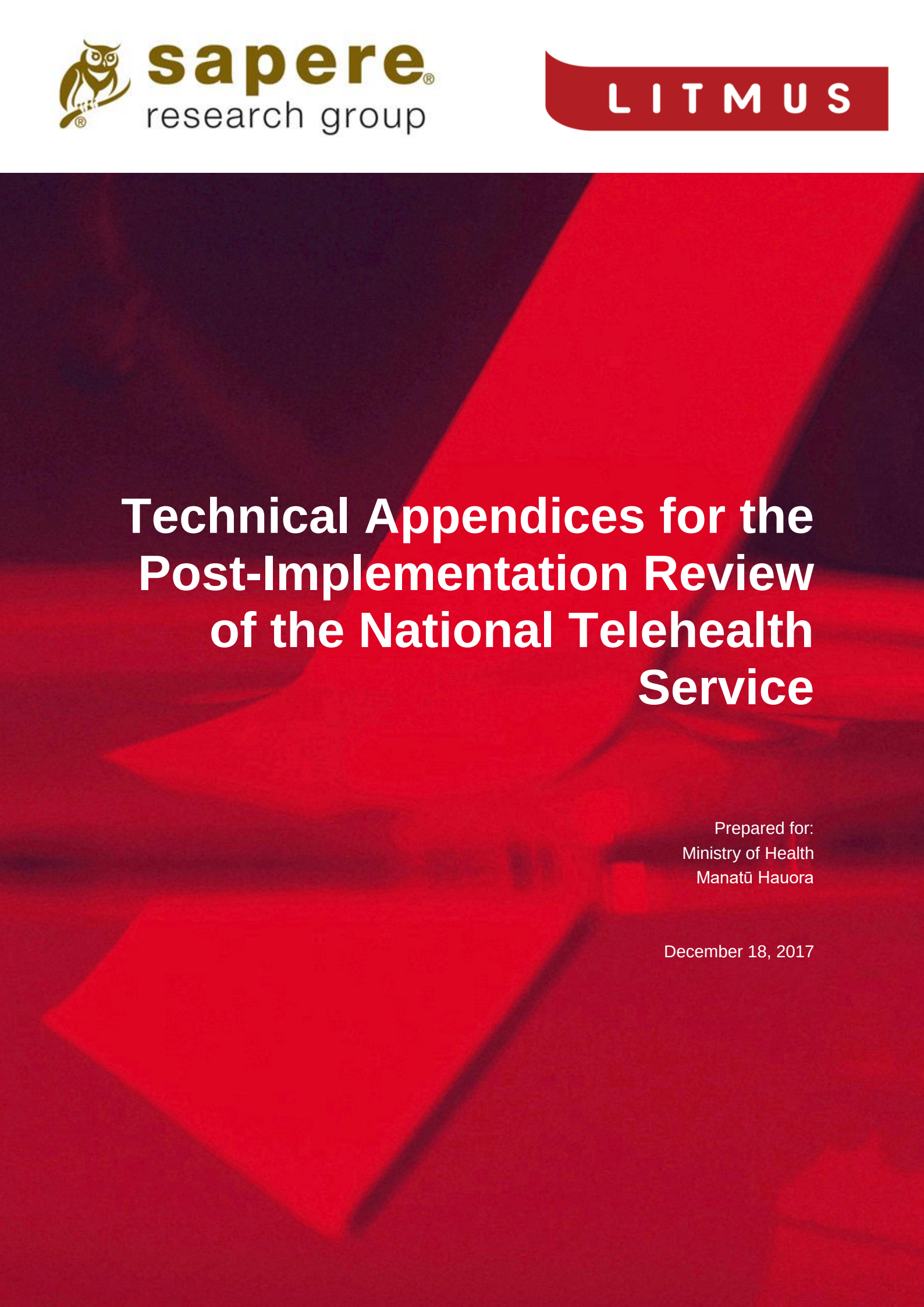

Technical Appendices for the Post-Implementation Review of the National Telehealth Service

Prepared for:
Ministry of Health
Manatū Hauora

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Contents

1. Report purpose 3

2. NTS operation in the first 12 months 4

2.1 NTS whole-of-service 6

2.2 Healthline 8

2.3 Mental health and addiction services 15

2.4 Smoking cessation services (Quitline) 18

2.5 Emergency services 23

3. Variation of demographic data collected 25

4. Alignment to service specifications 28

References 35

1. Report purpose

This report contains the technical appendices to the post-implementation review report of the National Telehealth Service (NTS) (Litmus 2017c). It contains evidence supporting the findings in the post-implementation review report. The technical appendices report contains:

- The baseline data analysis across the NTS services
- Variation in demographic data collected
- Analysis of NTS alignment to service specifications.

2. NTS operation in the first 12 months

This section presents an overview of the first 12 months of the National Telehealth Service (NTS) operation from 1 November 2015 to 31 October 2016. We provide feedback on: 1) the whole-of-service NTS; and 2) specific NTS services. We reviewed NTS based on four service groupings used by Homecare Medical (table 1):

Table 1: Overview of NTS's four service groupings

Service groupings	Description
Healthline	Includes calls to Healthline, general public immunisation calls to 0800 IMMUNE and Plunketline calls
Mental health and addiction services	Includes alcohol and other drug counselling support, mental health, depression and anxiety counselling support, and gambling counselling and support
Quitline	Includes the smoking cessation services. In the first year, Quitline was included with mental health and addiction services
Emergency services	Includes ambulance secondary triage located in St John and Wellington Free Ambulance, and poisons advice sub-contracted to the University of Otago

In this baseline analysis, key definitions are from Homecare Medical's annual report (Homecare Medical, 2017) and include:

- **Individual service user**: A person who used an NTS service in a given time period, and may have used the service more than once in that time period.
- **Contact:** An occasion when a service user made contact with one of the NTS services via any channel. One service user may have multiple contacts.
- **Interaction**: An inbound or outbound message or communication that forms part of an email, chat or text conversation. An email conversation may include more than 10 email interactions, and a text conversation may contain more than 20 interactions.

For the purpose of completion, we plotted trend graphs from November 2015 to April 2017 (18 month period). We marked the 12-month timeframe on trend graphs.

Some limitations with the baseline analysis due to data quality

We completed much of the planned baseline analysis. However, data challenges limited our analysis. Homecare Medical acted in a transparent manner by giving access to their data cube which contains NTS data. This access together with support from their staff helped us understand the NTS data system.

NTS's data collection and synthesis is complex

The implementation of NTS has resulted in the creation new information and reporting across the range of services and channels. NTS data collection is complex due to differing processes for managing contacts. Examples include:

- Different teams manage incoming calls
- Calls have different approaches dependent on service (e.g. Healthline calls are triaged through Odyssey, while counsellors answering calls on mental health and addiction do not use a formal triage tool)
- Different types of contacts generate different data (e.g. inbound and outbound calls, web chat)
- Different organisations deliver NTS service (e.g. calls about poisons are sub-contracted the University of Otago).
- The Customer Interactive Centre (CIC) database records contact data (phone, text, email etc.) The Customer Relationship Management took (CRM) records user information and clinical notes. CRM data and some CIC data are in the data cube. Most contact-related reporting (such as call length and time to answer) is done directly from CIC. Not all data can currently be reported at a granular level on outbound calls.

NTS's data quality is moderate and requires ongoing enhancement

We summarise below data limitations identified through the baseline analysis.

Data accessibility and availability

- Data structure and naming conventions in the data cube makes it difficult to access and interpret the data especially for third parties (e.g. the label 'calls' refers to all contact types including text).
- Data relating to one measure is stored in different datasets (e.g. interactions data required counting data held in the data cube and another data set).
- Not all activity is recorded (e.g. the number of automated texts sent through Quitline).
- Remote access to the data cube is at times unreliable (e.g. one day we had to reconnect about 10 times).

Quality

A significant amount of demographic data is missing. This limits insights into users and non-users of NTS (refer section 2). The missing data also limits our ability to identify other health services used by NTS users. The reasons for not recording demographic information are:

- Some users are unwilling to provide their details. People contacting mental health and addiction services can be particularly reluctant to give their personal details.
- Those contacting NTS with a quick question are also less likely to provide (or be asked) for their personal details.

- Difficulties in collecting personal details during web chat, email or text interactions.

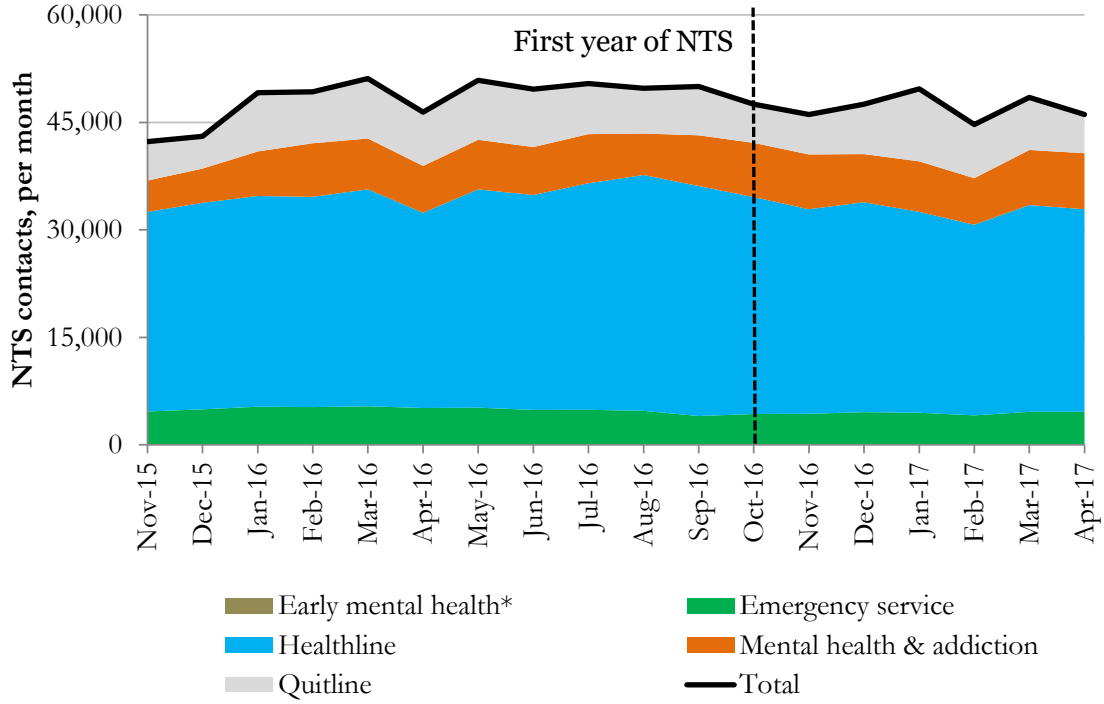
Homecare Medical is working to improve data collection and is training staff on the reasons and processes to ask users for demographic details.

2.1 NTS whole-of-service

Number of users and contact

Some users contact NTS multiple times, resulting in an average of 48,000 contacts each month (figure 1). The majority of NTS contacts were via Healthline (averaging 70 percent of all contacts). Mental health and addiction services, Quitline and emergency services have similar proportions of contacts with between 11 and 17 percent of contacts.

Figure 1: NTS contacts by service type (November 2015 – April 2017)



Source: Numbers from Homecare Medical's NTS annual reports; graph by Sapere

Profile of users

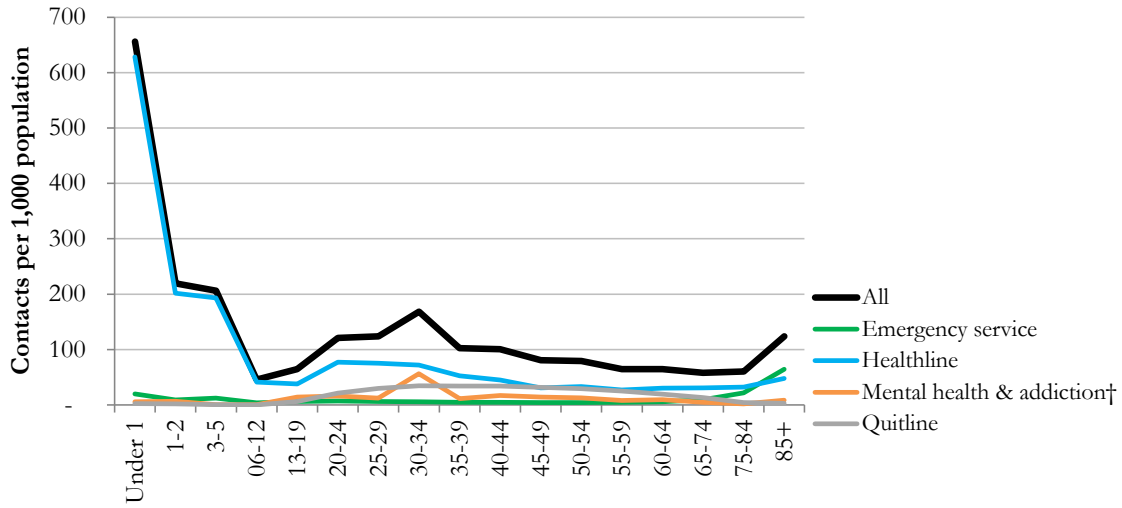
The variation of use by age differs by service type. Parents and caregivers calling about children under five were the highest users of NTS with over 600 contacts per 1,000 population. Other peaks in usage were in the 30–34 and 85+ age brackets (figure 2).

The variation of use by age, differed by service type with high rates in the following age groups:

- Healthline: parents and caregivers of children under one
- Mental health and addiction: 30–34
- Quitline: middle age
- Emergency services: 85 plus.

Figure 2 shows the age profile of NTS users. The contact rates for parents/caregivers of children aged under one was off the chart, with over 600 contacts per 1,000. The age profile for all of NTS roughly followed the age profile of Healthline users, as Healthline made up the majority of contacts. The two main exceptions were the high use of the mental health and addiction services for 30-34 year olds, and the high use of emergency service in the 85+ age group.

Figure 2: Age profile of NTS users, contact per 1,000 population in the first year of NTS



Source: Numbers from Homecare Medical's NTS annual reports; graph by Sapere

Number of interactions

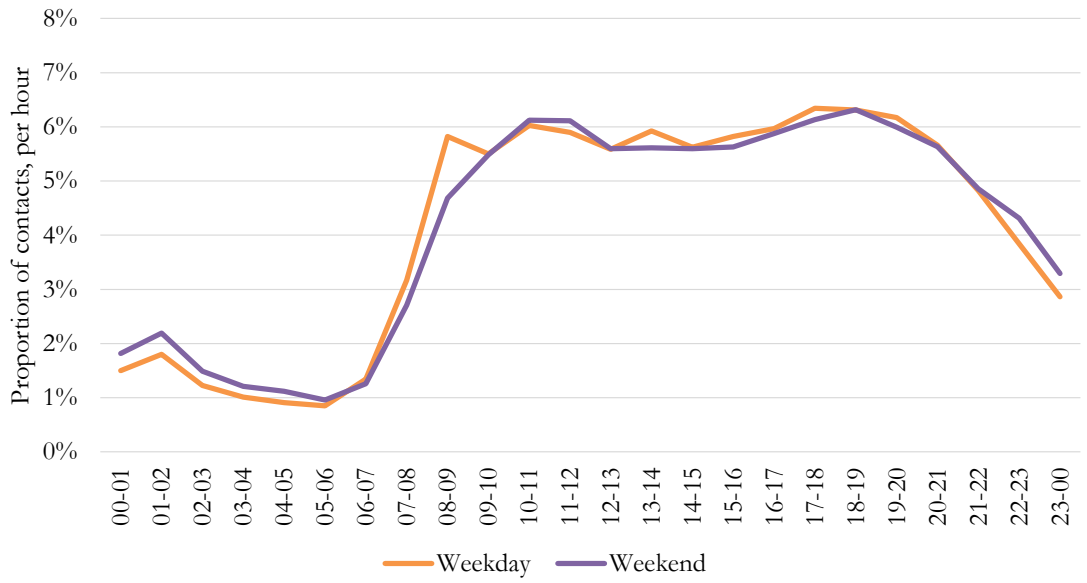
Interactions convey additional information not captured when measuring users or contacts volume. We included interactions in the baseline to detect and measure differences in the rates of interactions per contact across time. We appreciate calls are usually counted as one interaction, while a text conversation may account for many interactions. We will continue to discuss with the Ministry of Health (the Ministry) how best to capture information on interactions.

In the first 12 months, NTS had nearly one million interactions (951,000) including phone call, e-mail, chat or text conversation. The average number of interactions was approximately 79,000 a month. Healthline represented nearly half of these interactions, and mental health and addiction services and Quitline a quarter each.

Timing of contacts

On average, NTS had 1,600 contacts each day. Contacts were steady from 8am to 8pm and the rate decreases in the evening. Contact patterns varied across the different services (figure 3).

Figure 3: NTS contacts by hour of the day, first year of NTS (November 2015-October 2016)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Efficiency of call answering

Between July 2016 and June 2017, call answer times were: 81% answered within 20 seconds, 89 percent in 60 seconds and 96 percent within three minutes (Homecare Medical, 2017b). Call answering varied across services with mental health and addiction and poisons advice calls performing best (at 93 percent and 92 percent answered by 60 seconds).

In the year to October 2016, call abandonment varied across the NTS services. Call abandonment was lowest amongst Healthline and Quitline at 6 and 8 percent respectively and highest for gambling helpline at 36 percent. Feedback from stakeholder interviews indicates people contacting the gambling helpline can be more likely to hang up before the call is answered. Call abandonment was around 14 percent for other mental health and addiction calls (Homecare Medical, 2016).

2.2 Healthline

Number of users

In the first 12 months of operation, 294,000 people called Healthline, over two-thirds of NTS user contacts. Around 6 percent of New Zealanders called Healthline at least once.

Healthline use remained fairly stable throughout the first year, with contacts peaking in the winter months.

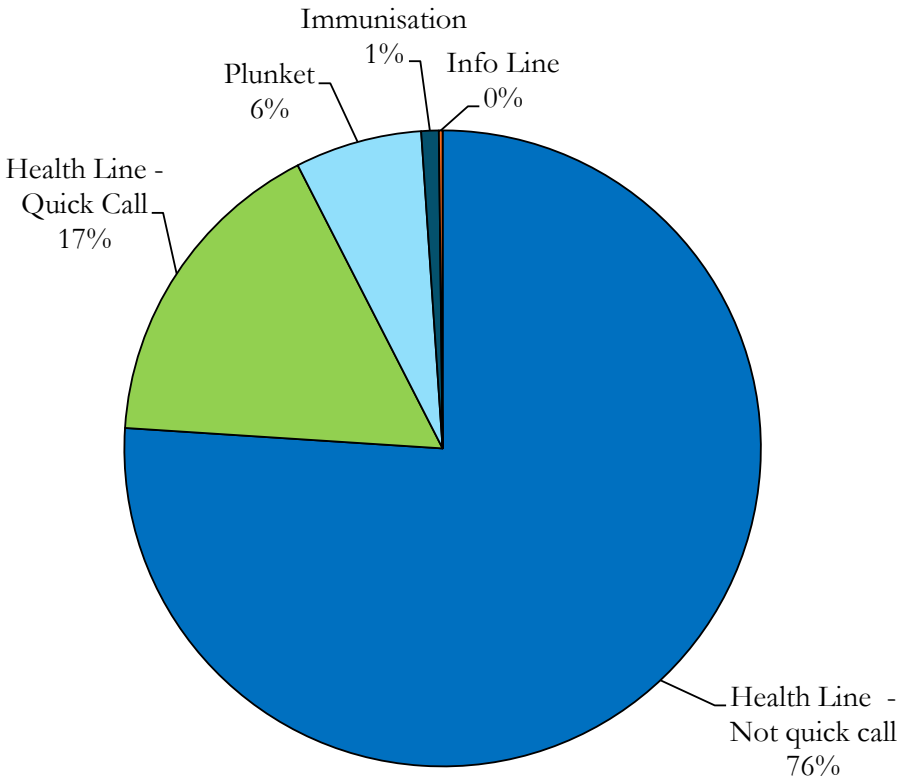
Number of contacts

In the first 12 months of operation, there were 360,000 contacts to Healthline.

Calls directly to Healthline made up the bulk of the contacts to this service (93 percent). Of these, quick calls to Healthline make up 17 percent.[1] Calls to Plunketline made up six percent of contacts, and immunisation advice was around one percent of contacts (figure 4).

Infoline refers to the services provided to respond to one-off events. For example, a free phone number used to offer advice to those impacted by the campylobacter outbreak in the Havelock North water supply. The average use of Infoline over the year was very low.

Figure 4: Line used to contact Healthline service, first year of NTS (November 2015-October 2016)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

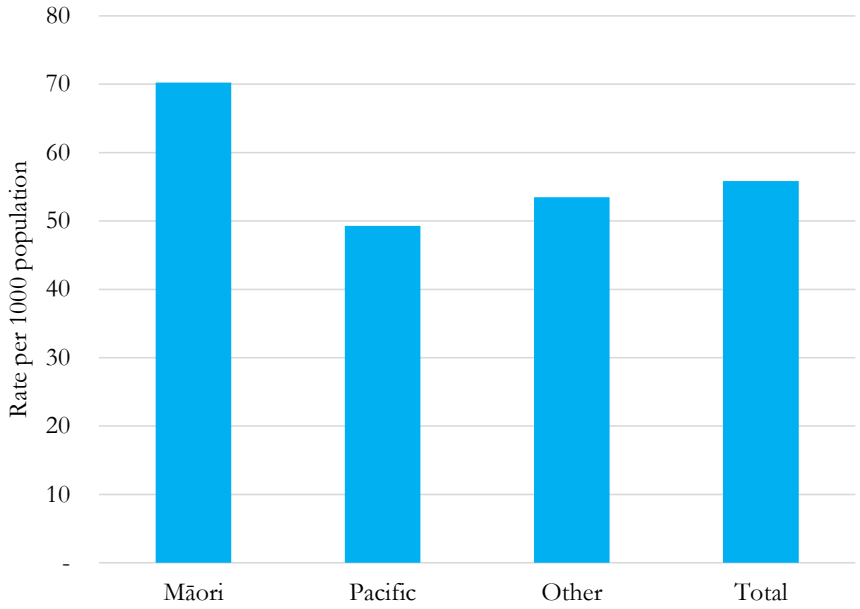
[1] Homecare Medical do not have a clear definition of 'quick calls'. However, quick calls are not triaged. Quick calls may be from someone seeking general health information or practice/service information, or someone seeking to be referred/directed to another service including emergency services. Quick calls also include hang up or wrong number calls, calls from people unwilling to be triaged, and follow-up information on self-care advice.

Usage of Healthline was highest between 8am and 9pm, and tapered off during the night. Usage peaked around 10-11am and 6-7pm.

Variation analysis

We undertook variation analysis to identify high and low users of Healthline across New Zealand. The variation analysis found Māori were most likely to use Healthline relative to their population. Pacific people were least likely to use Healthline compared to non-Māori, non-Pacific people (figure 5).

Figure 5: Healthline service user rates by ethnicity, first year of NTS (November 2015-October 2016)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere
Ethnicity is not recorded or stated by 33% of Healthline service users
Rates are not standardised for age

Healthline use also varied across District Health Boards (DHBs). Use of Healthline was highest in Wairarapa DHB, followed by Hutt Valley, and Capital & Coast DHBs. Homecare Medical reports general practices in these DHBs switch their phones after hours to Healthline or encourage patients to call Healthline after hours. These calls were not captured separately from other Healthline calls. Rates were lowest in the Auckland DHBs, Hawke's Bay and West Coast DHBs.

Reasons for calling Healthline

Healthline – presenting symptoms

The majority of people who called Healthline had a specific symptom or complaint. Table 2 ranks the top 20 symptoms over the first year, accounting for 46 percent of triaged calls (excluding immunisation and Plunket). The top complaints represented a slightly higher

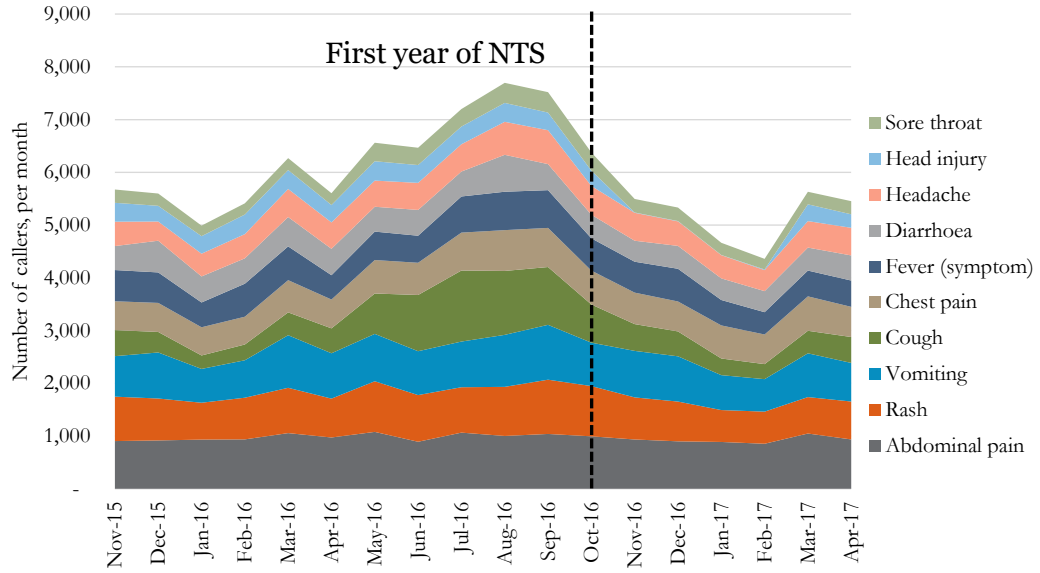
proportion between July and September (around half) with a spike in calls related to coughs during winter (figure 6). Abdominal pain, vomiting, and rash remained the most common symptoms from month to month.

Table 2: Top 20 symptoms for Healthline callers (excluding immunisation and Plunketline), first year of NTS (November 2015-October 2016)

Presenting symptom	Total	% of triaged calls
Abdominal pain	11,782	6%
Rash	10,341	5%
Vomiting	10,294	5%
Cough	8,553	4%
Chest pain	7,442	3%
Fever (symptom)	7,160	3%
Diarrhoea	6,163	3%
Headache	6,089	3%
Head injury	4,072	2%
Sore throat	3,471	2%
Cold/Flu	3,111	1%
Vaginal bleeding	2,970	1%
Diarrhoea and vomiting	2,741	1%
Immunisations	2,655	1%
Back pain	2,530	1%
Constipation	2,158	1%
Breathing difficulty	2,070	1%
Information	2,059	1%
Medication query	2,041	1%
Dizziness	1,931	1%

Looking at the pattern over time, cough was the most variable. Cough as a presenting symptom was twice as common in winter. Surprisingly, there was almost no use of the code 'head injury' between November 2016 and February 2017. It is unclear if there were fewer users with head injury, or other codes were used over this time period. There are 10 different symptoms that include 'head' in their description. We will explore the reasons for this difference in the next evaluation phase.

Figure 6: Number of Healthline calls for the top 10 symptoms (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Plunketline – presenting symptoms

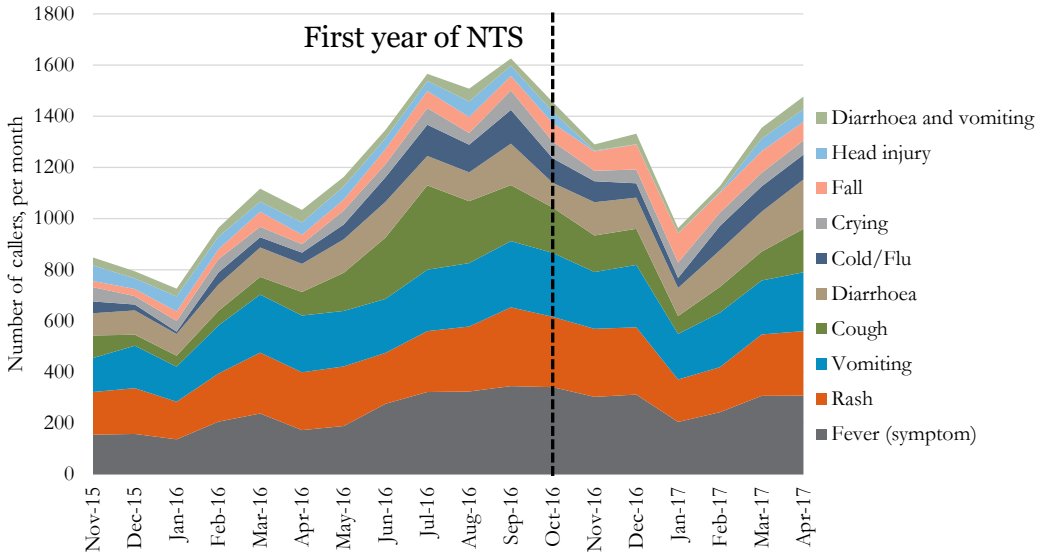
Table 3 ranks the top 20 symptoms for Plunketline calls. The top 20 symptoms accounted for 77 percent of contacts over the period. Fever, rash, and vomiting were the most common symptoms month on month. Cough and cold/flu peaked during the winter period (figure 7).

Table 3: Top 20 symptoms for Plunketline callers, first year of NTS (November 2015-October 2016)

Presenting symptom	Total	% of triaged calls
Fever (symptom)	2864	13%
Rash	2652	12%
Vomiting	2498	12%
Cough	1749	8%
Diarrhoea	1353	6%
Cold/Flu	821	4%
Crying	615	3%
Fall	583	3%
Head injury	576	3%
Diarrhoea and vomiting	438	2%
Immunisations	424	2%
Unwell	336	2%
Skin rash	330	2%
Bowel motions - blood in motion	216	1%
Breathing difficulty	214	1%
Vomiting feed	214	1%
High temperature (symptom)	208	1%
Breathing problem	195	1%
Dehydration (symptom)	157	1%
Constipation	146	1%

Source: Numbers sourced from Homecare Medical's 'data cube'

Figure 7: Number of Plunketline calls for the top 10 symptoms (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

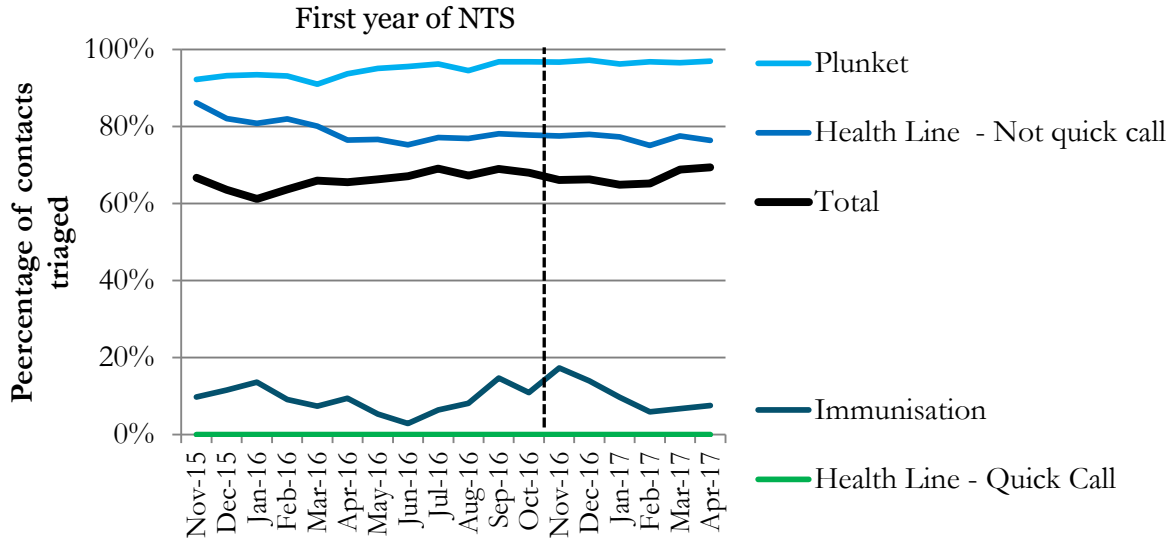
User outcomes

In the first 12 months, 64 percent of calls to Healthline received a clinical triage using Odyssey. Non-triaged calls included general health advice, hang-ups and wrong numbers, advice about available health services, and a small number of serious calls transferred or directed to emergency services immediately.

Triage rates varied across the lines used to contact Healthline (figure 8):

- Nearly all calls through Plunketline were triaged, (95 percent on average) reflecting the service is for sick babies and children
- No quick calls to Healthline were triaged, and around 4 out of 5 the remaining calls were triaged
- 10 percent of calls via 0800 Immune were triaged reflecting people were mainly seeking advice.

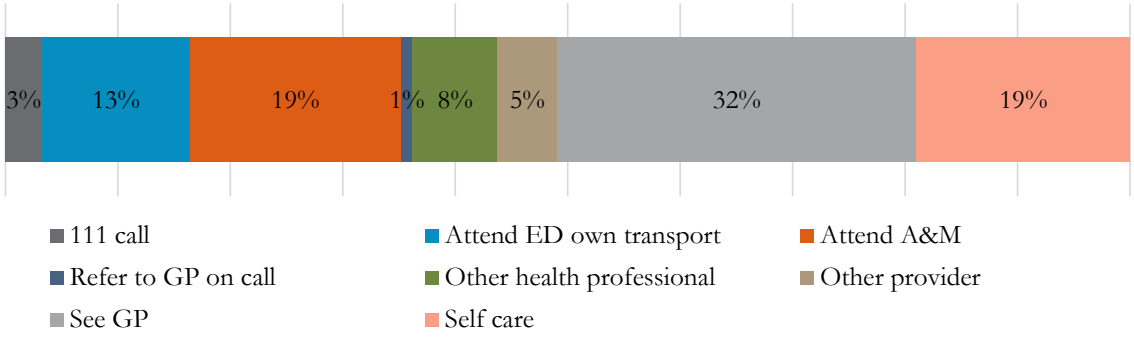
Figure 8: Monthly Healthline calls, percentage triaged by line (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Nurses undertaking clinical triage applied the Odyssey triage tool and their own clinical judgement to recommend outcomes to service users. Figure 9 presents an overview of the outcomes from the Healthline calls triaged.

Figure 9: Healthline call triage outcomes, first year of NTS (November 2015-October 2016)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Other health professional: The service user is directed to a health professional other than a GP, e.g. a midwife, district nurse, paramedic.
Other provider/mental health: The service user is directed to another service, e.g. mental health service, social services. This category also includes calls transferred to mental health helplines within NTS.

2.3 Mental health and addiction services

Number of users

In the first 12 months, 39,000 people used mental health and addiction services, representing about 9 percent of overall NTS users. From September 2016 onwards, the number of users of mental health and addiction services increased by about 25 percent. This was due to more users contacting the Depression Helpline.

Number of contacts

In the first 12 months of operation, there were 77,000 contacts with mental health and addiction services.

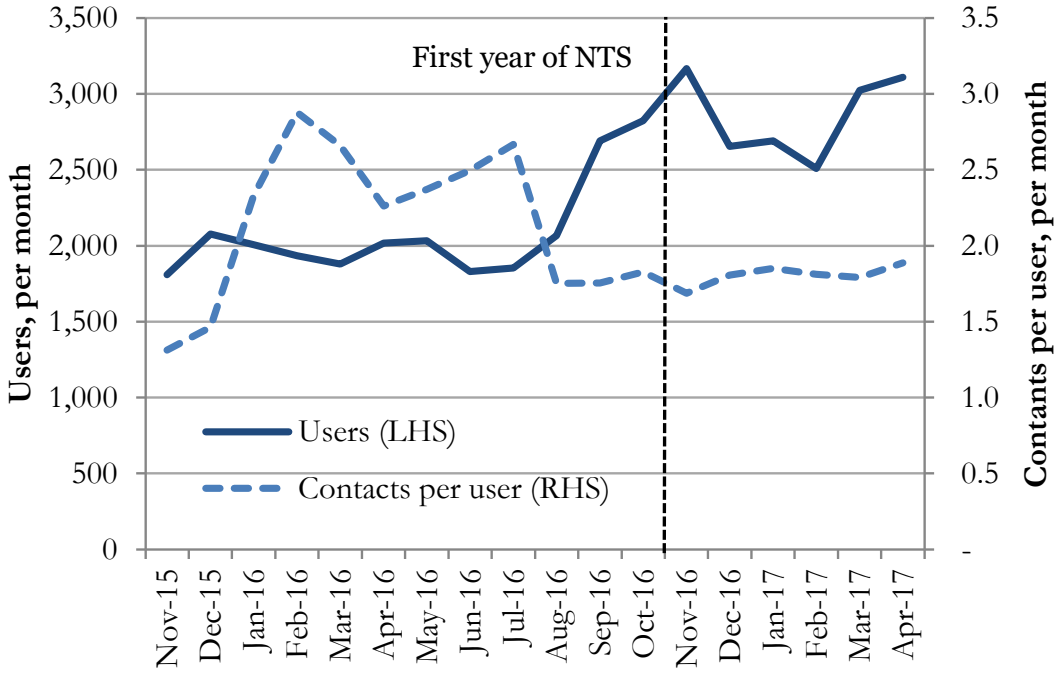
The most significant changes in the volumes in mental health and addiction services were in the Depression Helpline. The relationship between the number of users and number of contacts changed significantly in the first year, (i.e. significant changes in the average rate of contacts per user).

The number of Depression Helpline users remained steady from November 2015 to August 2016. In the following three months, users grew by about 50 percent (refer solid line in figure 10). In comparison, contacts increased significantly in the first two months of NTS with the rate of contacts per person doubling from 1.5 to 3.

The number of contacts dramatically fell when Homecare Medical implemented a system to reduce calls from two (2) frequent callers. The impact of this change was seen in August 2016 when average contacts per user almost halved. Following the increase in users, the number of contacts per user remained steady, i.e. total contacts increased at the same rate as users.

Although there is an explanation for reduction in contacts per user, we are unsure why contact per user increased in the early months of the NTS. We will monitor this trend throughout the evaluation.

Figure 10: Depression Helpline – comparison of users and contacts over time (November 2015-April 2017)



Source: Numbers from Homecare Medical's NTS annual reports; graph by Sapere
LHS=left hand axis
RHS=right hand axis

Number of interactions

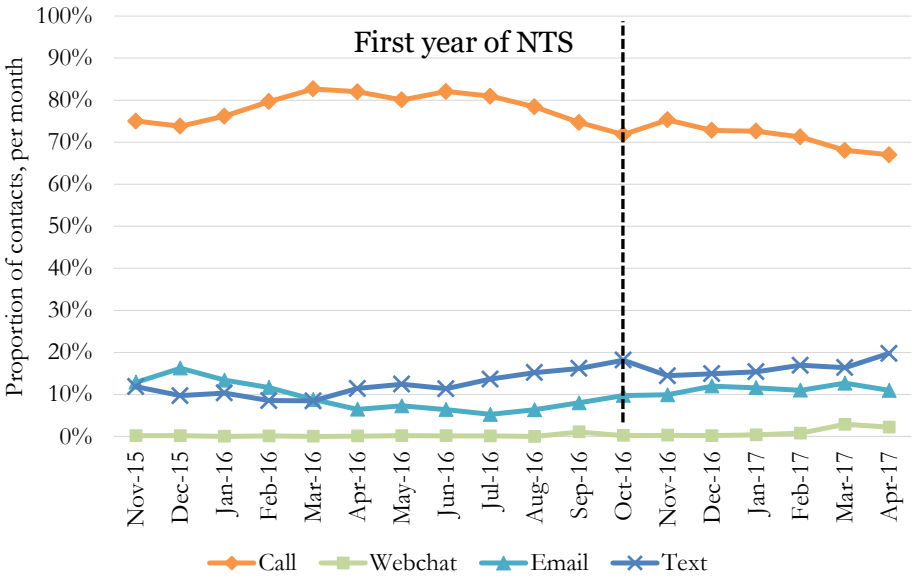
Multiple interactions are common for mental health and addiction services. Mental health and addiction services interactions accounted for about 25 percent of all NTS interactions. Users contacting these services were more likely to have ongoing interactions.

Types of contacts

Most people contacted mental health and addiction services by phone (figure 11). On average, 80 percent of mental health and addiction contacts were by phone call. From July 2016, text contacts for mental health and addiction services increased.

Contact by email accounted for approximately two percent of all NTS contacts. Most emails were to the mental health and addiction services.

Figure 11: Mental health and addiction services proportion of contacts by channel (November 2015-April 2017)

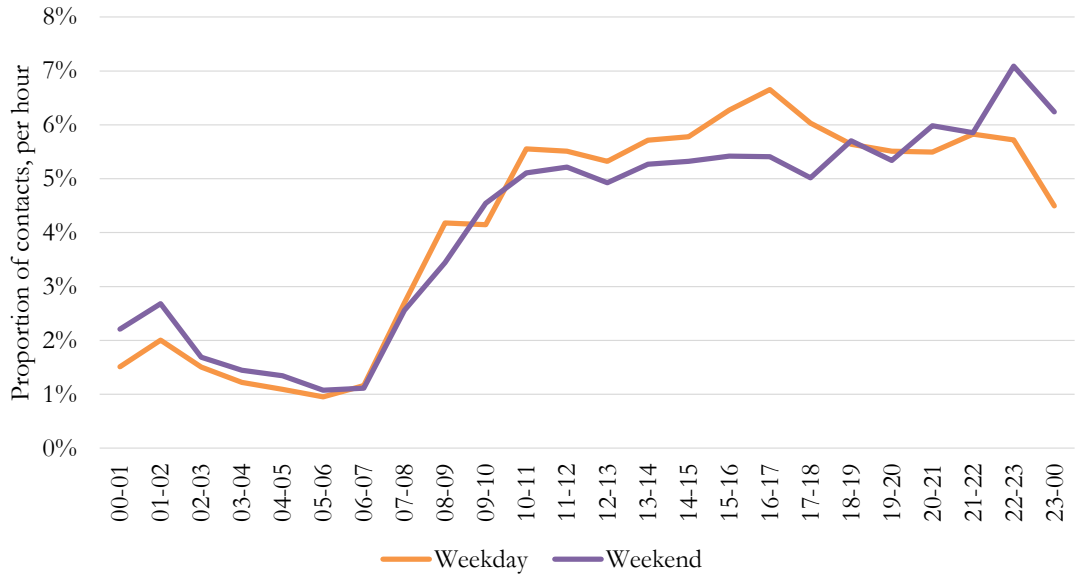


Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Timing of contacts

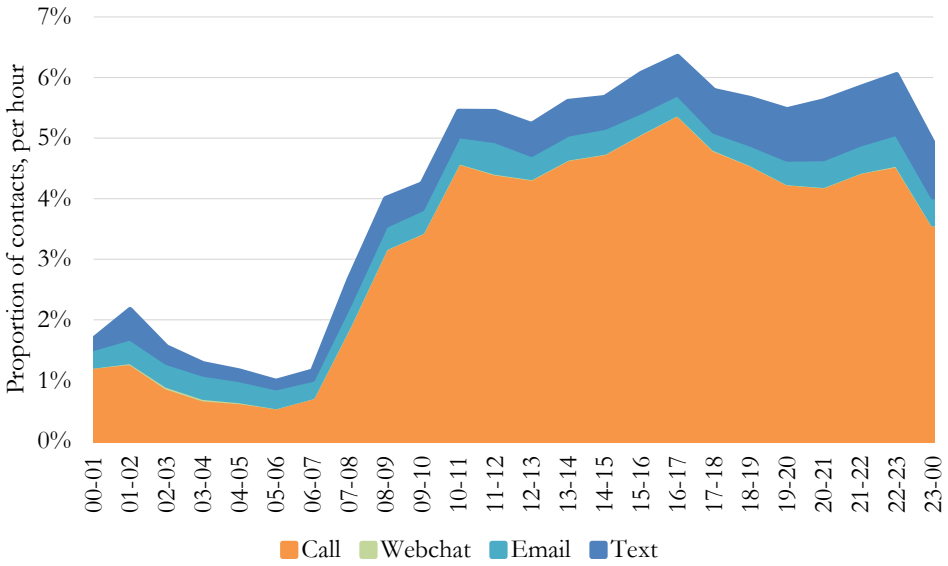
Users of mental health and addiction services were more likely to make contact during the evening, particularly over the weekend, when late night contacts were highest (figures 12 and 13).

Figure 12: Mental health and addiction services contacts by hour of day, first year of NTS (November 2015-October 2016)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Figure 13: Mental health and addictions contacts by hour of day and type (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

2.4 Smoking cessation services (Quitline)

Number of users of Quitline services

In the first 12 months, 49,000 people used Quitline, representing about 12 percent of overall NTS users. Approximately half of callers to Quitline enrolled in a supported Quit programme (Homecare Medical, 2016).

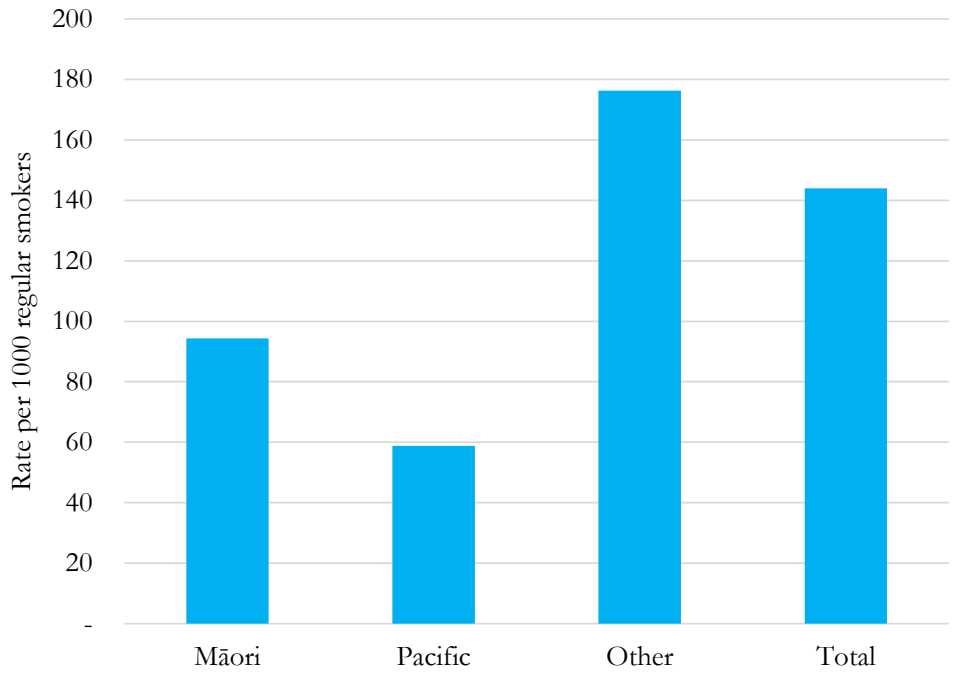
Number of contacts

In the first 12 months of operation, there were 83,000 contacts to Quitline, around 12 percent of all NTS contacts.

Variation analysis

Non-Māori, non-Pacific people have the highest use of Quitline. Māori and Pacific rates were much lower; based on the populations reported to be smokers, as per the census (figure 14).

Figure 14: Quitline service user rates by ethnicity, first year of NTS (November 2015-October 2016)

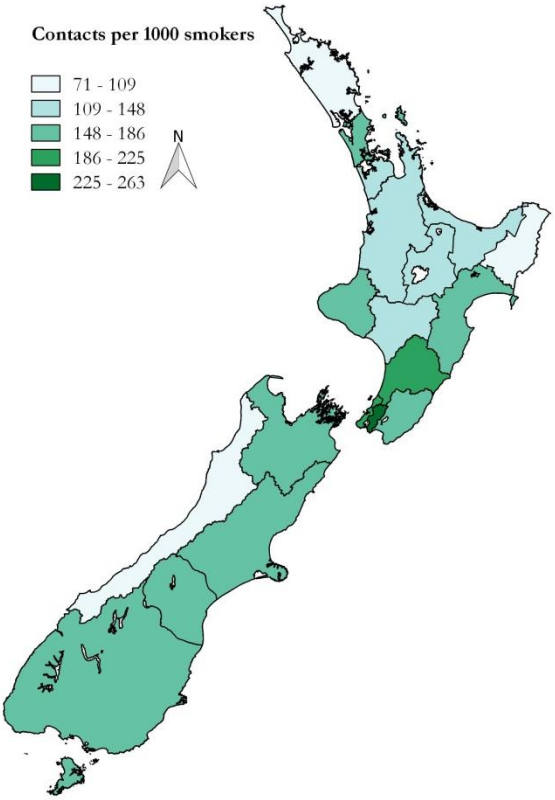


Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere
Ethnicity is not recorded or stated for 36% of Quitline users

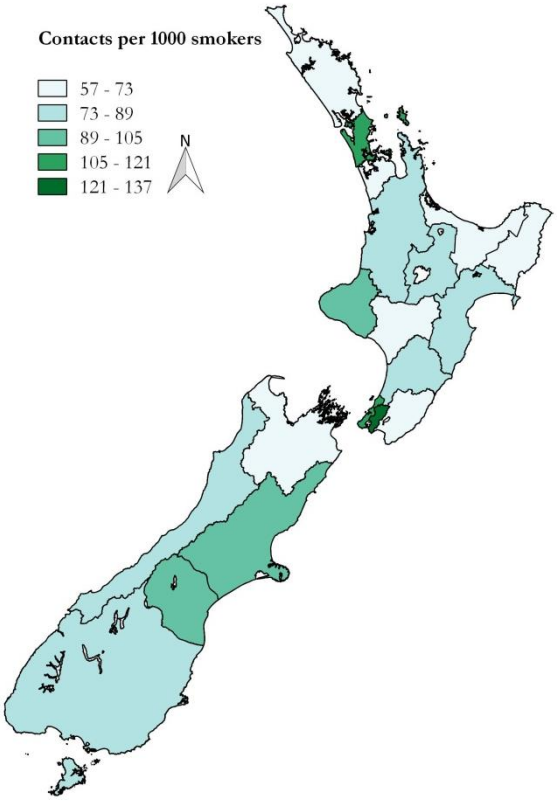
Use of Quitline was highest for Hutt Valley DHB – a clear outlier. Rates were lowest in West Coast, Counties Manukau, and Tairawhiti DHBs. There was a similar pattern of use by DHB for Māori and non-Māori. Figure 15 illustrates the variation of use by DHB, for all ethnicities (left) and for the Māori population (right)

Figure 15: Map of Quitline contact rates (per 1000 regular smokers), first year of NTS (November 2015-October 2016)

All ethnicities



Māori population

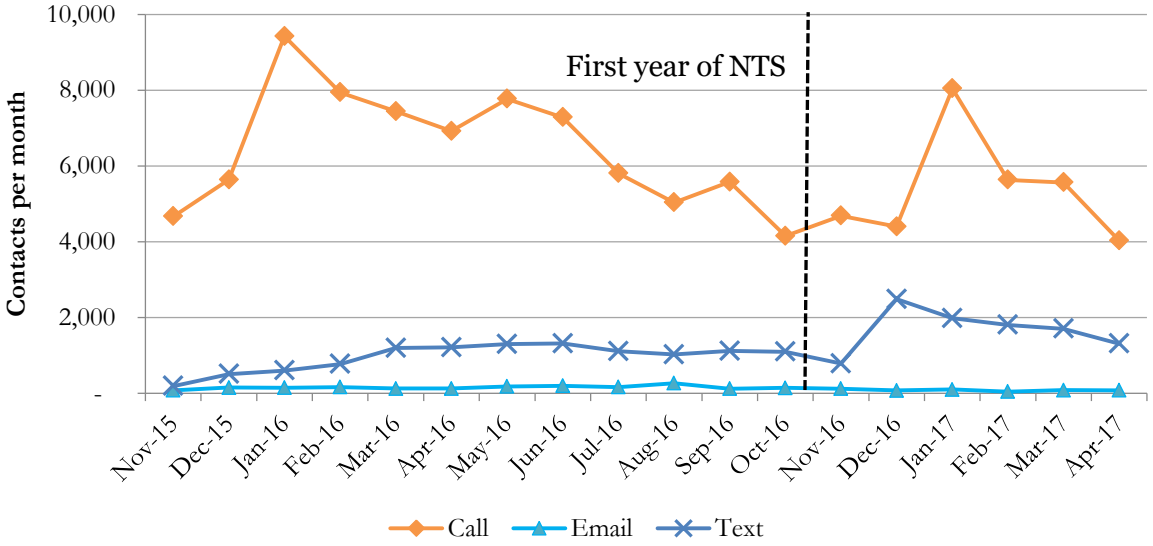


Types of contacts

Phone call was the most common contact channel for Quitline services. However, during 2016, contacts by call continually fell. This fall is likely to be a combination of seasonal effects and limited Quitline marketing and promotion.

Text contacts steadily increased for Quitline over the 12 month period (figure 16).

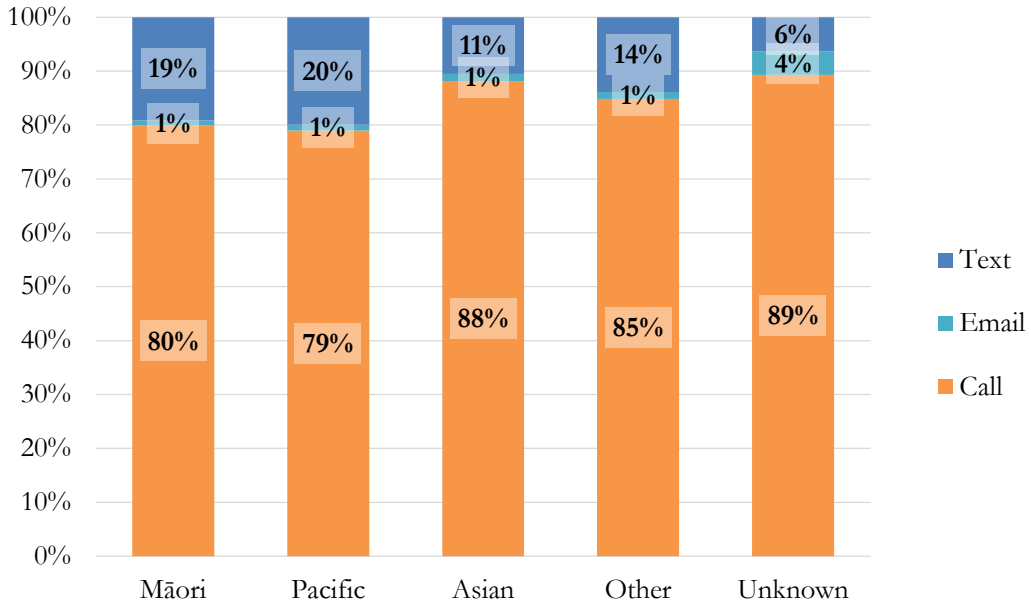
Figure 16: Quitline contacts by channel (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Māori and Pacific users may be more likely than other users to use text to contact Quitline. However, this is a tentative finding. Missing ethnicity data may have resulted in Māori and Pacific people being under-represented (figure 17).

Figure 17: Quitline contact types by ethnicity, first year of NTS (November 2015-October 2016)

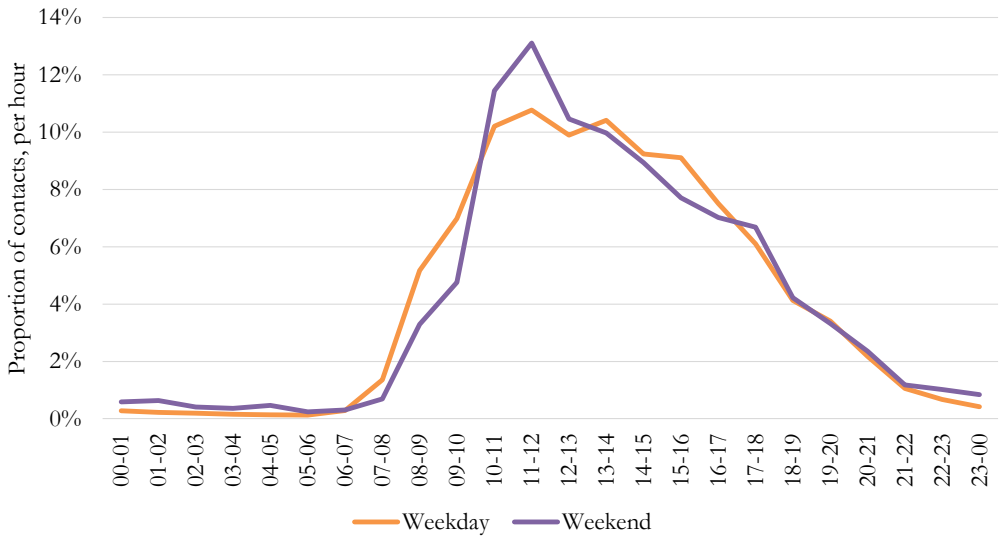


Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere
Ethnicity was not available on 25% of Quitline contacts.

Timing of contacts

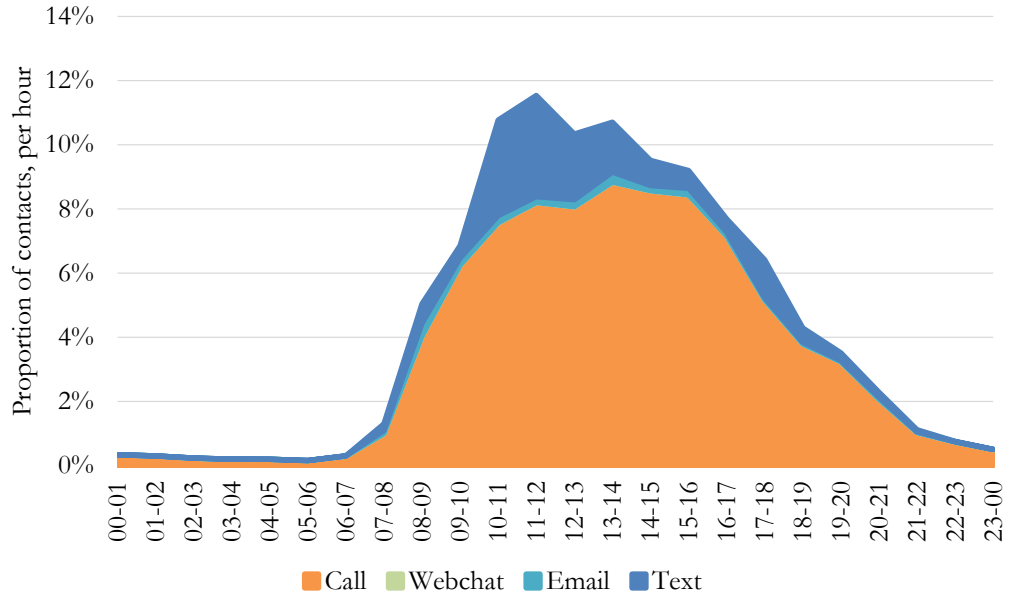
Quitline contacts were concentrated around the middle of the day, with a marked peak between 11am and 12pm in the weekend. The peak was driven by text use. Calls were highest from late morning to late afternoon. The peak at lunchtime could be a response to the automated text responses sent out to those on the Quit programmes. These messages start at 9.30am (figures 18 and 19).

Figure 18: Quitline contacts by hour of day (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Figure 19: Quitline contacts by hour of day and type (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Number of interactions

Quitline users often have multiple interactions with the service. Quitline interactions made up around 25 percent of all NTS interactions. NTS as a whole had a 13 percent increase in interactions between November 2015 and April 2016. This increase was due to increases in Quitline and the Depression Helpline interactions through text.

User outcomes

Approximately half of callers to Quitline enrolled in a supported Quit programme (based on Homecare Medicals reporting of the first eight months[2]). Quit advisors cannot contact many of those enrolled in a Quit programme to find out if they had a successful Quit attempt. After four weeks, 64 percent of people enrolled in a Quit programme are uncontactable, and 82 percent are uncontactable at three months.[3]

Of those enrolled in a Quit programme 16 percent successfully quit at four weeks and 9 percent at three months.

2.5 Emergency services

Use of emergency services

Emergency services represented about 8 percent of NTS users. Contact to these lines remained stable throughout the first 12 months. Emergency service interactions accounted for about 7 percent of all NTS interactions.

Ambulance secondary triage

Ambulance secondary triage had approximately 2,500 calls per month in the first year of operation. Ambulance secondary triage contacts peaked in the early morning and early evening.

Ambulance secondary triage service outcomes were integrated with ambulance services. In June 2016, 51 percent of service users put through to ambulance secondary triage had an ambulance dispatched, and 32 percent were diverted into community care or self-care (Homecare Medical, 2016).

[2] Homecare Medical's NTS year-end report: November 2015 to June 2016 (Homecare Medical, 2016, p. 57)
[3] We do not know if these figures include those who have been enrolled in the programmes less than three months.

Poisons line

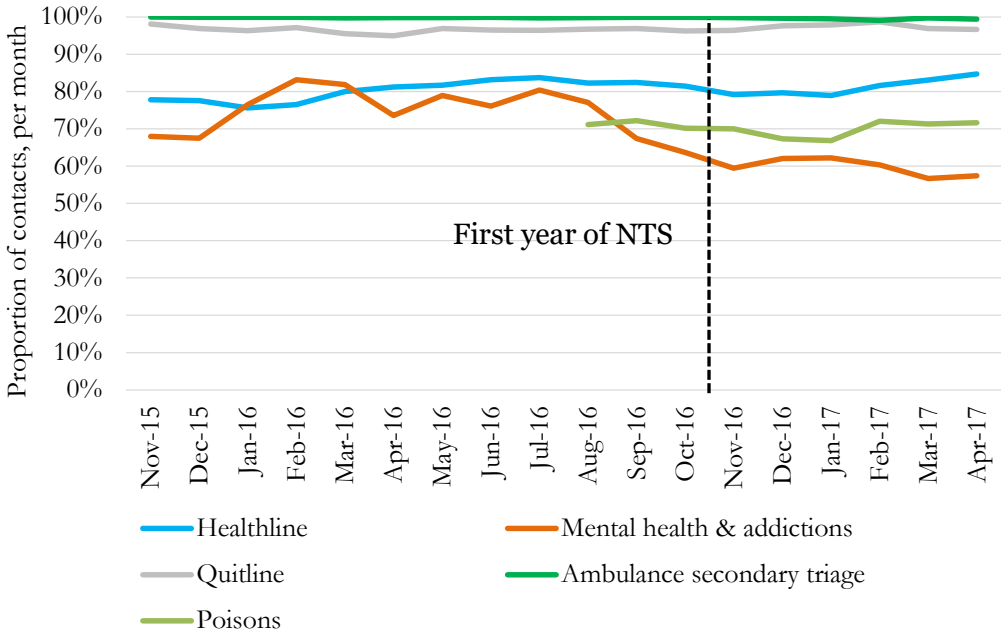
Before August 2016, the National Poisons Centre reported data separately from other NTS services. In August 2016, the poisons line moved to a new platform. Homecare Medical now adds this data to their records. Demographic data collection reduced when the Poisons Centre started using the new platform. Ethnicity and DHB information were recorded for fewer than 20 percent of calls.

3. Variation of demographic data collected

Recording demographics information varied across NTS services, channels used, and type of demographic information. Homecare Medical reported a number of service users prefer to remain anonymous, particularly for the mental health and addiction services. Some users were unwilling to provide any personal information. For phone interactions, staff were coached to ask general demographic questions later in the call. It is more difficult to collect demographic information during web chat, email or text interactions.

Figure 20 shows age was almost always recorded for contacts with the ambulance secondary triage, and for Quitline. Age was recorded for around four in five contacts with Healthline. This remained fairly consistent over the first 18 months of the NTS. Age was least likely to be collected for contacts with mental health and addiction services. Coverage decreased slightly after the first year.

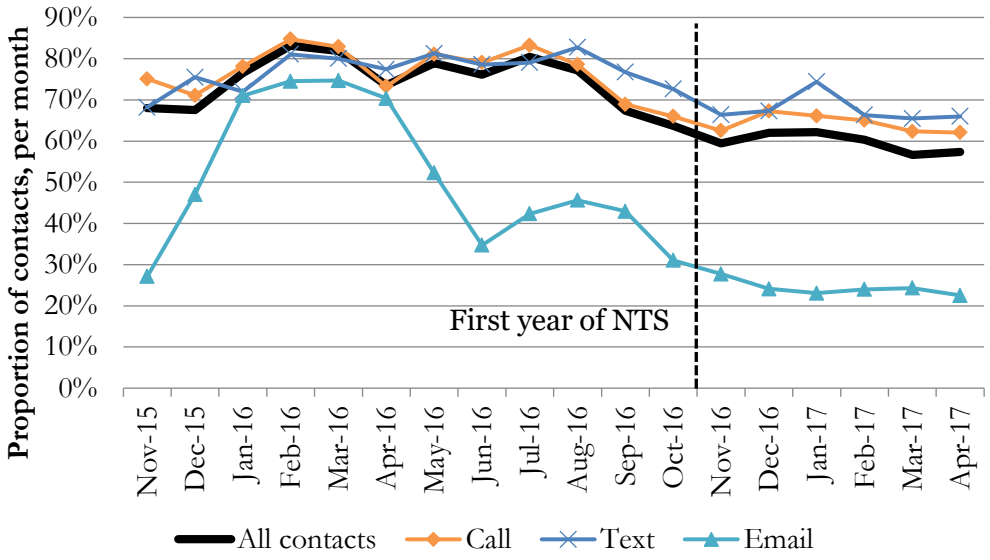
Figure 20: Proportion of contacts with age recorded (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

To understand why the proportion of contacts with age recorded in mental health and addiction services reduced, we looked at the rate by each channel. This showed the reduction occurred across all three of the channels mainly used to contact the service (figure 21).

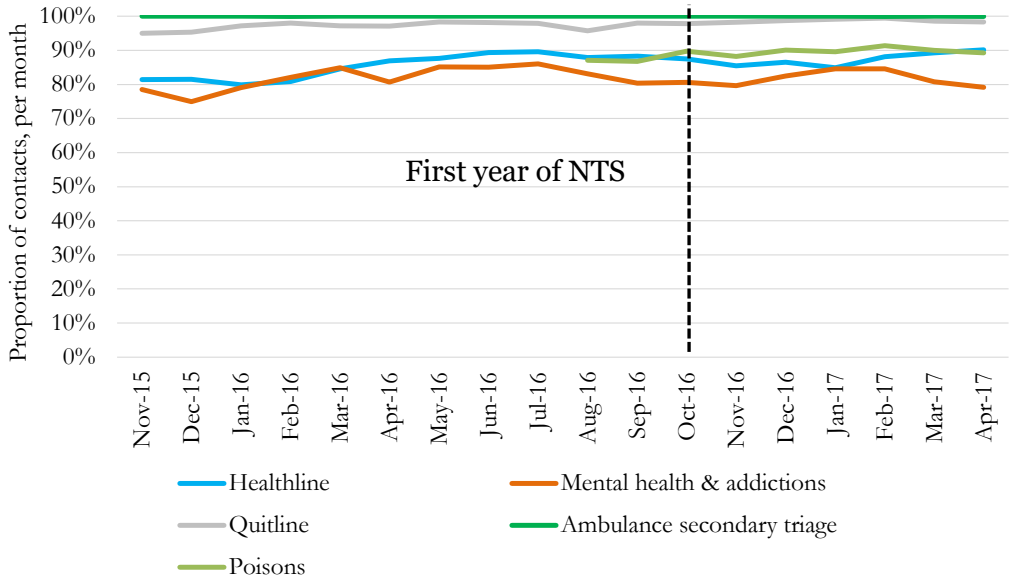
Figure 21: Proportion of contacts with age recorded – by main channels used to contact mental health and addiction services (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Figure 22 shows the collection of gender across all lines was relatively high. There appeared to be a slight improvement for Healthline over the period.

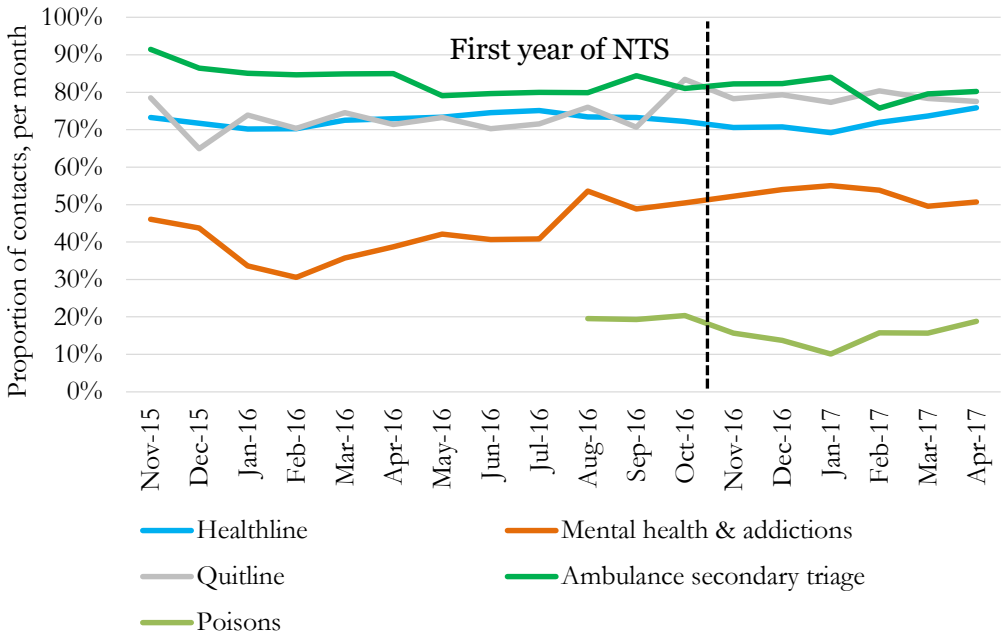
Figure 22: Proportion of contacts with gender recorded (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

Ethnicity was collected for around half of contacts with mental health and addiction services (figure 23). Ethnicity collection improved following an initial drop in February 2016.

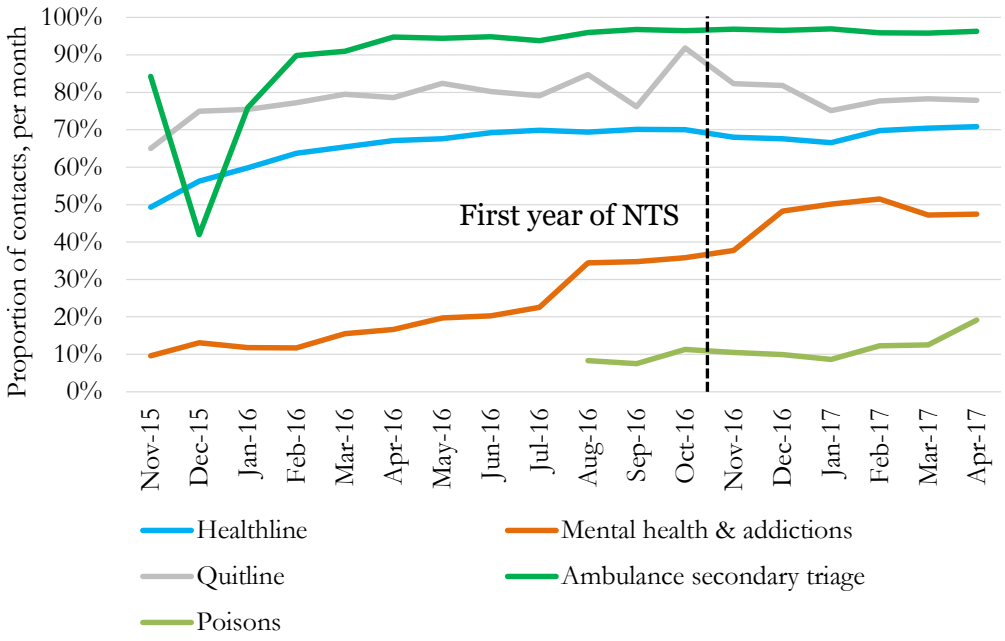
Figure 23: Proportion of contacts with ethnicity recorded (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube', graph by Sapere

Collection of DHB data improved for Healthline and Quitline over the first six months of NTS (figure 24). Although low, mental health and addiction services increased the capture of DHB data throughout the first year of NTS.

Figure 24: Proportion of contacts with DHB recorded (November 2015-April 2017)



Source: Numbers sourced from Homecare Medical's 'data cube'; graph by Sapere

4. Alignment to service specifications

Table 4: Assessment of NTS in year one against service specifications listed in contract (Ministry of Health, 2015)[4]

Clause	Intent of service agreement	Result
6	**Provide clinical triage service including immunisations advice** to the public. Triage must be: ▪ supported by a clinical decision tool ▪ delivered within an appropriate timeframe ▪ record injury-related information and provide injury advice ▪ transfer/signpost consumers to the right care, or provide appropriate information/advice about the treatment needed. ▪ provide a discharge summary ▪ assist consumers to self-manage their care as appropriate ▪ provide preventative advice or care ▪ manage high demand and refer as appropriate.	Established
7	**Provide poisons advice service** that provides information and advice about poisoning to the general public and health professionals. The service must be contactable by at least one telephone number, be staffed 24 hours a day 7 days a week, have access to a medical toxicologist 24/7. It must also promote preventative poisons information, incorporate and update poisons information, and monitor poisoning statistics.	Established. Poisons advice is subcontracted to Otago as identified in procurement process.
8	**Provide stop smoking service.** The service must deliver stop smoking service support via phone and other digital channels. It must contribute to reducing rates of smoking in NZ and contributes to reducing smoking rates amongst Māori and Pacific people to rates equivalent of other population groups. The service must triage consumers to the	Established The CRM was subject to funding agreement between the parties. The Ministry of Health and Homecare Medical agreed the CRM was not to be delivered under this contract.

[4] The evaluation is not assessing or reviewing NTS information technology. Homecare Medical have provided feedback on these aspects.

Clause	Intent of service agreement	Result
	programme most suited to them. It must monitor consumer progress to stop smoking. It must also transfer, signpost, or refer consumers to other services as relevant. It must develop a CRM to enable service provision by face-to-face stop smoking services	
9-12	**Provide depression, gambling, and alcohol and other drug counselling support services.** The service must provide screening and short-term interventional counselling (and where face-to-face services are unavailable, provide long-term counselling). It must also ensure effective links with face-to-face services. The depression counselling support service must support HPA online resources including the Journal and the Lowdown.	Established
13	**Develop working relationships with other health sector organisations including:** ▪ Ambulance services ▪ IMAC ▪ ACC ▪ Plunket line ▪ HPA	Relationships were established with these identified partners.
14	**Provide ambulance secondary triage services** The service must develop working relationships with St John and Wellington Free Ambulance. This must include providing call-handling services, use a triage tool that compliments and is integrated with the ambulance service tools, and provide a secondary triage service, provide a common directory of services, and have a joint communication and media management strategy.	Ambulance secondary triage established and agreements in place with Wellington Free and St John *Note: Secondary triage not yet rolled out across the country. St John is responsible for the roll-out of secondary triage and determining which areas go live when. They expect to complete roll out by the end of 2017.*
15	**Answer immunisation calls from members of the public** The service must ensure the staff answering the calls are appropriately trained and credentialed and that the training material is up to date. Complex queries must be transferred to IMAC specialists (either by warm transfer or referral).	Immunisation advice was established.
16	**ACC needs for the service** The service must be able to transfer calls to ACC	Services established Homecare Medical provides regular anonymised

Clause	Intent of service agreement	Result
	helpline as appropriate, ensure staff are understand the services ACC provides, provide appropriate information to consumers, and work with ACC to develop appropriate injury clinical pathways.	datasets on accident related triage to ACC.
17	**Appropriately manage call transfers with Plunketline**	7% of all Healthline calls were triaged by Plunket nurses using the NTS CRM
18	**Work in partnership with HPA** to develop, implement and operate a marketing and service promotion plan. Also, ensure that HPA has access to information it needs	A marketing plan was developed. Homecare Medical has an MOU and Letter of Agreement with HPA to provide services.
19	**Provide a directory of services** that is kept up to date, accessible to NTS staff and the wider health and disability sector, ambulance services, and members of the public	Homecare Medical reported they subcontracted Healthpoint to create and maintain the service directory. The directory is available to all services at www.healthpoint.co.nz Homecare Medical provides updated information about services to Healthpoint when relevant.
20	**Pandemic, health emergency management and business continuity** The service will work with the Ministry in planning for the provision of services during a pandemic or other local or national emergency. The service will also ensure appropriate business continuity and disaster recovery plans are in place.	Pandemic and health emergency policies were in place. Feedback from the Ministry indicated the policies require strengthening. The Ministry assessed the policies as being an Emergency Procedures plan and not an Emergency Response Plan (which describes how Homecare Medical would respond to an emergency or event in the community)[5].
21	**Provide access to NTS 24/7 free of charge** through the following media channels: telephone, text message, email, online tools, mobile phone apps, online chat, self-guided e-therapy, and social media.	NTS was accessible in a range of channels. Some channels were still being developed (e.g., social media).
22	**Operate Contact centre to facilitate the provision of services**. The centre must by NZ based and operate a multi-channel platform.	NTS operated from a New Zealand based contact centre with a multi-channel platform.
23	**Exit criteria for consumers**	Exit criteria were used.
24	**Integrate Māori, Pacific and other cultural** values, beliefs and practices, and appropriately support access to the service by diverse communities.	Priority populations were identified in NTS annual plan. Homecare Medical developed a wellbeing strategy for priority populations (2016).

[5] Ministry of Health's internal communications (dated 10 March 2017).

Clause	Intent of service agreement	Result
25	**Use a Clinical decision support tool** that is internationally recognised and supported, is consistent with best practice, delivers consistent outcomes, and is approved by clinical governance group.	The Odyssey tool is internationally recognised and meets requirements.
26	**Provide a telephone helpline** to provide technical support services for the communication system, network computers and software.	Homecare Medical had in-house technical support as well as a partnership with Spark for additional technical support.
27	**Employ an appropriate workforce** with relevant qualifications. Have a programme for workforce development and appropriate training and access to ongoing training in place.	Clinical governance group considered the workforce appropriate.
28	**Provide a website** consistent with the marketing plan and usability and accessibility standards	Web platforms were transferred from previous providers. Websites for some services were upgraded to be consistent with new service requirements.
29	**Develop marketing and service promotion plan** working with HPA and other partners	A marketing plan was developed in May 2016 with HPA and ACC.
30	**Produce information/health education resources** working with HPA and others as needed	Not in the first year of implementation. Homecare Medical is currently working with HPA on developing Quit resources.
31	**Compliance with national health information technology plan**	Homecare Medical reported NTS: ▪ aligns with the NHITB. ▪ is compliant with HISO standards ▪ is HL7 compatible ▪ integrates to national systems such as NHI and ESAM.
32	**Interoperate with other systems** in accordance with relevant standards	Homecare Medical reported information technology has the capability to interoperate using health standards. Homecare Medical reported to be working with GPs, DHBs and others to increase use of this interoperability across the sector.
33	**Standards and architecture** need to comply with government and health requirements	Homecare Medical reported compliance with all relevant standards.
34	**Infrastructure** – Homecare Medical will bear the cost of any infrastructure	Homecare Medical reported funding all IT infrastructure, the majority of which is purchased on an "as-a-service" basis from Spark.

Clause	Intent of service agreement	Result
35	**Implement privacy and security systems** to protect consumers	Privacy Framework developed and implemented in 2015. Homecare Medical reported the privacy framework was updated in 2017. A privacy risk impact assessment undertaken in 2015 before go live.
36	**Collection of consumer information to** meet legislative and other requirements	Privacy Framework developed and implemented in 2015. Homecare Medical reported the privacy framework was updated in 2017. A privacy risk impact assessment was undertaken in 2015 before going live. No breaches identified in interviews with the clinical governance group.
37	**Privacy/informed consent policy**	Privacy Framework developed and implemented in 2015. Homecare Medical report the privacy framework was updated in 2017.
38	**Deliver service to meet Quality standards**	Homecare Medical reported the following against schedule 4 of the NTS agreement: 1. On-line Quality Management System (QMS) in place by go-live. Quality management plan included quality strategy. 2. Services were compliant with relevant Standards 3. Most policies and procedures documented within QMS by go-live, key documents completed by early 2016 4. Privacy Impact Assessment completed and signed off by mid-December 2015. Privacy policy and framework completed by go-live. 5. Service information available on NTS websites from prior service providers 6. Complaints procedure documented and described on website by go-live 7. N/A (this is ethical review for research) 8. Policies and procedures for managing service user risk implemented by go-live 9. Compliant at go-live 10. Implemented within CRM by go-live 11. Policies in place by go-live.
39	**Continuous quality improvement**	Call reviews were in place for all clinical staff. Staff could access training. Training implemented based on identified need. All interactions monitored. Data recorded. Homecare Medical reported: ▪ An on-line Quality Management System

Clause	Intent of service agreement	Result
		(QMS) was set up before go-live. ▪ Complaints, compliments and incidents (and service improvements arising from them) monitored in QMS and reported the Service Improvement Board.
40	**Incident management**	Homecare Medical reported: ▪ Incidents are recorded and managed within the QMS. ▪ SAC1 and SAC2 incidents can be reported to Health Quality and Safety Commission directly from the QMS.
41	**Management of reportable events**	Reportable events were monitored and met reporting requirements
42	**Develop relationships and links with the wider health and social care sector**	Agreements and MOUs developed with organisations Relationship managers employed Relationships with DHBs and PHOs fostered.
43	**Relationship with primary care**	Homecare Medical reported relationships with 60% of practices and PHOs are already in place through the after-hours triage service. Relationships with other PHOs in place through parent organisations, Procare and Pegasus. Quitline referrals from primary care managed through portal already in place at go-live.
44	**Governance**	Governance and clinical governance groups in place and. Clinical governance group met monthly during early implementation in year one. Homecare Medical report there has been a vacancy (Māori advisor) on the group for part of the year.
45	**Service Improvement Board**	Service Improvement Board was established, met regularly, and had good membership range.
46	**Service monitoring relationship meetings**	NTS met regularly with stakeholders and provided activity reporting regularly.
47	**Service evaluation**	Commenced.
48	**Reporting**	Quarterly reports were provided to Ministry of Health and ACC.
49	**Transition to go live**	Transition achieved go live, and implementation plan was provided.

Clause	Intent of service agreement	Result
Appendix 1	Provides reporting targets	HM and MOH were working to identify useful outcome measures in year one.

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Homecare Medical. (2016). *National Telehealth Service Year End Report (November 2015 to June 2016)*. Homecare Medical. Unpublished.

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