

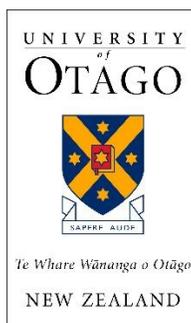
# Healthy playgrounds in New Zealand local government areas?

## An updated 2017-2018 survey of smokefree signage and drinking fountains



Nick Wilson, George Thomson  
Department of Public Health, University of Otago,  
Wellington, New Zealand

July 2018



## Abstract

**Background:** Although there is global growth in outdoor smokefree areas, little is known about the associated smokefree signage. Similarly, there are inadequate data on the distribution of drinking water fountains – despite these being a component of addressing the obesogenic environment. We aimed to study these issues for children’s playgrounds in local government areas of New Zealand (NZ).

**Methods:** We randomly selected children’s playgrounds in 19 contiguous local government areas in the lower North Island of NZ. To update and compare to previous 2016 and early 2017 data, a new sample of playgrounds was taken from each territorial authority (TA). This new sample was comprised of, either two playgrounds per TA or a 5% sample, whichever was larger. Field data were collected in late 2017 and early 2018, on smokefree signage and on drinking water fountains, using a range of on-site photos and sign size measurement.

**Results:** Out of the 41 playgrounds studied, only 56% (23/41; 95%CI: 41% to 70%) had any smokefree signage within 10 m of the playground equipment. This compared to 44% (95%CI: 33%–57%) in 2016. We found 42 signs, an *average* of 2 per playground that had signs. For all 41 playgrounds, the mean number of such signs was 1.0 per playground (range = 0 to 5, median = 1.0) compared to 0.8 per playground (range: 0 to 6) in 2016.

Out of the total of 42 signs, the largest ones in each playground were a modest size (median = 1000 cm<sup>2</sup>; compared to 600 cm<sup>2</sup> in 2016). At the local government level there were 26% (5/19) of TAs with no smokefree signage in any of the sampled playgrounds, compared to 29% in 2016.

Drinking fountains were even less frequent at 20% (8/41) of playgrounds (95%CI: 10% to 34%), with a mean of only 0.2 fountains per playground. This was the same as the 20% in our previous survey. At the TA level only 37% (7/19) had any drinking fountains in the sampled playgrounds (compared to 53% in the earlier sample) and only one TA had fountains in all its the sampled playgrounds.

**Conclusions:** In this random sample of children’s playgrounds, the presence of smokefree signage and drinking fountains was suboptimal. There may have been a slight improvement in signage from the previous sample (but not statistically significant), but no positive change for fountains. The lack is particularly problematic, given the NZ Smokefree 2025 goal and the growing problems of childhood obesity and heat waves from climate change. There may be a need for central government to legislate on these matters.

## Background

In New Zealand, outdoor smokefree areas appear to be expanding,<sup>1,2</sup> which is consistent with the direction of the New Zealand Government's smokefree goal for 2025.<sup>3</sup> However, many deficits in outdoor smokefree signage exist, including at schools,<sup>4</sup> children's playgrounds,<sup>5,6</sup> sports grounds and racecourses,<sup>7</sup> and various other outdoor settings.<sup>8</sup> There is also evidence of a lack of local government commitment to the country's smokefree goal.<sup>9</sup>

Similarly, for children's playgrounds, there seem to be gaps in terms of another health promoting feature: the presence of drinking water fountains.<sup>10,11</sup> This is despite the importance of such fountains as an alternative to obesity-promoting sugary drinks and to help during heat waves (which are increasing with climate change).

Therefore, in this study we aimed to expand on previous work to provide a more updated picture of both the smokefree signage and drinking fountains in children's playgrounds.



## Methods

For the smokefree signage research we took the same approach as per previous work which had collected data in September – December 2016.<sup>6</sup> That is, we randomly sampled playgrounds in the same contiguous Territorial Authorities (TA) in the lower North Island (albeit with some minor differences – see Table). Where the randomly selected playground was the same as in the former study<sup>6</sup> – it was replaced with a new randomly selected playground. Two playgrounds were sampled in each TA, or we took a 5% sample whichever was larger (ie, this meant a selection of five playgrounds for the Wellington City Council area).

Field work was over the period November 2017 to January 2018. At the same time as field work for the smokefree signs, we also examined playgrounds for the presence of drinking fountains, previously surveyed between December 2016 and May 2017. For both signs and fountains, the same data collection methods as per our previous studies were used, including a range of on-site photos and sign size measurement.<sup>10</sup>



## Results

We were able to sample 19 local government areas in the lower half of the North Island (one small local government area [Carterton District Council] had no additional playgrounds to sample relative to our earlier study).

Out of the 41 playgrounds studied, only 56.1% (23/41; 95% CI: 41.0% to 70.1%) had any smokefree signage within 10 m of the playground equipment (see Table). This compared to 44% (95% CI: 33%–57%) in 2016.

The mean number of such signs was 1.0 per playground (range = 0 to 5, median = 1.0) compared to 0.8 per playground (range: 0 to 6) in 2016. Out of the total of 42 signs we measured the largest ones in each playground with these having a size that varied greatly from 385 cm<sup>2</sup> up to 2928 cm<sup>2</sup> (mean = 1079 cm<sup>2</sup>, median = 1000 cm<sup>2</sup>; ie, as per a 32 × 32 cm rectangle). The median size in 2016 was 600 cm<sup>2</sup>.

Of the 32 playgrounds that were embedded in a larger park, only 34.4% (11/32) had smokefree signage on the main path to the playground. At the local government level there were 26.3% (5/19) of TAs with no smokefree signage in any of the sampled playgrounds, compared to 29% in 2016.

Drinking fountains were even less frequent at 19.5% (8/41) of playgrounds (95% CI: 10.2% to 34.0%). This was approximately the same as in our previous survey, and gave a mean of only 0.2 drinking fountains per playground (median = 0, range = 0-1). Nevertheless, all fountains were operational, including those with multiple taps. At the TA level only 36.8% (7/19) had any drinking fountains in the sampled playgrounds (compared to 53% in the earlier sample) and only one TA had fountains in all its sampled playgrounds.

## Discussion

This survey identified a relative lack of smokefree signage in children’s playgrounds in New Zealand, albeit probably slightly better than the previous survey conducted in September – December 2016 (which found such signs in 44% of playgrounds (95% CI: 33%-57%)).<sup>6</sup> Even with a mean density of only one sign per playground in this latest study – this level seems inadequate, given that people can often walk to a playground from many different directions. The sign size might also be considered suboptimal, given that the median dimensions of the largest signs (32 x 32 cm<sup>2</sup>) may not be readily noticeable from distances of 50 metres or more. All these issues suggest that smokefree signage for playgrounds is a rather neglected component of New Zealand’s moves towards the Smokefree 2025 goal.

The results for drinking fountains are even more problematic, with the prevalence of only 20% of children’s playgrounds. But this poor result is consistent with previous surveys ie, at 20% for working drinking fountains in playgrounds in similar lower North Island TAs<sup>10</sup> and 6% of playgrounds for Wellington City.<sup>11</sup> For Auckland, one estimate was that only 5% of parks (183/3695), had drinking fountains.<sup>12</sup> In Taranaki, a recent survey found drinking fountains in only “one in five public parks, playgrounds and major walkways”.<sup>13</sup>

For both these topics, smokefree signage and drinking fountains, it appears that local government initiatives are not sufficient. This would suggest a potential role for central government to set legislative requirements (eg, for a mandatory number of smokefree signs per playground and for all children’s playgrounds to have drinking fountains). But in the meantime, it would seem reasonable to track progress by repeating surveys of such playgrounds every few years.

**Acknowledgements:** Both authors are members of the ASPIRE2025 Research Group and they thank their colleagues for support in pursuing the topic of smokefree outdoor areas.

**Competing interests:** Nil.

**Funding:** There was no funding for this study.



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**Table: Key results for the 19 Territorial Authorities in the lower North Island of New Zealand: Smokefree signage and drinking water fountains in children’s playgrounds (surveyed in late 2017 and early 2018)**

<b>Territorial Authority (DC = District Council)</b>	<b>Town/suburb</b>	<b>Park name or street address of the playground</b>	<b>Smokefree signs (number)</b>	<b>Drinking fountains (number)</b>
Central Hawke's Bay DC	Porangahau	White Domain, Dundas St	0	0
Central Hawke's Bay DC	Waipawa	Nelly Jull Park	0	1
Hastings DC	Hastings	Civic Square	1	1
Hastings DC	Hastings	William Nelson Park	1	1
Horowhenua DC	Foxton Beach	Holben Reserve	2	0
Horowhenua DC	Levin	Adventure Park (Oxford St)	2	0
Kapiti Coast DC	Otaki	Tasman Rd Reserve, 30 Tasman Rd	1	0
Kapiti Coast DC	Paraparaumu	Kaitawa Res, Kaitawa Cres	0	0
Lower Hutt City Council	Lower Hutt	105 Randwick Cres	0	0
Lower Hutt City Council	Lower Hutt	48 Maungaraki	0	0
Manawatu DC	Feilding	Fraser Park	0	0
Manawatu DC	Feilding	Ursula Drive, Corner Vista Drive	0	0
Masterton DC	Masterton	Henley Lake	0	0
Masterton DC	Masterton	Skatepark beside QEII Park	0	1
Napier City Council	Napier	Forward St/Osier Rd	2	0
Napier City Council	Napier/Bay View	Petane Domain	1	0
Palmerston North City Council	Palmerston North	Totaranui Park	4	0
Palmerston North City Council	Palmerston North	Colquhoun Park	1	0
Porirua City Council	Porirua / Plimmerton	Victory Park, Sunset St	1	0
Porirua City Council	Porirua / Plimmerton	Karehana Park, off Airlie Rd	2	0
Rangitikei DC	Bulls	Domain	0	0
Rangitikei DC	Mangaweka	Ruahine Rd, (in the camp)	0	0
South Taranaki DC	Hawera	Kind Edward Park	0	1
South Taranaki DC	Waverley	Chester St	1	0
South Wairarapa DC	Featherston	Skatepark (50m south of the playground)	0	0
South Wairarapa DC	Greytown	Soldiers Memorial Park	3	1
Stratford DC	Stratford	Austin Reserve	1	0

<b>Territorial Authority (DC = District Council)</b>	<b>Town/suburb</b>	<b>Park name or street address of the playground</b>	<b>Smokefree signs (number)</b>	<b>Drinking fountains (number)</b>
Stratford DC	Stratford	Whangamomona	0	0
Tararua DC	Dannevirke	Domain (SH2)	1	1
Tararua DC	Pahiatua	Harvard Park	2	0
Upper Hutt City Council	Upper Hutt	Maidstone Max	4	0
Upper Hutt City Council	Upper Hutt	46 Ward St	0	0
Wairoa DC	Raupunga	By main road	0	0
Wairoa DC	Wairoa	Marine Parade	1	0
Wellington City Council	Johnsonville	John Walker (34 Branscombe St)	0	0
Wellington City Council	Tawa	Lyndhurst Park (end of Park Ave)	2	0
Wellington City Council	Wellington	181 Houghton Bay Rd	5	0
Wellington City Council	Wellington	152 Breaker Bay	1	0
Wellington City Council	Woodside	Kentwood Drive Play area	0	0
Whanganui DC	Wanganui	Peat St	1	1
Whanganui DC	Wanganui	Virginia Lake Park	2	0