

Understanding mental health risk in Aotearoa: an analysis of the 1737 Need to Talk telehealth service

Miriama K Wilson, Fiona Pienaar, Ruth Large, David Codyre, Verity F Todd

ABSTRACT

AIM: The 1737 Need to Talk telehealth service (mental health call and text helpline) was launched in Aotearoa New Zealand in June 2017, providing the public with the ability to call or text when they need mental health support. The aim of this research is to describe the utilisation of the 1737 Need to Talk telehealth service. We describe the patterns of 1737 contacts over time and describe the contact users, including the most at-risk contacts (defined as those contacts who trigger the “Break Glass” procedure).

METHODS: This is a retrospective observational study analysing 1737 Need to Talk data over 5 years and 7 months from June 2017 through to December 2022. A total of 719,904 contacts to the service were analysed.

RESULTS: This research found that contacts to the 1737 Need to Talk service (by call or text) increased until the end of 2021 and then plateaued from 2022. The average proportion of at-risk service users was 0.43% of 1737 Need to Talk contacts, and this grew minimally over the period investigated. Service users most at risk were found to be of the female gender, in the 13–19-year-old age group, and those residing in Whanganui and MidCentral districts.

CONCLUSION: This study details the growth in the number of specific demographics reaching out for mental health support to 1737 and may be indicative of the need for increasing mental health support.

Globally, mental or substance use disorders (as described in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition [DSM-5]*) are common, impacting the lives of many across the globe.¹ Most disorders (62.5%) first occur before the age of 25 years, with the peak age of 14.5 years, making early recognition and intervention essential.² Experiencing mental illness—including depression and anxiety—is a risk factor for suicide.³ Overall, suicide rates in New Zealand decreased by 20% from 1996 to 2016; however, not all demographic groups reflected a decrease.⁴ New Zealand has been identified as one of the five Organisation for Economic Co-operation and Development (OECD) countries (alongside Lithuania, Finland, Ireland and Chile) with the highest suicide rates for young people (15.6 per 100,000 15–19-year-olds).⁵ Between 2015 and 2019, the leading cause of all mortality in 15–19-year-old New Zealanders was suicide. Māori males had the highest rates of suspected suicide, with a rate of 23.9 per 100,000, 1.4-times higher than non-Māori males. Suspected suicide rates for Māori peaked in 2019–2020 at 21.0 (per 100,000 Māori), compared with the New Zealand average rate of 12.9 (2019–2020). The age group with the highest suspected suicide rates

was the 20–24-year age group, which peaked in 2018–2019 at 25.8 per 100,000.⁶

For those experiencing high-risk mental health conditions, telehealth services provide critical and timely access to mental health professionals and, where necessary, connection to emergency services, without the barriers associated with traditional support. The 1737 Need to Talk service provides a mental health support service to 5.3 million New Zealanders, 24 hours a day, 7 days a week, using a free-to-call phone and text number, publicly funded by Te Whatu Ora – Health New Zealand.⁷ The line is staffed by trained telehealth peer support workers or counsellors, who use a call flow plan to build a rapport with the service user, identify their presenting issue and develop a plan with the service user focussed on making a behaviour change or using their usual coping strategies, to build their resilience.⁸ In the case of immediate risk of harm—including risk of suicide—to a service user or another person, risk is assessed, and a plan developed that may include immediate referral to local crisis services. Where a plan cannot be agreed on and risk is serious and imminent, the “Break Glass” procedure allows the call handler to contact emergency services (police or ambulance) without requiring

the consent of the at-risk service user (New Zealand Health Information Privacy Code).⁹

The aim of this research is to describe the utilisation of the 1737 Need to Talk telehealth service (mental health call and text helpline) in New Zealand. We describe the patterns of 1737 contacts over time and describe the contact users, including the most at-risk contacts (defined as those contacts who trigger the “Break Glass” procedure).

Methods

Study design

This is a retrospective observational cohort study using routinely collected demographic and Break Glass data from the 1737 Need to Talk service. Data from 1737 Need to Talk service users was collected between 1 June 2017 and 31 December 2022 (5 years and 7 months).

Setting

The 1737 Need to Talk telehealth service is a free service that commenced in June 2017, providing 5.3 million New Zealanders with a platform to call or text message when they feel anxious, overwhelmed by emotions and/or thoughts, depressed and in need of support. 1737 Need to Talk is one of the 37 free telehealth services that Whakarongorau Aotearoa makes available to all New Zealanders.¹⁰ The service provides free 24/7 support utilising a “one-off intervention with an open door to return” model of care.⁸ Service users are given the option of either counselling or a peer support service; the latter is provided by people with lived experience of their own mental health or addiction challenges. Through the 1737 Need to Talk service, the counsellor or peer support worker builds rapport with the service user, establishes the problem for which they are seeking help and develops a support plan based on their immediate needs or situation.⁸

In the event of a service user being at risk of harming themselves or others, or if a child is at risk, a safety plan is developed with the service user, which may also involve “warm transfer” to the local mental health crisis team or emergency services. A warm transfer requires the call handler to talk to the service user and then the service they are being transferred to before connecting the two on the phone and ensuring they are talking before disconnecting. However, where a plan to ensure safety cannot be agreed and there is a serious risk of harm, the Break Glass procedure is followed.

A Break Glass procedure is initiated in the event of a service user having high-risk physical health needs, being a risk to themselves, a current/future risk of harm to others (including child abuse/neglect) and/or they have disclosed past serious harm to others and are at risk of re-offending (2020, Whakarongorau Aotearoa Internal staff document).

Ethics

This research project was approved by the Auckland University of Technology Ethics Committee (AUTEC) (23/28). STROBE cohort reporting guidelines were followed. Service user data were provided in a de-identifiable form.¹¹

Participants

The data included in this research project involved service users who called or texted the free 1737 Need to Talk service. For this research, 1737 Need to Talk total contacts refer to the number of calls and text conversations the service receives. The total number of 1737 Need to Talk contacts includes unanswered calls; however, unanswered calls were not included in the service user data.

Variables

De-identified data collected at the time of contact were provided by Whakarongorau Aotearoa for all service users. During the conversation, the call handler would note the time of call and ask the caller for their demographic details including gender, age and ethnicity group (as identified by service user) (prioritised)¹² and New Zealand district (previously known as district health boards). Population data by New Zealand district is available through StatsNZ.¹³ Deprivation data for each of the health districts was obtained from the New Zealand Index of Multiple Deprivation (IMD18).¹⁴

Study size

Between 1 June 2017 and 31 December 2022, there were 719,904 contacts to the 1737 Need to Talk helpline and 3,089 Break Glass incidents recorded.

Statistical methods

Both the number of offered 1737 contacts and the proportion of 1737 Need to Talk contacts that resulted in the Break Glass procedures were calculated by month. A linear regression model was used to analyse the trend over time, using the month as the independent variable and the number of contacts/proportion of Break Glass incidents as the dependent variables, with R^2

indicating the goodness of fit. Comparative analyses for gender, age and ethnicity were performed based on the relative proportions of Break Glass service users compared to all 1737 Need to Talk service users using the Chi-squared test. A t-Test was used to compare the district data for Break Glass and 1737 contacts rates per 10,000 people to the New Zealand national averages.¹³ A linear regression was performed using the IMD18¹⁴ for each district as the independent variable and the 1737 utilisation or Break Glass data per 10,000 as the dependent variables, with R^2 indicating the goodness of fit. R and RStudio were used for statistical analysis.¹⁵ Differences with p-value (p) <0.05 were deemed statistically significant.

Results

Between June 2017 and December 2022, there were 719,904 contacts: 421,367 (58.5%) contacts by call, and 298,537 (41.5%) by text messaging. Of these contacts, 49.9% were from unique users, with an average of 10,745 contacts per month or 353.3 per day (Appendix Table 1).

1737 Need to Talk text and call contacts by month and year

The year with the greatest number of contacts was 2021 (170,532), while the busiest month was April 2020 (17,699). The total number of 1737 Need to Talk contacts increased in a polynomial trend with time, with an R^2 value of 0.8997 (Figure 1). Peaks in contacts to the services were observed around major events in New Zealand (the Christchurch mosque attack and COVID-19 lockdowns) (Figure 1).

Break Glass incidents by month and year

A total of 3,089 Break Glass procedures were applied between 2017 and 2022, with an average of 46.8 Break Glass procedures applied monthly (Appendix Table 1). During this period, the average proportion of Break Glass incidents compared to offered 1737 contacts was 0.43%, ranging from 0.20–1.15%, excluding the introductory month of June 2017 (Figure 2 and Appendix Table 1). Linear regression testing proved a significant increase with time for the proportion of calls resulting in a Break Glass incident compared to total contacts ($p < 0.05$). However, this increase is low—an

Figure 1: The comparison of all offered contacts to 1737 Need to Talk text (yellow), call contacts (green) and total contacts (blue) by month (2017–2022). The trend line for total contacts is shown as a blue dashed line. Black dashed lines correspond with significant New Zealand events as shown. See Appendix Table 1.

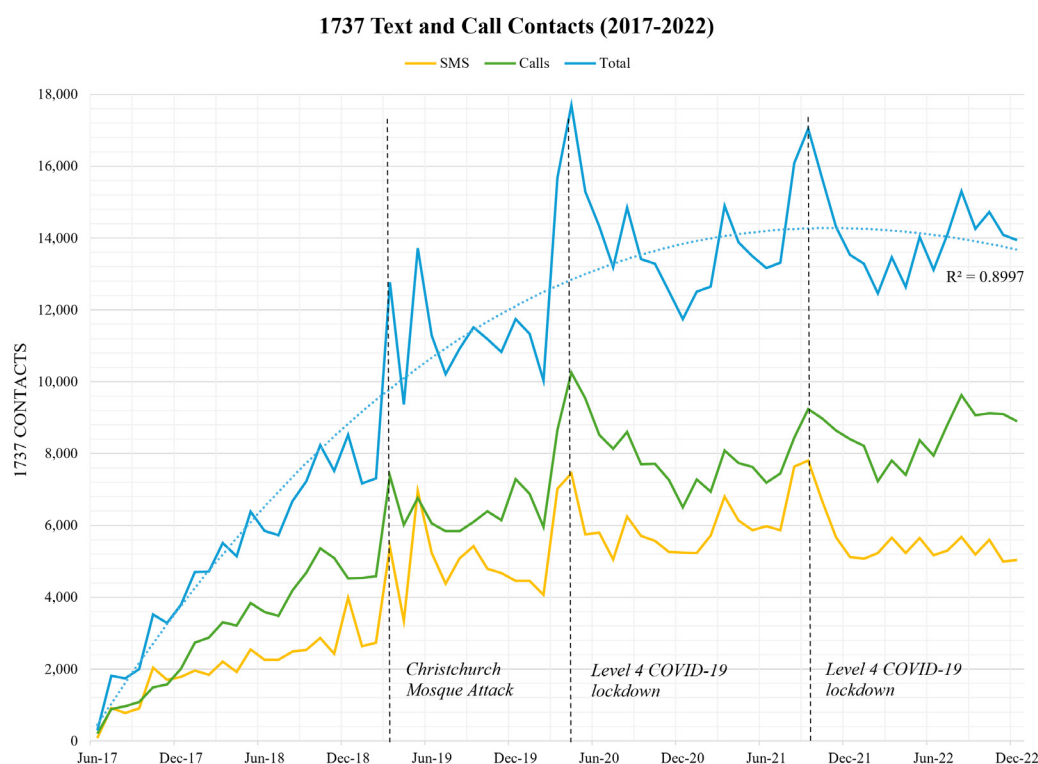


Figure 2: The proportion of Break Glass procedures of all 1737 Need to Talk contacts for each month from 2017 (July) to 2022 (December) (solid green line). The proportion of Break Glass procedures over this entire period is 0.43% (dashed black line). See Appendix Table 1.

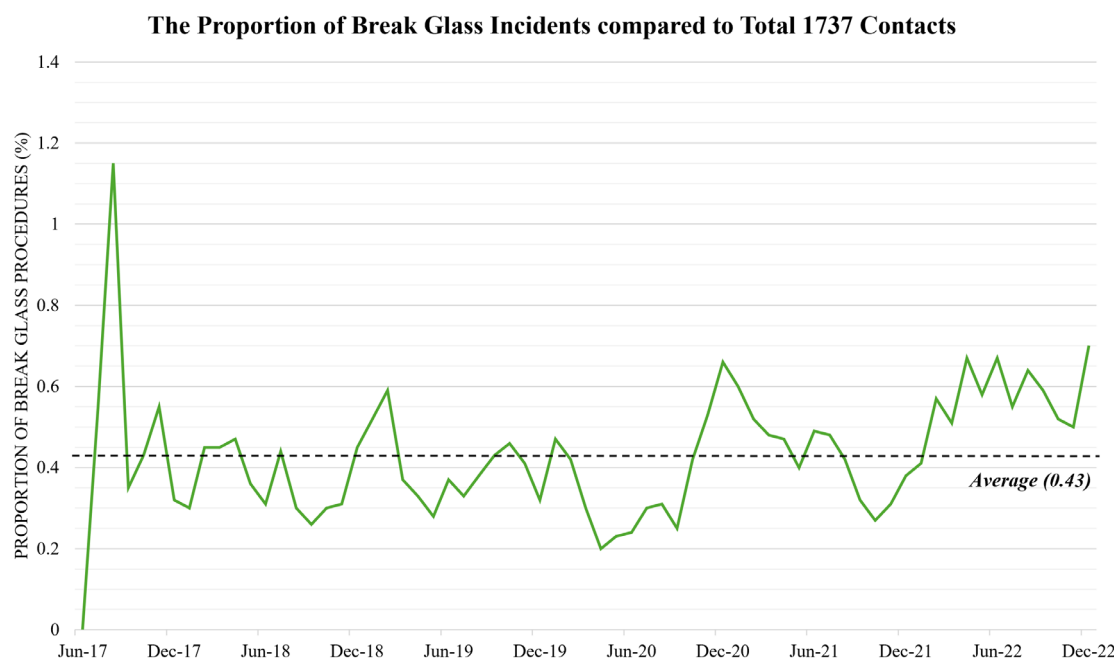


Figure 3: Bar chart representing the gender proportion for Break Glass incidents and total answered 1737 contacts. Break Glass incidents are represented in red, total answered 1737 contacts are represented in yellow. See Appendix Tables 2 and 3.

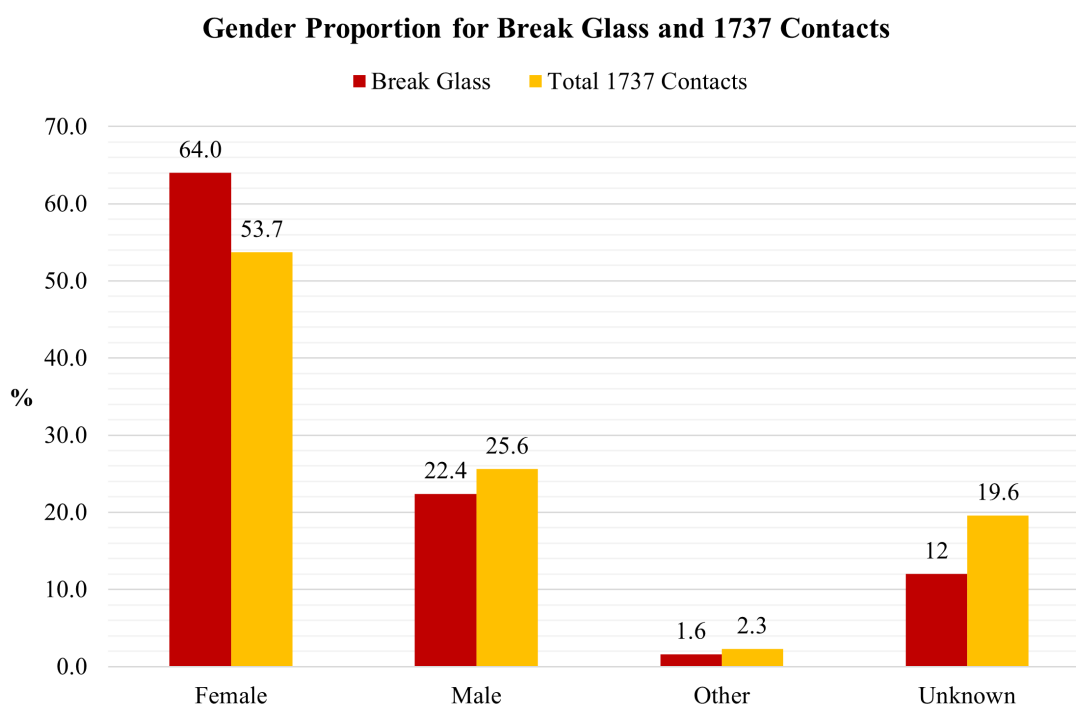


Figure 4: Bar chart representing the proportion of Break Glass incidents and total answered 1737 Need to Talk contacts for each age group. Values under 1% are not shown in the figure. Break Glass incidents are represented in red, total answered 1737 contacts are represented in yellow. See Appendix Table 4.

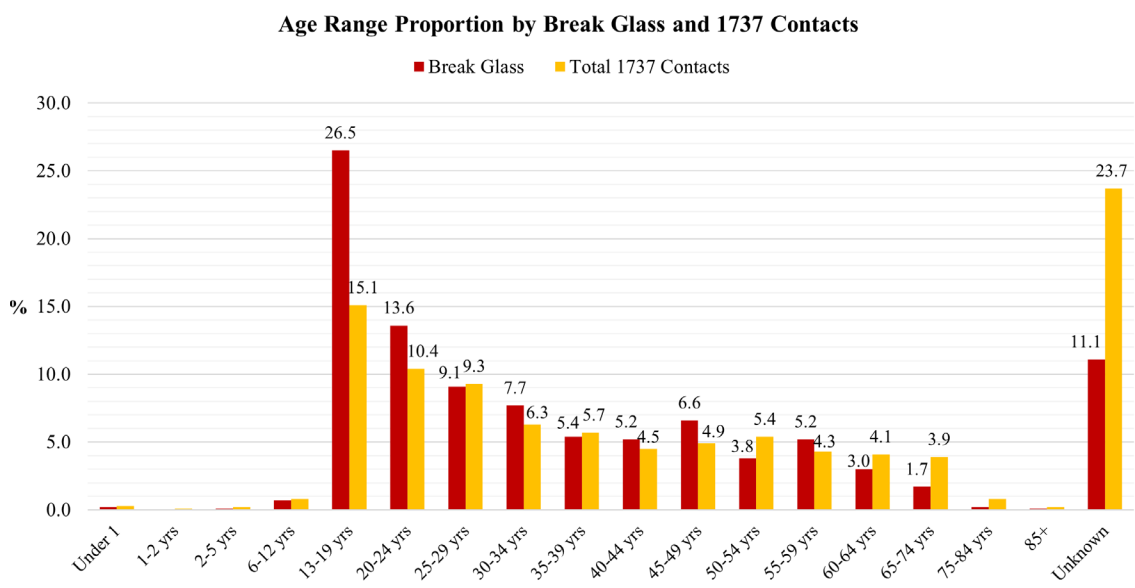
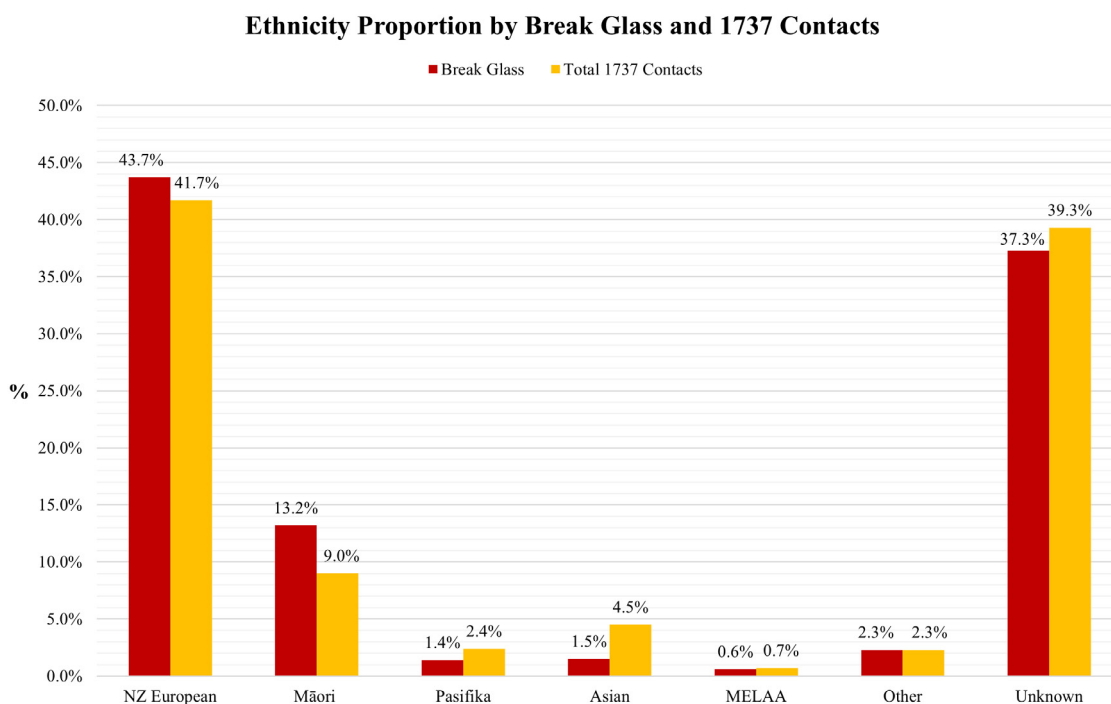
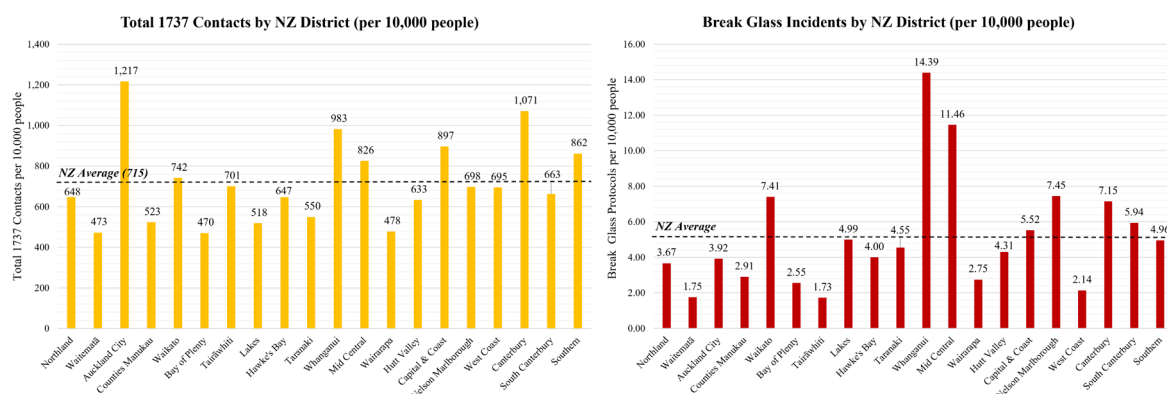


Figure 5: Bar chart representing the ethnicity proportion for the Break Glass incidents and total answered 1737 Need to Talk contacts. See Appendix Table 5.



MELAA = Middle Eastern, Latin American and African.

Figure 6: The district locality of Break Glass incidents (red) and total 1737 Contacts (yellow) per 10,000 people to account for different population sizes (2017–2022).¹⁴ The New Zealand average per 10,000 is shown by a dashed line. See Appendix Table 6.



estimated increase of 0.0021 in Break Glass incidents compared to total contacts per month. The period with the highest number of at-risk contacts was seen in 2022, with 952 Break Glass incidents (30.8% of the total).

Break Glass incidents by gender

There was a significant difference in gender proportions for 1737 Need to Talk contact rates vs Break Glass incidents ($p < 0.001$; Figure 3, Appendix Table 2 and Appendix Table 3). There is an over-representation of females in contacts where the Break Glass procedures were initiated: of the total 3,089 Break Glass procedures followed, 1,978 (64.0%) were as a result of calls from female service users (whereas females accounted for 53.7% of 1737 Need to Talk contacts), 691 (22.4%) were from males (males accounted for 25.6% of 1737 Need to Talk contacts) and 48 (1.6%) were from service users who identify as gender diverse (overall, 1.1% of 1737 Need to Talk contacts identify as gender diverse) ($p < 0.05$; Figure 3 and Appendix Table 2).

Break Glass incidents by age group

The highest number of Break Glass incidents were regarding 13–19-year-old service users with 819 (26.5%) incidents, followed by 20–24-year-olds with 419 (13.6%) incidents (Figure 4; Appendix Table 4). While 13–19-year-olds account for 15.1% of contacts (the highest of all age groups), they still have a significantly higher proportion of Break Glass procedures initiated (26.5%; $p < 0.001$). Significant over-representation in Break Glass procedures was also found for 20–24-year-olds ($p < 0.001$), 30–34-year-olds ($p < 0.01$), 45–49-year-

olds ($p < 0.001$) and 55–59-year-olds ($p < 0.05$). Interestingly, 82.4% of youth under 20 contacted the service through text messaging, compared to 45.0% of service users aged between 20 and 64 years and only 7.5% of those aged 65 and older.

Break Glass incidents by ethnicity

A significantly higher proportion of Break Glass incidents were observed compared with their 1737 Need to Talk contact proportion for NZ European (43.7% compared to 41.7%; $p < 0.05$) and Māori (13.2% compared to 9.0%; $p < 0.001$) ethnic groups (Figure 5). There is a large proportion of unknown service users (>37%; Figure 5).

Break Glass incidents by New Zealand district

There were regional differences in the number of 1737 Need to Talk contacts during the study period (Figure 6, Appendix Table 6). The New Zealand national average was 714.7 contacts per 10,000 people, with Auckland city (1,216.9), Canterbury (1,071.1), Capital & Coast (896.8), Mid-Central (826.0), Southern (861.8) and Whanganui (982.7) all reaching levels significantly above the national average ($p < 0.05$; Figure 6, Appendix Table 6). Lower utilisation of the 1737 Need to Talk service compared to the national average was observed in Bay of Plenty (470.4), Counties Manukau (522.8), Lakes (518.1), Taranaki (550.0), Waikato (478.4), and Waitematā (472.6) ($p < 0.05$; Figure 6, Appendix Table 6). While one of the main urban centres—Auckland city—had the highest utilisation (1.7 times the national average use per 10,000 people), the two other regions covering the Auckland region had below average utilisation

(Counties Manukau and Waitematā).

There were also regional differences in the number of Break Glass procedures followed (Figure 6, Appendix Table 6). Whanganui and MidCentral districts (which border each other) had the highest number of Break Glass incidents per capita, with 14.39 and 11.46 per 10,000 people, respectively. From 1737 Need to Talk contacts per capita, the districts with the highest contacts were Auckland city and Canterbury, with 1,216.9 and 1,071.1 contacts (per 10,000 people), respectively. The Whanganui, MidCentral, Nelson Marlborough, Waikato and Canterbury districts were statistically higher than the New Zealand average of 5.18 Break Glass incidents per 10,000 people ($p < 0.05$; Figure 6). Conversely, Bay of Plenty, Counties Manukau, Northland, Tairāwhiti, Wairarapa, Waitematā and West Coast all had significantly lower rates of Break Glass incidents per 10,000 people than the New Zealand average ($p < 0.05$; Figure 6).

Break Glass incident data were compared with New Zealand district deprivation data.¹⁴ Linear regression analysis revealed no significant relationship between New Zealand deprivation ranking and 1737 Need to Talk utilisation ($R^2 = 0.063$) or activation of the Break Glass procedures ($R^2 = 0.015$) (Appendix Table 7).

Discussion

Between 2017 and 2022, there were 719,904 contacts to the free 1737 Need to Talk service, 3,089 of which were from at-risk service users defined as the application of the Break Glass procedures (accounting for less than 0.5% of 1737 Need to Talk contacts). The Break Glass incidents have remained relatively stable over this time, despite fluctuations in overall demand for the 1737 Need to Talk service. Service users most at risk (activating the Break Glass procedures) were found to be of the female gender, in the 13–19-year-old age group, and those residing in Whanganui and MidCentral districts.

Our data suggest that there has been an increase in the number of service users presenting to the 1737 Need to Talk telehealth service. Specific peaks in contacts to the 1737 Need to Talk telehealth service correlate with significant events in New Zealand at the time. On 25 March 2020 and 17 August 2021, New Zealand went into a Level 4 COVID-19 lockdown (the most restrictive) where only essential workers could travel to work, and New Zealanders were required to remain

at home.¹⁶ Other significant events correlating with a prominent peak in contacts include the Christchurch terrorist attack on 15 March 2019,¹⁷ and the terrorist attack in September 2021 in Auckland.¹⁸ Our findings suggest that New Zealanders engage with freely available mental health support in times of significant need. The 1737 Need to Talk telehealth service offers the advantage of being free and available 24/7 by text or call. While in-person consultations can pick up on non-verbal cues and may be preferred by some service users, they can also be daunting for those who find it challenging to speak to someone (in-person), and potentially financially prohibitive and challenging to access.¹⁹ The year-by-year increase in the number of people reaching out to 1737 Need to Talk could in part reflect the increasing awareness of the service, in particular in response to the widespread advertising of the service following the Christchurch mosque terrorist attack and through the COVID-19 lockdowns.^{16–18,20} Our data suggest that there has been a small growth in the number of service users presenting at risk over the past 5 years and 7 months.

Females were significantly over-represented in Break Glass incident data. The utilisation of the Break Glass procedure is consistent with New Zealand data showing that there was a 132% increase in self-harm hospitalisations from 2016 to 2021, with females comprising 78% of these hospitalisations in 2021.²¹ The over-representation of females in the Break Glass cohort is consistent with research demonstrating that females are at increased risk of mental distress.²² Additionally, males are also less likely to reach out for mental health support when in need.²³

Māori and NZ European ethnic groups were disproportionately over-represented in Break Glass incidents compared with all contacts to the 1737 Need to Talk telehealth service. However, caution should be given due to the large proportion of unknown ethnicity data and the relatively small number of Break Glass events.

There were significant variations in the utilisation of the 1737 Need to Talk service across New Zealand. Further research is needed to determine whether these fluctuations reflect differing mental health demand, or whether the communities are as informed about the availability of the 1737 Need to Talk service. Concerningly, Whanganui and MidCentral, neighbouring districts, have rates more than double the New Zealand average for Break Glass (2.8 and 2.2 times, respectively). No

significant correlations could be found with New Zealand Index of Deprivation (NZDep) or suicide data. This discrepancy suggests that suicide risk is not the main or only factor contributing to a Break Glass procedure through the 1737 Need to Talk service. One theory is that this could be due to the high rates of family violence in these regions, with one in 10 calls for help to the police concerning family violence reported for Whanganui.²⁴ It is, however, likely that there are multiple factors that contribute to these Break Glass district data.

Adolescents (13–19 years old) are disproportionately represented in this data as presenting with serious risk (i.e., Break Glass), at almost double the proportion of the next highest age group of young adults (20–24-year-olds). This youngest age group preferentially reaches out by text, a medium that is used increasingly as a tool for delivering mental health support and services to young people.²⁵ The increased complexity through text messaging could be reflected in the high number of Break Glass incidents observed for this age group. Adolescents have the highest rates of first onset of several mental disorders, including obsessive compulsive disorder (14.5 years), eating disorders (15.5 years), anxiety (5.5 years and 15.5 years) and substance disorders (19.5 years). Schizophrenia and mood and personality disorder onset peak slightly later at 20.5 years old; these mental disorders correlate with critical brain development stages.²⁶ This study was unable to record the proportion of LGBTQIA+, a group with high rates of mental illnesses.²⁷

Since 2012, the mental health needs of New Zealand adolescents have shown significant increase across all demographics, particularly females, Māori, Pacific peoples and Asian ethnicities, and those residing in areas of high deprivation.²⁸ International literature has also shown significant increases in the number of mental health concerns for youth (12–17 years) and young adults (18–25 years), especially in females.^{29,30}

Limitations

Limitations of this research include the secondary use of clinical data collected primarily for continuity of care and clinical audit. The use of prioritised ethnicity data—where only a single ethnicity is counted, may under-represent some ethnic groups. Where text messaging is concerned, one contact involves multiple text messages back and forth, meaning each message only results in multiple contacts if they occur on different occasions. Individual contacts refer to the number of (unique) individuals using the service. This research does not detail the specific symptoms that triggered a Break Glass incident. As these data values are relatively low, due to the high proportion of missing data for some user characteristics as a result of the anonymity of service users included in this research, these results should be interpreted with caution.

Conclusion

This study has detailed the monthly trends and demographics of service users who contacted the all-hours, freely available 1737 Need to Talk service (between 2017 and 2022) and those users deemed most at risk through the Break Glass procedure. The number of Break Glass incidents has remained consistent, whereas contacts through the service appear to have plateaued towards the end of the analysis period. This research identified the most at-risk service users in New Zealand for each demographic: the female gender, the 13–19-year-old age group, and the Whanganui and MidCentral districts. This research supports the need for ongoing mental health support for these at-risk demographics to prevent increases in Break Glass incidents. Whakarongorau Aotearoa leverages technology to provide the safe, easily accessed 1737 Need to Talk service in an increasingly complex environment when the workforce is stretched and more New Zealanders are seeking support.

COMPETING INTERESTS

This article uses Whakarongorau Aotearoa data. Several authors of this article are employees of Whakarongorau Aotearoa (as stated in the author's information).

DC: Co-opted member of NZ National Committee, RANZCP (Tū Akaakaroa); Board member/Deputy Chair Safe Man Safe Family trust.

VT: Deputy Chair of the Australasian College of Paramedicine's Research Advisory Committee.

RL: Chair of NZ Telehealth Forum.

AUTHOR INFORMATION

Miriama K Wilson: Research Officer, Paramedicine Research Unit, Auckland University of Technology, Auckland, New Zealand.

Dr Fiona Pienaar: Senior Clinical Advisor, Whakarongorau Aotearoa | New Zealand Telehealth Services, Auckland, New Zealand.

Dr Ruth Large: Chief Clinical Officer, Whakarongorau Aotearoa | New Zealand Telehealth Services, Auckland, New Zealand.

Dr David Codyre: Clinical Lead, Mental Health & Addictions, Whakarongorau Aotearoa | New Zealand Telehealth Services, Auckland, New Zealand.

Dr Verity F Todd: Senior Lecturer, Paramedicine Research Unit, Department of Paramedicine, Auckland University of Technology, Auckland, New Zealand.

CORRESPONDING AUTHOR

Dr Fiona Pienaar: Senior Clinical Advisor, Whakarongorau Aotearoa | New Zealand Telehealth Services, Auckland, New Zealand; PO Box 9980, Newmarket, Auckland 1149, New Zealand.
E: fiona.pienaar@whakarongorau.nz

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Appendix

Appendix Table 1: 1737 SMS, calls, total offered contacts and Break Glass protocols applied by month and year (2017–2022). The total offered contacts data includes all calls, regardless of whether they were answered or abandoned.

Date	SMS	Calls	Total	Break Glass	Proportion of Break Glass procedures (%)
Jun 2017	85	202	287	0	0.00
Jul 2017	915	891	1,806	10	0.55
Aug 2017	775	965	1,740	20	1.15
Sep 2017	910	1,086	1,996	7	0.35
Oct 2017	2,035	1,488	3,523	15	0.43
Nov 2017	1,703	1,577	3,280	18	0.55
Dec 2017	1,777	2,009	3,786	12	0.32
Jan 2018	1,964	2,737	4,701	14	0.30
Feb 2018	1,840	2,874	4,714	21	0.45
Mar 2018	2,207	3,300	5,507	25	0.45
Apr 2018	1,920	3,217	5,137	24	0.47
May 2018	2,545	3,842	6,387	23	0.36
Jun 2018	2,256	3,592	5,848	18	0.31
Jul 2018	2,254	3,477	5,731	25	0.44
Aug 2018	2,485	4,190	6,675	20	0.30
Sep 2018	2,541	4,688	7,229	19	0.26
Oct 2018	2,867	5,364	8,231	25	0.30
Nov 2018	2,424	5,092	7,516	23	0.31
Dec 2018	3,992	4,527	8,519	38	0.45
Jan 2019	2,641	4,530	7,171	37	0.52
Feb 2019	2,733	4,580	7,313	43	0.59
Mar 2019	5,386	7,376	12,762	47	0.37
Apr 2019	3,343	6,020	9,363	31	0.33
May 2019	6,958	6,761	13,719	38	0.28
Jun 2019	5,233	6,054	11,287	42	0.37
Jul 2019	4,371	5,839	10,210	34	0.33
Aug 2019	5,081	5,837	10,918	42	0.38

Appendix Table 1 (continued): 1737 SMS, calls, total offered contacts and Break Glass protocols applied by month and year (2017–2022). The total offered contacts data includes all calls, regardless of whether they were answered or abandoned.

Date	SMS	Calls	Total	Break Glass	Proportion of Break Glass procedures (%)
Sep 2019	5,424	6,091	11,515	49	0.43
Oct 2019	4,797	6,390	11,187	52	0.46
Nov 2019	4,678	6,146	10,824	44	0.41
Dec 2019	4,458	7,286	11,744	38	0.32
Jan 2020	4,451	6,886	11,337	53	0.47
Feb 2020	4,072	5,958	10,030	42	0.42
Mar 2020	7,024	8,656	15,680	47	0.30
Apr 2020	7,445	10,254	17,699	36	0.20
May 2020	5,752	9,540	15,292	35	0.23
Jun 2020	5,800	8,526	14,326	34	0.24
Jul 2020	5,049	8,136	13,185	40	0.30
Aug 2020	6,241	8,599	14,840	46	0.31
Sep 2020	5,704	7,709	13,413	34	0.25
Oct 2020	5,567	7,713	13,280	56	0.42
Nov 2020	5,259	7,264	12,523	66	0.53
Dec 2020	5,238	6,502	11,740	77	0.66
Jan 2021	5,231	7,279	12,510	75	0.60
Feb 2021	5,715	6,936	12,651	66	0.52
Mar 2021	6,806	8,084	14,890	71	0.48
Apr 2021	6,138	7,739	13,877	65	0.47
May 2021	5,869	7,628	13,497	54	0.40
Jun 2021	5,972	7,189	13,161	64	0.49
Jul 2021	5,870	7,448	13,318	64	0.48
Aug 2021	7,641	8,445	16,086	67	0.42
Sep 2021	7,802	9,238	17,040	54	0.32
Oct 2021	6,684	8,979	15,663	42	0.27
Nov 2021	5,669	8,642	14,311	44	0.31
Dec 2021	5,126	8,402	13,528	51	0.38
Jan 2022	5,072	8,211	13,283	55	0.41

Appendix Table 1 (continued): 1737 SMS, calls, total offered contacts and Break Glass protocols applied by month and year (2017–2022). The total offered contacts data includes all calls, regardless of whether they were answered or abandoned.

Date	SMS	Calls	Total	Break Glass	Proportion of Break Glass procedures (%)
Feb 2022	5,235	7,226	12,461	71	0.57
Mar 2022	5,658	7,802	13,460	68	0.51
Apr 2022	5,230	7,408	12,638	85	0.67
May 2022	5,652	8,375	14,027	81	0.58
Jun 2022	5,168	7,943	13,111	88	0.67
Jul 2022	5,299	8,814	14,113	77	0.55
Aug 2022	5,677	9,621	15,298	98	0.64
Sep 2022	5,188	9,072	14,260	84	0.59
Oct 2022	5,603	9,122	14,725	76	0.52
Nov 2022	4,990	9,096	14,086	71	0.50
Dec 2022	5,042	8,897	13,939	98	0.70
Total	308,875	421,367	719,904	3,089	0.43

Appendix Table 2: Gender proportion of Break Glass protocols applied compared to a total of 1737 answered contacts between 2017–2022 (abandoned calls are excluded). Using the Chi-squared test, p-values below 0.05 are deemed statistically significant for differences in proportions.

Gender	Break Glass	%	Answered 1737 contacts	%	P-value
Female	1,978	64.0	319,592	53.7	0.0000
Male	691	22.4	152,680	25.6	0.0000
Other	48	1.6	6,672	1.1	0.0282
Unknown	372	12.0	116,537	19.6	0.0000
Total	3,089	100	595,481	100	

Appendix Table 3: The proportion of all answered 1737 contacts that resulted in a Break Glass incident stratified by gender.

Gender	Break Glass	Answered 1737 contacts	Proportion Break Glass (%)
Female	1,978	319,592	0.62%
Male	691	152,680	0.45%
Other	48	6,672	0.72%
Unknown	372	116,537	0.32%
Total	3,089	595,481	0.52%

There is a significant difference in the gender distribution between the Break Glass and the 1737 contacts ($p < 0.001$).

Appendix Table 4: Age group proportion of Break Glass protocols applied compared to total answered 1737 contacts (2017–2022). Using the Chi-squared test, p-values below 0.05 are deemed statistically significant for differences in proportions.

Age group	Break Glass	%	1737 contacts	%	P-value
Under 1	6	0.2%	1,588	0.3	0.5457
1–2	0	0.0%	554	0.1	0.1617
2–5	2	0.1%	1,276	0.2	0.1095
6–12	23	0.7%	4,790	0.8	0.7869
13–19	819	26.5%	89,884	15.1	0.0000
20–24	419	13.6%	61,822	10.4	0.0000
25–29	280	9.1%	55,453	9.3	0.6586
30–34	238	7.7%	37,369	6.3	0.0012
35–39	166	5.4%	34,229	5.7	0.3939
40–44	160	5.2%	26,814	4.5	0.07756
45–49	203	6.6%	29,077	4.9	0.0000
50–54	117	3.8%	32,056	5.4	0.0000
55–59	161	5.2%	25,872	4.3	0.0207
60–64	92	3.0%	24,452	4.1	0.0019
65–74	51	1.7%	23,040	3.9	0.0000
75–84	6	0.2%	4,816	0.8	0.0000
85+	2	0.1%	965	0.2	0.2633
Unknown	344	11.1%	141,424	23.7	0.0000
Total	3,089	100	595,481	100	

Appendix Table 5: Ethnicity proportion of Break Glass protocols applied compared to total answered 1737 contacts (2017–2022). Using the Chi-squared test, p-values below 0.05 are deemed statistically significant for differences in proportions. Prioritised ethnicity is used in accordance with data collection in the New Zealand health and disability sector, where only one prioritised ethnic group is recorded. This avoids issues including multiple data points for one service user.¹

Ethnicity	Break Glass	%	Answered 1737 contacts	%	P-value
NZ European	1,351	43.7%	248,393	41.7%	0.0241
Māori	409	13.2%	53,785	9.0%	0.0000
Pacific peoples	44	1.4%	14,351	2.4%	0.0005
Asian	45	1.5%	26,793	4.5%	0.0000
MELAA	17	0.6%	4,456	0.7%	0.2422
Other	70	2.3%	13,617	2.3%	0.9871
Unknown	1,153	37.3%	234,086	39.3%	0.0255
Total	3,089	100%	595,481	100%	

MELAA = Middle Eastern, Latin American and African.

Appendix Table 6: New Zealand district proportion of Break Glass protocols applied (per 10,000) compared to total 1737 contacts (per 10,000), population size² and suspected suicide rates per 100,000.³ Using a t-Test, p-values below 0.05 are deemed statistically significant, meaning a significant difference from the New Zealand average per 10,000 people (5.18 for the Break Glass contacts and 714.72 for total 1737 contacts, respectively).⁴

DHB	Break Glass (no.)	Break Glass (per 10,000 people)	Comparison to Break Glass national average (P-value)	Total 1737 contacts (per 10,000 people)	Comparison to total contacts national average (P-value)	District population size (2022) ²	Suspected suicide rates per 100,000 (2017–2021) ³
National average	125	5.18	-	714.72	-	-	14.67
Auckland city	189	3.92	0.0964	1,216.92	0.0000	481,600	9.10
Bay of Plenty	70	2.55	0.0017	470.44	0.0000	274,700	13.98
Canterbury	423	7.15	0.0129	1,071.09	0.0000	591,500	12.50
Capital & Coast	178	5.52	0.6392	896.84	0.0009	322,300	10.02
Counties Manukau	176	2.91	0.0052	522.79	0.0006	605,100	9.14
Hawke's Bay	73	4.00	0.1179	647.21	0.1612	182,600	18.56
Hutt Valley	69	4.31	0.2423	633.46	0.0954	160,200	8.68
Lakes	59	4.99	0.797	518.10	0.0004	118,200	15.78
MidCentral	218	11.46	0.0000	825.96	0.0267	190,300	15.68
Nelson Marlborough	123	7.45	0.0051	698.00	0.722	165,000	10.74
Northland	74	3.67	0.0496	648.04	0.1661	201,500	20.52
South Canterbury	37	5.94	0.3021	662.76	0.2758	62,300	14.55
Southern	174	4.96	0.7655	861.77	0.0050	350,500	14.62
Tairāwhiti	9	1.73	0.0001	700.77	0.7665	52,100	25.70

Appendix Table 6 (continued): New Zealand district proportion of Break Glass protocols applied (per 10,000) compared to total 1737 contacts (per 10,000), population size² and suspected suicide rates per 100,000.³ Using a t-Test, p-values below 0.05 are deemed statistically significant, meaning a significant difference from the New Zealand average per 10,000 people (5.18 for the Break Glass contacts and 714.72 for total 1737 contacts, respectively).⁴

DHB	Break Glass (no.)	Break Glass (per 10,000 people)	Comparison to Break Glass national average (P-value)	Total 1737 contacts (per 10,000 people)	Comparison to total contacts national average (P-value)	District population size (2022) ²	Suspected suicide rates per 100,000 (2017–2021) ³
Taranaki	58	4.55	0.3936	549.96	0.0021	127,500	12.10
Waikato	335	7.41	0.0058	741.73	0.5666	451,900	12.76
Wairarapa	14	2.75	0.0032	478.43	0.0000	51,000	18.33
Waitematā	111	1.75	0.0001	472.63	0.0000	633,500	10.02
West Coast	7	2.14	0.0005	694.80	0.6719	32,700	20.17
Whanganui	100	14.39	0.0000	982.73	0.0000	69,500	20.36

DHB = district health board.

Appendix Table 7: The district deprivation ranking by each social category using the New Zealand Index of Multiple Deprivation.⁵ Each ranking is out of 20, making 20 the highest deprivation and 1 the lowest.

District health board region	NZ Deprivation Index Ranking ⁵	Break Glass (per 10,000 people)	Total 1737 contacts (per 10,000 people)
Auckland city	5	3.92	1,216.92
Bay of Plenty	13	2.55	470.44
Canterbury	3	7.15	1,071.09
Capital & Coast	1	5.52	896.84
Counties Manukau	8	2.91	522.79
Hawke's Bay	10	4.00	647.21
Hutt Valley	9	4.31	633.46
Lakes	14	4.99	518.10
MidCentral	15	11.46	825.96
Nelson Marlborough	7	7.45	698.00
Northland	19	3.67	648.04
South Canterbury	6	5.94	662.76
Southern	2	4.96	861.77
Tairāwhiti	17	1.73	700.77
Taranaki	11	4.55	549.96
Waikato	16	7.41	741.73
Wairarapa	12	2.75	478.43
Waitematā	4	1.75	472.63
West Coast	20	2.14	694.80
Whanganui	18	14.39	982.73

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