  1 0.43 7 0.42 5 0.39 3 0.39 9 0.34 0 0.32 3 0.29 0 0.34 1 0.31	
June 2020 Total  Raumati Ro Month July 2019 August 2019 September 2019 October 2019 December 2019 January 2020 March 2020 April 2020 May 2020 June 2020 Total  Fitahi Bay D  Month July 2019 August 2019 September 2019 Jone 2020 Total  Fitahi Bay D  Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 March 2020 March 2020 March 2020 March 2020 May 2020 June 2020 June 2020	0.52 0.2  o-4   5-14  0.81 0.2  0.64 0.2  0.64 0.2  0.64 0.2  0.65 0.2  0.65 0.2  0.65 0.2  0.66 0.3  0.66 0.3  0.66 0.3  0.67 0.3  0.68 0.3  0.69 0.3  0.60	gery 15-24 0.31 0.35 0.31 0.35 0.25 0.31 0.35 0.26 0.31 0.35 0.34 0.39 0.25 0.31 0.35 0.31	0.42  0.48 0.42 0.47 0.42 0.35 0.35 0.34 0.39 0.53 0.40 0.46 0.41  25-44 0.50 0.48 0.47 0.46 0.40 0.38 0.37 0.34 0.53 0.31	0.74  54-64  0.50 0.47 0.50 0.47 0.46 0.41 0.42 0.44 0.53 0.36 0.49 0.53 0.46  54-64  0.75 0.60 0.64 0.57 0.61 0.61 0.53 0.81 0.57 0.61	1.07    65+   0.83   0.82   0.83   0.77   0.78   0.82   0.73   0.77   0.90   0.54   0.86   0.78   0.	0.48  Total 0.53 0.50 0.51 0.47 0.44 0.42 0.40 0.43 0.53 0.32 0.45 0.51 0.46  Total 0.61 0.53 0.49 0.48 0.46 0.43 0.64 0.43		Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 April 2020 May 2020 June 2020 Total  Non-HCH of Month July 2019 August 2019 September 2019 October 2019 November 2019 December 2019 January 2020 February 2020 March 2020 April 2020 April 2020 April 2020 April 2020	0-4 0.55 0.41 0.33 0.27 0.28 0.33 0.24 0.28 0.33 0.24 0.23 0.34  0.55 0.37 0.35 0.25 0.23 0.21 0.16 0.22 0.33 0.19	5-14 0.17 0.20 0.19 0.16 0.18 0.10 0.11 0.12 0.17 0.09 0.16 0.18 0.20 0.16 0.19 0.10 0.11 0.10 0.11 0.10 0.11 0.10 0.11 0.10 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.09 0.06	15-24 0.25 0.24 0.24 0.17 0.24 0.20 0.18 0.36 0.19 0.25 0.24 0.24 0.20 0.16 0.21 0.26 0.27 0.24 0.19 0.20 0.16 0.21 0.24 0.15	0.27 0.20 0.18 0.24 0.24 0.24 0.29 0.21 0.26 0.23  Dract  25-44 0.32 0.29 0.28 0.29 0.28 0.29 0.28 0.29 0.28 0.29 0.28 0.29 0.28 0.29 0.28 0.29 0.28 0.29 0.28 0.29 0.28	0.34 0.31 0.27 0.30 0.29 0.31 0.26 0.43 0.27 0.30 0.31 0.26 0.43 0.27 0.30 0.31 0.26 0.44 0.50 0.40 0.41 0.36 0.41 0.57	0.65 + 0.65   0.65   0.51   0.54   0.52   0.59   0.45   0.56   0.56   0.56   0.56   0.56   0.68   0.77   0.68   0.69   0.66   0.	Total  0.33 0.30 0.27 0.29 0.27 0.28 0.26 0.24 0.28 0.30 0.29  Total  1 0.43 7 0.42 5 0.39 3 0.39 9 0.34 0 0.32 3 0.29 0 0.34 0 0.32 0 0.34 1 0.31 2 0.36	

New Zealand went into level 4 lockdown on 25 March 2020. We looked for patterns particularly over the April and May 20 lockdown period – both relative to the practices internal rate over the last year (we did not have previous years data for comparison) then relative between HCH and non HCH practices of similar size and population mix.

- Data showed a spike in consultations for March for all practices. We assume this was pre the lockdown.
- April showed a drop in all practices consultations relative to previous months.
- There was no discernible difference between Johnsonville and its comparative non-HCH practice for April - June
- PUCHS appears to have sustained a high rate both internally and in comparison with Pacific Health Plus.
- Raumati appears to have been able to sustain the same level of consultations in comparison
  with previous months and more than its comparative non-HCH practice but in relative
  terms, the non-HCH practice also retained a similar level of consultations to previous
  months.

The data is inconclusive in that there is no clear pattern that all of the HCH practices performed more consultations in relative terms than there non-HCH counterparts in the COVID-19 period. The data shows that the notable (positive) exception during COVID-19 appears to be PUCHS.

The graph below shows the number of telephone consults coded, by practice for 2019 and 202 April to June quarters. Karori is excluded as data was not available for this quarter. It shows that telephone consults doubled over the Covid-19 period reflecting the findings from the interviews that practices felt ready to offer alternatives to face-to-face consults. Data was not available for non-HCH practices to compare.

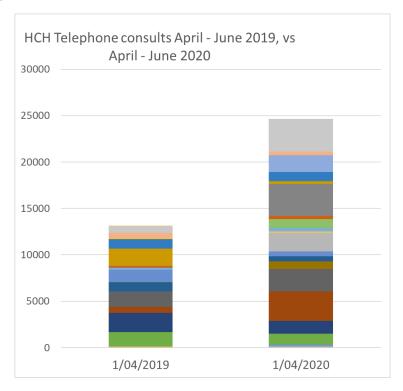


Figure 15 Telephone consults for HCH practices over Covid-19

# 4. Maturity of the model against main building blocks of Integrated Care

IFIC has recently refreshed the main building blocks of integrated care. We have reflected on how the HCH programme has tracked against each building block based on our observations from this evaluation.



#### Shared vision and values

This is variable depending which level of the system you are looking at. At the executive and governance level, this appears to be clear. There is the issue of values alignment – it is not enough to have a shared vision, the values also need to be aligned and, in the case of Māori and Pacific, it remains to be seen how the new HCH model of care adjustments will be implemented and received. There is a balance to be achieved between alignment of values but sufficient flexibility of approach to allow for local ownership (see also point on Governance).

The translation from the executive level of the vision to the service delivery level appears to be missing a cog of translation. The question "Where do I fit in this picture and how can I positively influence it?" was one we received in various guises from those at practice and community level who were at the coal face of care delivery.

"In Counties Manukau, the 20,000 bed day campaign was clear about a tangible target. This cascaded down so people could understand and build their own narrative about – 'this is where I fit in this picture and this is what I can do to help deliver that. The HCH model does not have the same clarity." <Executive/governance>

It is important to paint a clear goal but then allow the local and personalised narratives for ownership and sense of common purpose.

Having a shared vision and understanding of purpose in the HCH model case seems to depend on:

- Maturity of the practices involved at the start of the journey
- Strength of leadership at the practice level and whether there were any champions
- Difference in business ownership model of practices potentially influencing their ability and appetite for change

This has implications for the sustainability of the model. Practices are not a homogenous grouping and the development of internal shared vision is also important.

As the programme moves into the next phase of community networks, the narrative may also need to change. There has been a strong focus in the first phase (years 1-5) on the value-added outputs and business change outputs that would support more efficient delivery of care. Many of these are very General Practice centric and so these will need to be reviewed to ensure the community providers see themselves in the model.

# Population health and local context

The population health focus has not translated so well in the case of HCH. While the elements of strengthening primary care, supporting process and infrastructure of HCH are strong, the population and person-centred focus is not as strong from the interviews we conducted. Being a health-centric model, the ability to address the social determinants of health remains limited. There is the vision and rhetoric of population health – but this appears to be more from the view that, if we get the processes right, the outcomes will be better. Around the world, attempts to achieve better population health and wellbeing fall short because efforts tend not to focus on addressing the root causes - the determinants of health and the reduction of health disparities. There are some localised examples where the practices have adopted a more local approach to allow for context (Porirua)—but this has been variable across practices. The development of the Community Health Networks is an opportunity to develop this further. It will be important to focus on understanding the local strengths/assets, pressures and needs and to work closely with councils and other community organisations to tailor initiatives.

#### People as partners in care

The Year of Care Plan is a tangible example of people as partners in care — however, this has had variable interpretation and uptake. Access to notes on the patient portal and the ability for patients to participate in MDT meetings (although this happened rarely) are also good examples where people feel more involved in their care. The lack of community and consumer voice at the governance table and therefore their participation in the design and delivery of services is something that has been lacking so far. It is recognised by the executive and leadership of HCH as the logical and natural progression of the HCH model with true partnership for holistic care. This has been variably described by the stakeholders as needing governance by locality with the relevant people. This cannot be seen as health extending outward, rather, the healthcare system needs to work in partnership, need to bring localities and communities to the decision-making table including appropriate community representation. This is an opportunity for next steps— and a necessity as the focal point of care. Patient centred care appears to be currently interpreted as "how do we provide the best access and best use of our resources to deliver care", not "How do we empower you to be better about managing your own care." These two need to be reconciled.

#### Resilient communities and new alliances

Both the PHO and the DHB visions are all about the 'community' but, so far, the community is not really in the picture beyond establishing stronger relationships between General Practices and community-based care services through Community Services Integration.

While the focus for the first five years has been around building practice efficiency and delivering better and more coordinated care, there is wide recognition from those interviewed that codesigning the future of health and care services in partnership with communities and a deeper integration with community taking an asset-based approach would strengthen future services by improving access and reducing health inequities through better addressing social determinants of health and a allowing stronger focus on population health. This transitions the focus from health and intervention to community resilience and health as part of a bigger whole of wellbeing. Communities have always been the backbone of our societies and have stepped up at times when there are gaps in

the system. It is time to give communities back control and support them in creating their own solutions.

Community Health Networks were described by several interviewees as the next evolutionary stage of the HCH model. Community Health Networks (as outlined in the Health Systems Plan) are CCDHBs mechanism to organise the delivery of health services to meet the needs of the population in the network. Each Network will be a geographic cluster of populations from 20,000-50,000 and include a grouping of Health Care Home practices at its core service with robust connections with other health services relevant to the population supporting better preventative, proactive, acute and after hours care.

'The whole idea is to take a whole group of practices, social services and community providers and integrate them into an area...would have community governance partnering with PHO, DHB and Iwi.

This is building upon the HCH model' <GP>

'It remains a medical, health-centric model at the moment. This was necessary because it was all about setting up the bases, logistics, relationships, infrastructure. But moving towards the future we need to work closely with localities and community and the governance must reflect that' <Change management>

'We have begun building links with Māori mental health services, but we would like to build links with other places like housing and WINZ' (GP)

Now there is 80% coverage of the population under HCH, there is enough critical mass to take this to the next level around community engagement and a wider network of alliances, including with housing, work and income, the NGO and voluntary sector, etc. There is a need to be careful that lower socio-economic groups do not get left behind. "Where is the voice of the voiceless?" This is also an opportunity to work alongside and with those who understand the cultural differences. It does not need to be about interpretation of need and norms – rather linking with those people and groups that act as links between both.

# Workforce capacity and capability

The introduction of new roles, particularly the health care assistant and clinical pharmacists have been widely viewed as a success. The whole model tests the boundaries of working at top of scale and leveraging the team (including community teams). A shared responsibility and shared team is recognised as providing more well-rounded and responsive care to those with complex needs. A student researcher evaluated staff experience in HCH in CCDHB regions<sup>18</sup> and her findings echo many of those in this evaluation:

- Healthcare can be provided in number of different ways GP triage, Patient portal
- Better relationships with the external health services
- Increased accessibility to healthcare—Patient portal
- Taking on wider roles to work on top of their scope
- More efficient systems and standard processes to reduce wasted time and resources
- Increased teamwork within the practice

VLCA practices may not be able to sustain new roles introduced by the HCH model if the funding for these roles is discontinued. These practices have less flexibility to be able to absorb change. Some of those interviewed (particularly hospice and clinical pharmacy) noted that workload often prevented them attending sufficient MDTs and having enough capacity to be able to work effectively over the various practices. This seems, particularly to be the case for VLCA practice-based staff. This

<sup>&</sup>lt;sup>18</sup> Kim, H. Evaluating the staff experience: Learnings from Health Care Homes in the CCDHB Regions. 2019

is a broader issue than HCH and is related to allocation of (both HCH and other top-up) funding by some VLCA practices.

# System wide governance and leadership

"Our goal was to spread long, fast and wide. For this the governance needed to be centralised and overarching. We needed a very centralised model and it has worked to get us to where we are."

The governance model has been a balance of GP, Practice and DHB to date. This has enabled strong relationships and trust to be forged at the senior level, which has helped with the focus and investment for the programme so far. The centralised nature of governance and focus appears to be a strong contributing factor to the success of uptake and adoption of Lean and corresponding metrics to drive change. But it has gaps. The voice of the consumer and the community is absent in the current governance model.

If the strategy was to forge ahead for complete adoption of the HCH model, then the current governance with some additions at the periphery would work. However, the evolution to community health networks should be a catalyst to the review of a suitable governance model for this transition.

A top down and concerted effort for getting everyone to the starting line for the next phase has worked well. The next phase of community based engagement and care is much more dispersed and nuanced and needs to bring the community with it — recognising that each community is different and with different needs, there is no single homogenous model that can be applied to this. This is akin to moving from a tactical warfare approach to a jungle warfare approach — and what works for one could be the undoing of the model if applied to the other.

The hallmarks of governance for the next phase are: networked, principle and alliance based, trust based and – this might be the hardest transition to make – a move to a tight/loose/tight model of clear objectives and measures with flexibility and autonomy for local delivery. Community based organisations will be unlikely to have the same support infrastructure and maturity of the, now well enabled HCH practices. There is a balancing act of laying the tracks in front of the moving train as you build capacity in community engagement while not progressing so quickly that people feel left behind.

#### **Digital Solutions**

This is the most mature and strongest element of the building blocks that the HCH model has. From telephone triage, portal adoption and use and virtual consultations (riding the tidal wave of COVID-19-19), HCH practices reviewed have all reflected the strength and leverage of these new modes of care for better delivery and reach.

Three cautionary notes however:

- The unintended consequence of equity of access based on lower socio economic and language/cultural barriers to access of electronic solutions particularly reflected in aged Pacifika populations. There is some dissonance on this topic. Based on some interviewees' comments and echoed in the Māori and Pacifika evaluations is the concern that not every family (and particularly those in lower socio-economic conditions) have access to data for technology. Others reflected that there is good uptake by this group. The data around portal use and the split by ethnicity is not available to validate this either way and we recommend that this be obtained and reviewed as part of the standard reporting to ensure that there are not unintended inequities being introduced by the model of portal adoption and use.
- The patient portal has been useful in supporting the general practice and medical intervention model of this phase of the HCH. As the next phase moves into community

- networks and community integration, the portal functionality and its use should be reviewed to ensure it supports this broader scope including shared care plans.
- The adoption and use of the risk stratification tool is being applied variably. Some practices we reviewed have reflected that the focus is at the top of the pyramid to those patients who are the most complex and have the highest need. While this sounds a reasonable approach, it is duplicating effort by focussing on those that the practice staff already know well and are serving while not proactively identifying the cohort that, with the right interventions, could be managed proactively before they move into the higher complexity (and higher effort and cost) segment.

# Aligned payment systems

While a long run programme, the funding is, nonetheless, regarded as a project (i.e. beginning, middle and end) rather than having a clear strategy on how to operationalise the model. There was a clear intention that the initial funding was pump-priming to enable new processes and roles to be embedded and operationalised that would then become business-as-usual and be offset by the efficiencies of the model. There was also some discussion – though less specific, about the funding applied to General Practice in the first phase being re-purposed to support community integration in the next phase. These assumptions need to be examined now the project is reaching the end of phase 1 and due to move into phase 2.

At a fundamental level, it is undecided what funding there is beyond year 5 to continue the HCH programme. The next level question is how this can and should be best applied.

The strength of the funding model to date could be the weakness of the model into the next phase. During the first phase (years 1-5), funding has been allocated (very effectively) to capacity building for General Practice. Its application is at a per capita level (\$16 per enrolled patient in an HCH practice) and has been used to free up time for staff to develop the lean processes and to fund centralised and coordinated roles for change. The perception is that this is practice income for HCH development.

In a broader context, the framing could be that it is funding for increasing the reach and effectiveness of health and wellbeing for the population (read broader community and holistic approach to care).

The current context of HCH and the application of resource to community could be best described as an outreach philosophy —services are being provided by HCH practices into the community. The broader question is how to shift this philosophy and approach into a network and partnership model ("outside-in" meets "inside-out").

There is a crossroads that the project is (already) at that needs to be discussed openly and logically regarding funding as the programme moves into community focus and settings:

- 1. What (quantum of) funding is there for the next phase?
- 2. What is the next phase trying to achieve?
- 3. What behavioural changes do we need to stimulate?
- 4. How can the funding be best applied to achieve the objectives?
- 5. How do we ensure that equity is being achieved and no one is being left behind in this model?

The tension often plays out as people perceiving there are winners and losers (who stands to gain and who stands to lose funding or resource in any re-allocation of funding). Often the very people who are meant to be the focal point of the objective (the community and their well-being) get lost in this debate if the funding is regarded primarily as being for providers as opposed to supporting the population.

# Transparency of progress, results and impact

The current reporting provides an "engine room" view of progress. It looks at various component parts of the HCH and uses proxy measures for reach, uptake, efficiency (and, by implication, effectiveness). It measures the effectiveness by use of acute care for the populations of HCH practices. This is an effective use of existing data and measurement – however, it is highly skewed to hospital and health measures. The dashboard is useful to assess the model for phase 1 (capacity building). It is not fit for purpose in a move to a community setting.

There is also a question over what level of transparency there is at the oversight group level on the question of equity. While some measurements provide a filter by ethnicity, others do not. Statistics in aggregate can hide disparity.

Imagine you have a social contract with your community. Every 6 months, you take a one page in a local newspaper to update your community on your progress in delivering against the social contract. What would you put in that? What is your social contract in terms that are understandable – to make it accessible, relevant, and relatable for your community?

Value can be assessed as the balance across the quintuple aim (quadruple aim plus equity). It is fair that the population at large has visibility of all of these dimensions including the health of our workforce delivering care. Many communities are, or can be, self organising – it does not need primary care "at the centre" – but rather in a support role. How can the measures balance the assets available to the community (General practice, community social service and voluntary and not for profit organisations)?

The impact on the efficiency of provision of care (how lean has helped, increased modes of access to increase reach) are all apparent in the measures dashboard as it stands now. Impact on the population is not clear.

#### 5. Reflections

#### 5.1 There was a clear need to transform primary care

The model has provided a call to action and a framework to move from an exhausted and reactive workforce and model of care – that largely has not changed much in the last 50 years – to a proactive model where staff feel empowered to work to top of their grade and have the infrastructure to support them.

#### 5.2 Change and reach occurred at an ambitious pace

Coverage of over 80% of the enrolled population in the CCDHB region was reached by the third year of implementation – an ambitious target to achieve. The model can best be described as delivering better coordinated care that is more accessible, timely, flexible, and efficient. The move to proactive care, the focus on prevention and on patient-centredness has not yet been strongly embedded. There was little evidence on co-production, for example and goal-oriented care and shared care plans are very much in an early stage.

#### 5.3 But some were left behind

Taking an 'equity lens' was an inherent part of the model from the start but a systematic approach to reducing health inequities was not built into the original design of the HCH model of care. While it is widely recognised that access to primary health care is a major social determinant of health and is

considered as a strategy for addressing health inequity<sup>19</sup>, there was not a tailored approach to improving access according to different population needs. The ability to address the social determinants of health and to reduce health inequities remains constrained. This is due to the HCH model still being, in effect, a health centric medical model. To truly address equity, it is necessary to take a population health approach and address the socio-economic drivers of health. The achievement of uptake of technology such as the portal and virtual consults need further research to understand how different populations benefit from it. A project to revise the HCH model of care requirements was carried out (March 2019) to ensure a greater focus on equity for Māori and other priority populations<sup>20</sup>.

Despite the selection process for practices to embark on the HCH journey including a focus on including practices with high needs populations, the model does not successfully consider different start points in practices' infrastructure (management and back-office support). There is broader funding outside of HCH via SIA and Care plus, among others, so the ability of VLCA practices and those with a high volume of high-needs patients to develop the infrastructure to support the HCH model into the future may be a function of how the broader funding is applied. This is a more systemic issue beyond the topic of HCH but has implications for equity. A regular maturity assessment (more detailed than that provided in the current oversight group dashboard) may be a good way of ensuring that everyone is keeping pace with supporting infrastructure.

#### 5.4 The journey is just beginning

The model has had an overall positive impact on strengthening primary care, equipping General Practice to manage interventions more efficiently. It has brought teams together from different settings and started to bend the curve on acute and unplanned emergency admissions. It has introduced more flexibility of delivery through improved relationships and technology making it more resilient to cope with shocks such as Covid-19.

There is a tension between local and contextual response to local need and the centralised prescribed model of efficiency components created by the HCH model. These two are not mutually exclusive – though need more nuanced and locally owned and driven responses. The HCH model defines what is trying to be achieved, defines the tools that can be best used to achieve it and the measures by which you can gauge its effectiveness. In this sense, the controls across these three elements can be viewed as "tight", "tight". An alternative model is the "tight, "loose", "tight" model – whereby you are

- clear on the objectives
- flexible on how the model is delivered
- clear on how you will measure the results but

This model allows a far more localised and contextual response.

In effect the HCH has improved the readiness for integration beyond health and more into the community. The HCH journey so far has succeeded in establishing strong foundations for a real system-wide transformation of health and care services towards one where people and the community are at the centre and General Practice takes on more of a support role.

# 5.5 Sustainability and scalability

-

<sup>&</sup>lt;sup>19</sup> Commission on Social Determinants of Health. Closing the gap in a generation: Health equity through action on the social determinants of health. Geneva, CH: In Final report to the CSDH: World Health Organisation; 2008.

<sup>&</sup>lt;sup>20</sup> Health Care Home Collaborative Newsletter (July 2020). Enhancing the Health Care Home Model of Care – Our Journey. (Access online August 2020: https://www.healthcarehome.org.nz/download/hch-collaborative-newsletter-mocenhancement-july-2020.pdf?inline)

From our interviews and discussions, it is unclear what the funding arrangements are beyond year five. There is uncertainty around:

- Does the allocation of this funding shift to funding capacity and change in community services integration?
- Is there a component that remains to fund specific activity in General Practice?

There are elements of service design introduced by the HCH model that now appear to be embedded into operational practice and recognised as valuable. These have effectively become business as usual and could be de-coupled from the HCH model – i.e. HCH has been a catalyst and provided the tools and techniques to bake these into practice. Many of the practices interviewed reflected on the benefits of many of the components of the HCH model (stand-ups/huddles, MDTs, common room configuration). The normalisation of these into practice ensures their sustainability for delivering care under the current model. However, this serves the current trajectory of practice efficiency "providing more efficient delivery of interventions". It does not support a move to a broadening of focus to the community and a move to patient outcomes, wellness, and population health.

The intersection point between practice and community appears to currently largely rely on the MDT meetings and approach. However, these have been implemented variably and many of the community representatives interviewed reflected that their presence at the meetings, while being useful to build collegial relationships, felt more like a tag-on without being used to the degree they could be. MDTs are not sufficient to rely on to build the link with community care.

From a funding perspective, review of local need and corresponding targeted investment in projects to support the needs of the separate community health networks would help create the focal point for governance, teams, and measurements.

Another question is the back-office support available to practices with higher needs populations (including VLCA and others who are non VLCA although have a high percentage of high needs patients). As the HCH model scales up and out to include community, there needs to be a way of assessing that there is sufficient support infrastructure in place (e.g. around reporting and analysis and shared care information systems) for all those participating in the model. This has been reported as variable in the current model depending on the PHO providing the support to the general practices. The same can be said of the ability of these practices to sustain new roles within their overall funding allocation. As the model moves into the next phase of community engagement, a maturity and readiness assessment should be made to gauge the asset base (and areas of deficit) so resource can be suitably applied, and no one left behind in the model. This assessment may need to be broader than the first phase (self) assessment for practices applying to join the programme (consider the SCIROCCO<sup>21</sup> tool or similar model for this).

As the move to community integration takes place, it is worthwhile considering what support infrastructure already exists and what is core and common to the model and does not make sense to replicate –e.g. data and analysis (including risk stratification) and change teams This could become a core and common support infrastructure across the networks – to ensure consistency of approach, concentration of expertise and ensuring costs are not duplicated.

Governance needs to be flexible enough to reflect local needs and shared responsibilities. This can be addressed via a networked model of governance. Governance is currently in place via an oversight group that meets monthly. While this group do not have direct budget authority, they set strategy and direction and review results against pre-defined targets and a dashboard of measurements

<sup>&</sup>lt;sup>21</sup> https://www.scirocco-project.eu/maturity-model-in-practice-scirocco-assessment-tool/

(primarily around value added outputs and business change outputs). This group currently has representation from the DHB and PHOs including Māori representation.

The functions appear to be split into -i) strategy and ii) oversight of the delivery and adoption of the HCH model (mainly Lean processes). This group also appear to be strong advocates for the model and are a combined force for advocacy for the HCH. It is currently dominated by primary care (PHOs) and the DHB and does not currently have any community nor consumer representation formally at the table.

"The initial focus was to spread wide and fast. The governance was designed around this and helped achieve it."

The question now is how fit for purpose is this governance model as the HCH programme moves into its second phase of community networks. The maturity of Governance could be one with a move toward "stewardship of wellbeing for the population" and not care provision in specific settings.

#### 5.6 Measures that matter

"Not everything that matters can be measured. Not everything that can be measured, matters"

The current measures used to monitor HCH progress are mainly focused on existing available data – and that makes sense. These are highly correlated to hospital measurement, adoption, and throughput. These measures are a reshuffle of the original PPP and, replacement system level measures. They reinforce behaviors (what you measure is what you get).

While the management level appears to have a level of understanding and an operational rhythm using these measures – the macro level is OK. At the huddle level and the boards, people can see the patient impact. However, there is a cog missing in this wheel. Many of the practice level and front-line staff were not clear about "where we fit in the overall vision and what we are trying to achieve".

The evidence of outcomes lags (by years) before you see the dials turn. Instead, systems apply proxy measures of process (access and throughput), decreased use and demand of hospital-based services. There is a danger of layering on more measurement – measures should be a derivative of service delivery i.e. secondary use of data. This ensures the data is more reliable as it is directly linked to service delivery and it does not create an additional compliance burden. At all levels of the system, the best litmus test of a good measurement is "can we influence and see the change that matters?"

The current measurements are not suitable for the move to broadening out to the community. It would be useful to look for measures of community resilience for example. Adding another layer of community measures alongside the existing measures may have the unintended consequence of reinforcing the silos of the system.

The other aspect to measures is that of targets.

"The minute a measure becomes a target it ceases to be a good measure (people focus on achieving the target regardless of the consequences)" – Marilyn Strathern.

The earlier stage measures in year one of HCH of establishing a baseline infrastructure provided an incentive and focal point. The subsequent years focus on balancing infrastructure (uptake of the portal) and reduction in acute care also made sense for addressing an acute demand issue. Accessibility made sense. They all make sense – but at the expense of what other flexible responses for local need? As the model moves out to the community setting, we counsel against setting rigid and common targets across the board. An alternative focus is variation over time against a self-set and agreed list that is relevant to the community need and fits within the agreed broader strategy.

Not every measure needs to be a target. The important thing is:

• It is seen as a priority area of need to the local community

- Those being measured have the influence and tools to alter the trajectory of the current trend.
- There is transparency of progress.

# 5.7 Fit with broader primary care direction / system changes

The publication of the recent Health and Disability systems review (The Simpson review) provides some clear direction as to where primary care and general practice fits within the broader ecosystem of health and wellness in New Zealand. It is still too early to tell what the response from the government will be to the recommendations made in the report. However, the recommendations and their implications on primary care, General Practice, PHOs, DHBs, commissioning, and community integration are far-reaching and it is worthwhile now to reflect on the implications if the recommendations are implemented (either in whole or in part).

The material impacts of the report's recommendations on the HCH model would affect governance, funding, the scope and reach of services, the role of community and focus on equity.

"This is about a system where all New Zealanders, Māori, Pacific, European, Asian, disabled, rural or urban, understand how to access a system which is as much about keeping them well, as it is about treating them when they become sick"

The report signals a sunset on the PHO model and national contracts to a move to local commissioning of services from General Practice by (a reduced number of) DHBs.

"It also requires that the costs and benefits of service design to consumers are given much more weight relative to those of providers than has been the case in the past"

The report makes strong recommendations of the move to a focus on localities – shared accountability and control of local responses to local need across community, health and disability providers. Primary Care and the HCH, under this new model, fit within the definition of Tier 1 services, the main 4 categories of which are outlined as: General practice and PHO, Disability support, Aged care (residential) services and Aged care (home-based) services (though includes others including pharmacy, oral health and maternity among others.

"Tier 1 is critical. It is the part of the system offering the greatest opportunity to reduce the burden of disease, improve the health and wellbeing of future generations, and slow the growth in demand for hospital and specialist services."

Many of those interviewed in our evaluation believed that the HCH model is completely aligned with the strategy, particularly with next phase (community networks), as long as you did not get hung up on where PHOs fit within the model. If there is value offered by the (back office) services, they would remain – i.e. an asset based approach to providing support to the new model.

Some key take-aways from the Simpson report for the HCH model are:

- The Review proposes working towards a much more networked Tier1 environment where
  the full range of primary and community services are planned with the community, where
  services are digitally connected so information flows as required, and where more of the
  services have an outreach element making it easier for whānau to stay connected to the
  system
- Planning and funding these services must be driven by the needs of each community, not just the population numbers, so higher deprivation localities have more funding to allocate.
   Similarly, services need to be designed to work for the population they are serving, so Māori communities need to have access to a wider range of kaupapa Māori services
- The Review proposes that disability support becomes an integral part of Tier1 service planning, funding, and provision.

- Tier1 networks should be expected to identify people with disability support needs and
  ensure that services minimise adverse health consequences (e.g. increased hospitalisations)
  associated with disability
- Tier1 investment should prioritise prevention and addressing inequities by initially expanding service coverage in areas of highest need.
- The first priority should be preventive services and services that ensure children, Māori and Pacific peoples achieve optimal outcomes. Investing in a wider range of mental health services must also continue to increase

It is likely that the HCH model presents a strong baseline of general practice services on which to build toward the model outlined in the Simpson report. If anything, it actually pushes the boundaries well beyond those envisaged under community integration in the next phase of the HCH rollout as it also encompasses disability support

We have read the Community Health Networks strategy (CCDHB 2018)<sup>22</sup> and believe this is aligned with our observations and recommendations of the move toward community integration. While this paper covers the intent and some design elements of the model, it is not clear on how it will be delivered. This appears to be where the focus needs to shift - while ensuring the elements and disciplines of the current general practice operation introduced within the HCH model are also retained.

Although distant from the subject as reviewers, we will watch, with interest, how the Health and Disability Review is received and implemented. Many DHB boards will have conflicting demands on managing historical (often hospital infrastructure) debt while maintaining a separate and parallel focus on integrating primary care, community, and disability support services.

# 6. Through the looking glass

#### 6.1 Case studies

Below we describe three case studies that we hope may serve as provocation and inspiration for more ambitious integrated community care.

# Badalona (Spain)

One of the more densely populated suburban areas of Barcelona is Badalona. They describe themselves as being 30 years into a journey of discovery in integrated care.

Badalona Serveis Assistencials (BSA) is an integrated private health and social care organisation, funded entirely by public capital. It manages the Hospital Municipal de Badalona, the Homecare Integrated service, the Socio Health Centre El Carme, 7 Primary Care Centres and the Centre for Sexual and Reproductive Health. It provides care to a total population of 419,797 inhabitants in a very populated suburban area of Barcelona.

All these centres operate under the same governance structure led by a Board and a General Manager. This manager is responsible for three main areas (care, strategic support, and structure support) and supported by a Quality and IT Department and a Research and Innovation Department. There is no division by type of centre (hospital, primary care, or social care). Instead centres cover different clinical, social, and nursing areas with different types of care provision from primary care to specialist care, to social care services.

The president of the BSA Board is the mayor of the city, which fosters an alignment between local health and social policy on the one hand and health and social care services provision on the other,

<sup>&</sup>lt;sup>22</sup> Community Health Networks - Central organising point in the CCDHB Health System Plan CCDHB 2018

which also facilitates a legal framework to coordinate health and social care services. This governance setting enables the collaboration among the different providers and professionals (health and social care professionals) to ensure the continuum of care through inter-professional teams working together developing care pathways.

BSA has consolidated responsibilities and resources in a single organisation that delivers and pays for the entire continuum of care. In this regard, service funding and incentives are aligned to ensure equitable distribution of different services or levels of services. The absence of major conflicts between the distribution of resources and the alignment of incentives among primary, secondary, and tertiary care and social care has facilitated integrated care deployment. However, there are still some constraints related to professionals' perception of how incentives are distributed across the organisation, because the re-organisation of the service has increased their workload.

In summary, the main facilitators of integration at BSA are Governance and policy commitment These two drivers, in turn, have enabled the reorganisation of services and interoperable IT systems. These are followed by engaged professionals and a focus on patients' needs. Lastly, incentives and financing, and national investments and funding programmes play a minor role in comparison with the strength of the BSA integrated organisation and governance model.

The three main elements of BSA's information strategy are:

- population profiling and stratification for planning and targeting of resources;
- 2. standardised sharing of health and social service information; and,
- 3. a data analytics platform to provide rich analysis for policy and process design.

Recognising that there are limited resources for providing care, BSA has developed a stratification methodology to segment the population into groups based on complexity and need.

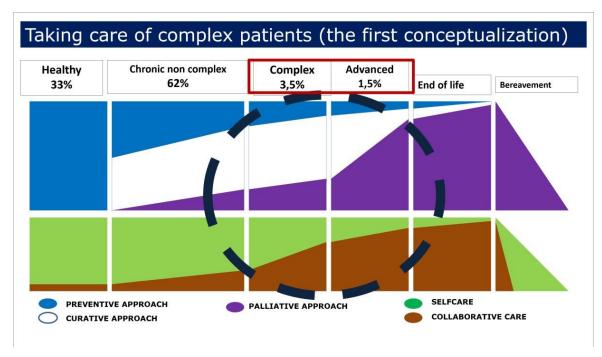


Figure 16 Badalona risk stratification tool

The population is stratified into 5 segments and care and resource designed and allocated accordingly. This reflects that not everyone has the same level of need. The end-of-life and bereavement moves from health to more of a social response. It also recognises that people with chronic disease and comorbidity can manage, to a large extent, with self-care as long as this is supported with the right

resources including community-based support networks and educational resources. The main area of resource and focus is on the 5% that make up the complex (3.5%) and Advanced (1.5%) needs population. BSA provides more targeted care including case management for this cohort.

This risk stratification and the corresponding allocation of resources is tightly coupled into the Badalona shared care system – so health and social services can provide the inputs relevant to care, including linkages to relevant community resources for preventative and self-management aspects of care and wellbeing.

#### Community Health Centre Botermarkt (Belgium)

'What makes the difference? Patients, the community and the interprofessional team truly knowing each other and working together' (Jan de Maeseneer)

CHC Botermarkt is located in a deprived urban neighborhood in Ghent and takes care of approximately 6,500 patients with a relatively large burden of chronic diseases and high ethnic diversity (95 nationalities). CHC Botermarkt's mission is to ensure accessible, high quality, and comprehensive primary care for all and to contribute to intersectional actions aimed at tackling health inequities. It achieves this by focusing on patient empowerment, social cohesion, and local participation.

Soon after its establishment in 1978, Community Health Centre (CHC) Botermarkt managed to place the social determinants of health on the agenda of local authorities. A multi-sector partnership in the community was born that included care providers, schools, police, social institutions, informal care givers, and civil society and organisations, to tackle the root causes of ill health.

Community Health Centre (CHC) Botermarkt is now one of 175 not-for-profit CHCs providing integrated primary care to 4% of the Belgian population. These centres offer primary health care for all inhabitants living in a specific geographical area who subscribe to the patient-list of the CHC. The centre is responsible for the health and wellbeing of the enrolled patients, but also engages to protect and promote the health of all citizens living in the community in which they are embedded.

With 40 years of presence in the community, CHC Botermarkt's offers an interprofessional team to listen and learn from the community and to strengthen resilience. The interdisciplinary team includes family physicians, nurses, social workers, dieticians, dentists, receptionists, health promoter and psychologists. The services offered include an interdisciplinary sub-team focused on health promotion, managed by a 'manager of health promotion'. The services offered include prevention, curative care, social care, palliative care, rehabilitation, and health promotion. The service delivery focuses on accessibility (with no financial, geographical, or cultural threshold) and quality. The centre refers patients to secondary care providers, physiotherapists, specialised mental health care, specialised social care, within the framework of an integrated care system. The Centre offers a tailored service for people with multimorbidity (including longer consultations with the practitioner most suited), starting from the patient's life goals. This is used as the basis for designing a range of subsequent services and interventions by the broader care team that will meet patients' specific needs.

The Community Oriented Primary Care Strategy within the centre aims to adapt services to needs in the community, identified via a stepwise process:

- 1) Identification of care needs and underlying social determinants in individual care providerpatient contacts (e.g. through information in the electronic patient records)
- 2) Interdisciplinary patient meetings in the centre to identify relevant topics for a larger part of the population
- 3) Prioritization and validation in the population using data and experiences of relevant stakeholders at regional and city level. The centre actively participates in 'community

diagnosis' meetings with local actors (local schools, welfare organisations, etc.) These meetings – initiated and organised by the local government- help to give a voice to the community residents' needs and aspirations.

Performance of CHCs in Belgium was compared to the usual (fee-for-service) care system in 2008 and 2018. The major findings included that CHC are more accessible, especially for vulnerable people than practices in the usual system; they do not cost more, and provide at least as good care as in the usual system, with better results in prevention, antibiotic prescription, use of technical investigations and referral to secondary care

#### NUKA System (Alaska, USA)

Southcentral Foundation (SCF) is an Alaska Native customer owned health care system responsible for providing health care and related services to approximately 65,000 Alaska Native and American Indian people in Alaska's Cook Inlet region. Prior to 1998, health care for Alaska Native people was provided by the United States Indian Health Services department; however in 1998, Alaska Native people chose to take full responsibility for their own health care, with SCF taking responsibility for primary care and related services. When Alaska Native people chose to assume responsibility for their own health care, they chose not to continue the practices of the past. Although the government personnel who had been running the system previously were well-intentioned, the care provided was ineffective, did not address whole-person wellness, and was not culturally appropriate for the people being served. Alaska Native leaders and community members saw the need for change.

Today, SCF has grown from fewer than 100 to over 2,200 employees, with an operating budget of over \$300 million U.S. SCF operates the Nuka System of Care, which is a customer driven, relationship-based health care system. In the Nuka System, the Alaska Native and American Indian people SCF serves are not patients, but "customer-owners," working in relationship with providers to achieve overall wellness. Nuka has distinguished itself as one of the world's leading health care systems.

Upon taking responsibility for primary care, SCF spent a year collecting feedback from the Native community and transformed the health care system based on what they wanted. This resulted in the implementation of a new model of care which primarily aimed to foster genuine relationships between patients and providers and address the underlying determinants of health. The model, named the Nuka System of Care, includes key components of the Patient Centred Medical Homes Model, but goes beyond it as it specifically addresses the cultural needs of the indigenous people it sets to serve. As customer-owners, the indigenous people are responsible for the design, implementation, and delivery of their own healthcare, reinstating their sense of self-efficacy and self-determination.

SCF offer a wide range of services in both outpatient and home settings. These services include GP care, dentistry, outpatient behavioural health, residential behaviour health, traditional healing, complementary medicine, and health education. Modes of access to such services are diverse and include ambulatory office visits, homes visits, email and telephone consultations, health information and education via classes and mixed media, inpatient hospital services, day and residential treatment, as well as referrals to higher level care. Remote villages are also provided with care under the Nuka System, with clinical teams travelling by boat or air to deliver family medicine, behavioural health and dental services to areas which cannot be accessed by road. SCF also offer around 80 different health education programmes which include learning circles, support groups, educational workshops, cooking classes and more. One programme of note is the Family Wellness Warriors Initiative, which seeks to address the issues of family violence, abuse and neglect in within the Native Alaskan community.

SCF hosts the Annual Gathering, a free event that community members can attend to learn more about services available at SCF and enjoy live entertainment, with activities for children and Alaska

Native art available for purchase. SCF also maintains close relationships with organizations in the community such as the Alaska Federation of Natives and the Alaska Native Health Board.

SCF is about relationship-based care and it is strongly driven by principles and values.

#### **Operational Principles**

R	Relationships between the customer-owner, the family, and provider must be fostered and supported
E	Emphasis on wellness of the whole person, family, and community including physical, mental, emotional, and spiritual wellness
L	Locations that are convenient for the customer-owner and create minimal stops for the customer-owner
Α	Access is optimized and waiting times are limited
Т	Together with the customer-owner as an active partner
I	Intentional whole system design to maximize coordination and minimize duplication
0	Outcome and process measures to continuously evaluate and improve
N	Not complicated but simple and easy to use
S	Services are financially sustainable and viable
Н	Hub of the system is the family
I	Interests of the customer-owner drive the system to determine what we do and how we do it
Р	Population-based systems and services
S	Services and systems build on the strengths of Alaska Native cultures

In terms of its governance arrangements, SCF operates under the tribal authority of Cook Inlet Region, Inc., which appoints SCF's seven-member Board of Directors. The Board makes policy for SCF and exercises overall control and management of the organization's affairs. All members of SCF's Board of Directors are customer-owners, as is the President/CEO and over 60 percent of management/leadership.

There are some major differences in the delivery and funding of primary healthcare within the two host countries of the respective models, which is important to consider when comparing them. Southcentral Foundation own all buildings and entities relating to the Nuka System of Care, whereas the HCH model is implemented to an array of practices, owned both privately and publicly, under a Collaborative agreement between regional PHO's and district health boards. The Nuka model is specific to a geographical context, whereas the HCH model is implemented to all patient populations, across New Zealand.

#### 7. Recommendations

Our recommendations are two-fold:

- 1. Where to next? this is about the model itself and possible re-calibration opportunities. Are we still on the right course, are we doing the right things?
- 2. **Continue strengthening primary care** specific elements of the model that we believe could be improved (are we doing the things right?)

#### 7.1 Where to next?

- 1) More ambitious integration with community
  - Review the objectives of the HCH model to shift the focus onto proactive care, prevention, population health and social determinants of health, through integration with community and a focus on building community resilience.
  - Take an asset and needs based approach reviewing what the community assets are in different localities and what the local populations needs through meaningful local involvement with a particular focus on the most vulnerable.
  - **Identify targeted community projects** relevant to population and need (the social contract). Voluntary and community organisations are a relatively untapped resource in helping to develop and support community resilience and they should be considered long term partners.
  - Establish a networked governance model whereby there is an oversight group but also locality-based governance with autonomy and flexibility to create local responses for local conditions, including the building of practice-based customer groups. Community and health and care should have equal representation and voice in recognition that it is an equal partnership with a common goal to improve wellbeing.

#### 2) Co-design with customers

- Move beyond 'delivery' to genuine 'co-creation' with the individuals and communities that are traditionally seen as recipients. This means actively involving customers in all stages from design to delivery.
- Consider new roles such experienced patients (with deep experiential knowledge of health
  conditions and healthcare navigation) and citizen partners (with intimate knowledge of their
  own community) to bridge health and community care, in partnership with local health
  professionals and community organisations.

# 3) Stronger focus on equity

- Systematically monitor progress against reducing inequities ensure all reporting reflects both overall results and also split by ethnicity and deprivation for each reporting element so the oversight group has a clear view of variation.
- Use data to inform targeted responses where the data show inequity in the results for Māori,
   Pacific and high needs populations for HCH practices, create a needs-based response by way of initiatives and investment to address the inequity.

# 4) Review funding and support mechanisms to reflect new objectives

- **Review the overall funding model** beyond year 5 and ensure that it is needs-based and that it is flexible enough to reflect locality context and priorities to support population-health approach.
- Apply the (best and most relevant) elements of the HCH model infrastructure from the General Practice level into supporting back office functions for a broader community focus and response to population health and wellbeing (e.g. population needs analysis, reporting, facilitating teambased infrastructure, and shared care planning tools)

- 5) Change the current top-down approach to how health system performance is measured and addressed
- Review the measurements (and incentives model) to recalibrate to a broader community focus consider what are the measures that matter to the community. Do not lose sight of the reduction in acute care but add the wellbeing and community elements. Consider how quality improvement and local social contracts might replace targets and thresholds.
- **Evaluation** (for the next phase) should be designed into the planning up-front rather than retrospectively. Consider using a developmental evaluation framework

# 7.2 Continue strengthening primary care

The primary care elements that need strengthening are mainly around the proactive care elements, more specifically:

# 6) Review how the MDTs can also be used to plan more proactive care

Considering the process for identifying patients that would most benefit from MDT discussion to broaden the focus to those with more complex needs (including non-medical needs). Also consider changing the frequency to more regular meetings and a way of keeping momentum with the cases between meetings.

# 7) Review the implementation of Year of Care Plan as part of Long-Term Care

Particularly what follows the initial entry into the pathway for patients

### 8) Review the use of the risk stratification tool

This is currently primarily focused on identifying the population at risk of acute admission. This element needs retained while broadening to population need.

#### 9) Include Mental Health and Aged Residential Care in future plans

We believe these are two vulnerable populations that the model has not yet addressed. These should be one of the focal points of planning by the central governance of the HCH model for the next phase.

# 10) Continue work towards electronic infrastructure to support integrated health and community integration

Develop electronic shared care plans to a level these are able to be used to support seamless care between health and social services for the next phase of the HCH.

# Annex 1 Profile of professional groups interviewed

Table 3 Profile of professional groups interviewed

Older Adult, Rehabilitation and Allied Health Services (ORA)  District Nurse  District Nurse  District nurses work with specialist nurses, allied health professionals and health care assistants, providing care to people in the community. The service is available to people in their own home or at a clinic facility and care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  The Hospice Provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination  The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAl assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Cinical Pharmacist  Ti Ora Compass Health executive  Tu Ora Compass Health executive  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change management team  The team were tasked with supporting the implementation of the HCH model across all practices	Oldon Adult	ODA semiles and idea community and systematical complete and all of
Allied Health Services (ORA)  community teams provide community therapy and rehabilitation. The teams include members of the MDT such as Physiotherapists, Occupational Therapists Dietitians, SLT and Social Workers, as well as Liaison Nurses.  District Nurse  District nurses work with specialist nurses, allied health professionals and health care assistants, providing care to people in the community. The service is available to people in their own home or at a clinic facility and care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  Hospice  The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination  The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAl assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tü Ora Compass  Health executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and dealth Services (HHS) provides secondary services via the hospital and dommunity outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.	•	· · · · · · · · · · · · · · · · · · ·
teams include members of the MDT such as Physiotherapists, Occupational Therapists Dietitians, SLT and Social Workers, as well as Liaison Nurses.  District Nurse  District nurses work with specialist nurses, allied health professionals and health care assistants, providing care to people in the community. The service is available to people in their own home or at a clinic facility and care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  Hospice  The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination  The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAl assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tü Ora Compass Health executive  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and Health Services (HHS) provides secondary services via the hospital and dependence team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.		
Occupational Therapists Dietitians, SLT and Social Workers, as well as Liaison Nurses.  District Nurse  District nurses work with specialist nurses, allied health professionals and health care assistants, providing care to people in the community. The service is available to people in their own home or at a clinic facility and care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  Hospice  The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination  The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union – providing pharmacy service into GP practices – new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tü Ora Compass  Health executive  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.		, , , , , , , , , , , , , , , , , , , ,
District Nurse  District nurses work with specialist nurses, allied health professionals and health care assistants, providing care to people in the community. The service is available to people in their own home or at a clinic facility and care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  Hospice  The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination  The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union – providing pharmacy service into GP practices – new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass  Health executive  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.	Services (ORA)	
District Nurse  District nurses work with specialist nurses, allied health professionals and health care assistants, providing care to people in the community. The service is available to people in their own home or at a clinic facility and care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  Hospice  The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination  The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union – providing pharmacy service into GP practices – new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass  Health executive  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.		
health care assistants, providing care to people in the community. The service is available to people in their own home or at a clinic facility and care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  Hospice The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Lealth Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.		Liaison Nurses.
service is available to people in their own home or at a clinic facility and care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  Hospice The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union – providing pharmacy service into GP practices – new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tü Ora Compass  Health executive Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The team were tasked with supporting the implementation of the HCH	District Nurse	District nurses work with specialist nurses, allied health professionals and
care is provided based on an assessment of need. The staff have a range of professional, clinical, and cultural skills and knowledge.  Hospice The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The Hospital and with supporting the implementation of the HCH		health care assistants, providing care to people in the community. The
of professional, clinical, and cultural skills and knowledge.  The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  The Care Co-ordination The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union – providing pharmacy service into GP practices – new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The Hospital Park the special part of the HCH were tasked with supporting the implementation of the HCH		service is available to people in their own home or at a clinic facility and
Hospice The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union – providing pharmacy service into GP practices – new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The Hospital and were tasked with supporting the implementation of the HCH		care is provided based on an assessment of need. The staff have a range
Hospice The Hospice provides 24/7 specialist palliative care, including nursing support to patients under the care of the hospice  Care Co-ordination The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union – providing pharmacy service into GP practices – new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The Hospital and were tasked with supporting the implementation of the HCH		of professional, clinical, and cultural skills and knowledge.
Support to patients under the care of the hospice  Care Co-ordination  The Care Coordination Centre provides Needs Assessment/Service Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass Health executive  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  The team were tasked with supporting the implementation of the HCH	Hospice	The Hospice provides 24/7 specialist palliative care, including nursing
Coordination (NASC) services in CCDHB for people aged 65 and over. community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  The team were tasked with supporting the implementation of the HCH		support to patients under the care of the hospice
community support to maintain health and independence. Care coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The maintain provides and coordinate access to community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.	Care Co-ordination	The Care Coordination Centre provides Needs Assessment/Service
coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  Tinitial Care and Home and Community Outron — provides and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.		Coordination (NASC) services in CCDHB for people aged 65 and over.
coordination undertake interRAI assessments and coordinate access to community based health services including Aged Residential Care and Home and Community Support Services.  Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  Tinitial Care and Home and Experimental Care and Home and Porirua Union — provides and House and Porirua Union — provides and House and Ho		community support to maintain health and independence. Care
Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The team were tasked with supporting the implementation of the HCH		1 ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '
Clinical Pharmacist Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Ora Toa Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The team were tasked with supporting the implementation of the HCH		community based health services including Aged Residential Care and
Clinical Pharmacist  Newlands Medical Centre, Waikanae, Newtown and Porirua Union — providing pharmacy service into GP practices — new role  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass  Health executive  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Compass Health supports a network of primary healthcare providers through all currently although all current		,
Dra Toa  Three of the first practices to embark on HCH journey, although all currently on hold (since July 2019). Two interviews  Tū Ora Compass Health executive  through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  The team were tasked with supporting the implementation of the HCH	Clinical Pharmacist	· · · ·
currently on hold (since July 2019). Two interviews  Tū Ora Compass Health executive  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  The team were tasked with supporting the implementation of the HCH		
currently on hold (since July 2019). Two interviews  Tū Ora Compass Health executive  Compass Health supports a network of primary healthcare providers through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  The team were tasked with supporting the implementation of the HCH	Ora Toa	Three of the first practices to embark on HCH journey, although all
Health executive through funding agreements and management support services. It covers an enrolled population of some 400,000+  CCDHB executive CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change Through funding agreements and management support services. It covers an enrolled population of some 400,000+		· · · · · · · · · · · · · · · · · · ·
an enrolled population of some 400,000+  CCDHB executive  CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  The team were tasked with supporting the implementation of the HCH	Tū Ora Compass	Compass Health supports a network of primary healthcare providers
CCDHB has two roles a) Hospital and Health Services (HHS) provides secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  The team were tasked with supporting the implementation of the HCH	Health executive	through funding agreements and management support services. It covers
secondary services via the hospital and community outreach programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change  The team were tasked with supporting the implementation of the HCH		an enrolled population of some 400,000+
programmes and b) the Strategy, Innovation and Performance team's role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The team were tasked with supporting the implementation of the HCH	CCDHB executive	CCDHB has two roles a) Hospital and Health Services (HHS) provides
role is to assess the health needs of the people of the district and contract the most appropriate services to meet those needs.  PHO HCH Change The team were tasked with supporting the implementation of the HCH		secondary services via the hospital and community outreach
contract the most appropriate services to meet those needs.  PHO HCH Change The team were tasked with supporting the implementation of the HCH		programmes and b) the Strategy, Innovation and Performance team's
PHO HCH Change The team were tasked with supporting the implementation of the HCH		role is to assess the health needs of the people of the district and
		contract the most appropriate services to meet those needs.
management team   model across all practices	PHO HCH Change	The team were tasked with supporting the implementation of the HCH
	management team	model across all practices

### **Annex 2 Parked questions**

The following is a list of questions we would have liked to address had the scope and/or timeframes allowed:

- Have there been improvements in self-management of conditions? We obtained the
  Partners in Health Scale questionnaire results but had difficulties interpreting these. With
  more time, it would be interesting to see if there have been any improvements in selfmanagement, comparing HCH with non HCH.
- Time to next available appointment this data is available and presented regularly at oversight group meetings and had we had more time, we would have liked to include this to better understand how the HCH model has impacted on access.
- GP triage how many of the calls are about repeat prescriptions? Is there an issue if there are too many repeats without a medicine review? (2 part assumption/layered question)
- How well equipped is the patient portal for shared care planning or what infrastructure is in place for shared care plans between health and community settings for the next phase?
- What is the take up of the portal by ethnicity? is there some way of testing any hypothesis of lower take up and use rates by ethnicity?
- Is the basis for a year on year reduction of acute care (ED, ASH and Acute admissions) by 4.2% still a relevant target? Should this number increase/decrease or be replaced by another measure? How does this number benchmark with other initiatives and trends in other regions in New Zealand? (Canterbury, Counties Manukau, others...)?
- After hours admissions to ED data was received but not included because they were total volumes and not rates per 1000 population. It would be good to follow up in future.
- What has been the change in workforce makeup? HCAs, pharmacists, health coach (number and roles) and what has the impact been on productivity as well as quality of care
- It would be interesting to analyse the measures presented here, e.g. impact on acute admissions for an HCH practice like Johnsonville that recently merged with a non HCH practice

# Annex 3 Maturity Matrix from a sample Oversight Group report

