

# Smokefree signage at New Zealand racecourses and sports facilities with outdoor stands

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## ABSTRACT

Smokefree signage is crucial to the implementation of smokefree policies for outdoor venues and for facilitating smoking denormalisation. Such signage helps to communicate the expected norms for not smoking at venues. Therefore, we aimed to identify such signage at racecourses and sports facilities that had outdoor stands. We surveyed the entrances of 25 racecourse and 25 sport facilities with outdoor stands, across New Zealand. There were smokefree signs at the main entrances of 40% of the sports facilities with outdoor stands, and at 16% of the 25 other entrances. None of the horse/greyhound racecourses had smokefree signage at any of their entrances.

Outdoor sports facilities with stands are a potential priority area for smokefree policies, given that people can be in relatively close proximity to each other and so can be exposed to secondhand smoke. The large number of attendees at stadium-related events (up to 50,000) also suggests that making these settings smokefree may contribute to denormalising smoking, which helps quitting and reduces uptake.<sup>1,2</sup> The importance of sports within communities and within at-risk groups, coupled with the numbers of people, could provide both good 'reach' and strong impact for the intervention.

We found little research on the smokefree status of outdoor stadiums,<sup>3-6</sup> with only one study using field observation of signage,<sup>3</sup> and no relevant New Zealand research. Because there are smokefree policies for only some sports-related venues in New Zealand, and signage is crucial to the implementation of smokefree policies for outdoor venues, we aimed (i) to identify the extent and nature of smokefree signage at racecourses and sports facilities that had outdoor stands, and (ii) to pilot simple, replicable research methods for such studies. We also aimed to assess the utility of Google Street View (GSV) for studying smokefree

signage at these type of settings. There is growing evidence for the value of GSV in such studies as per a recent review.<sup>7</sup>

## Methods

Purposeful sampling was used to select sports facilities and racecourses (all having stands) from a range of urban and small town settings across different regions in New Zealand, so as to sample a wide variety of situations. We conducted field observations at 25 sports facilities (in 14 local authority areas) and 25 racecourses (April 2016 to April 2017). The sampling covered 23 out of the 67 local government districts in New Zealand (34%). The facilities were in 11 cities (over 40,000 population) and 12 small towns, from Gisborne to Southland. On these visits, we photographed any smokefree signage within 10 metres of all the entrances used by pedestrians or those driving to parking sites within the grounds. We counted the number of such signs per entrance type (main/other), and examined the signs found for the extent of the smokefree policy (stand only, or whole grounds), the placing of smokefree policies within other information, and the wording and language used.

Initial observations were made jointly by both authors to standardise methods and then by the authors separately. Both observers had previous experience in studying both smokefree<sup>8-11</sup> and alcohol signage.<sup>12</sup> So as to also test the usefulness of GSV, the same facilities were subsequently examined using GSV, with the field observations being treated as the 'gold standard' for comparisons (as per previous work<sup>8,9</sup>).

## Results

The field observations found that 40% (10/25) of this sample of sports facilities with outdoor stands had smokefree signage at their main entrances. The mean number of smokefree signs per main entrance was 0.72 (range: 0–5 signs). Only 16% of the 25 other entrances (4/25) at these facilities had smokefree signage (mean = 0.36, range 0–3). Four of these facilities were designated as smokefree throughout (ie, both grounds and stands). In two settings, the smoking restriction seemed to be about protecting the track or the artificial turf (see Figure 1 in the Appendix). Smokefree signage in Te Reo Māori was rare (see Figure 2 in the Appendix for an example).

None of the horse/greyhound racecourses (0/25) had any outdoor-place smokefree signage at any main entrances or any of the other entrances (0/14). A notice at one specified that function rooms were smokefree, but smoking was allowed outdoors (see Figure 3 in the Appendix).

The utility of GSV was poor for the smokefree signage at the main entrance of the sports facilities (eg, 10% sensitivity, albeit 93% specificity, see Table 1). The "missed" smokefree signs at main entrances on GSV were due to these being in small print, being too far away from the road or the GSV image preceding the smokefree sign being put up (ie, the GSV date stamp was always at least a year before the field observations, median: March 2015; range: December 2009 to August 2015). However, it was possible to view inside the grounds of one of the sampled facilities (in a 'footpath view' of GSV) and see smokefree signs within the seating area.

Many different sign designs were found. Of the sports facilities in 14 local authority areas, only two (in Upper Hutt and Wairoa)

used signs from the former Health Sponsorship Council as part of their signage (see Figure 2 in the Appendix). The quality of the smokefree signage varied. For instance, sometimes there were words about prohibiting smoking included among a long list of activities not permitted in the facility (eg, Figure 4 in the Appendix). There was often a stark contrast between smokefree signs and the very much larger and bolder signage prohibiting taking alcohol onto the premises at the entrances to both sports facilities and racecourses (eg, Figure 5 in the Appendix for an example regarding alcohol). The degraded surface quality of some smokefree signs may also have reduced their impact (eg, Figure 6 in the Appendix). Some signs contained ambiguous wording, for instance in Figure 7 in the Appendix "we encourage you to comply with this request".

**Table 1:** Sensitivity, specificity and predictive values of using Google Street View (GSV) relative to field observations of smokefree signage at the main entrances of the sports facilities with outdoor stands.

Performance characteristic of GSV vs field observations	Smokefree signs seen at main entrance*
True positives (number) [A]	1
True negatives (number) [B]	13
False positives (number) [C]	1**
False negatives (number) [D]	9
Total (number)	24
Sensitivity [A/(A+D)]	10%
Specificity [B/(B+C)]	93%
Positive predictive value [A/(A+C)]	50%
Negative predictive value [B/(B+D)]	59%

\*That is within 10 metres within any direction from the main entrance, with the status of hard-to-read signs being assessed in terms of the balance of probabilities (for being a smokefree sign or not). One main entrance was not visible, hence a total of 24 settings.

\*\*There is no doubt that the GSV image showed a smokefree sign in this 'false positive' case, but it was not visible in the field observations, which were used as the 'gold standard'. Probably the sign had subsequently been removed or fallen down prior to the field observations.

## Discussion

The results for this purposeful sample indicate the likely scope for the increased implementation of smokefree policies by local authorities, which typically own the sports facilities. There are also opportunities for health promoters and the wider health sector to work with horse racing clubs on smokefree policies. The introduction of a smokefree policy at the Hastings racecourse for one day of racing indicates one avenue for this.<sup>13</sup>

However, it would be more efficient and effective to amend the Smoke-Free Environments Act to require all venues with outdoor seating to be smokefree (as per the efficient and successful approach taken for smokefree school grounds),<sup>14</sup> and to require signage of minimum size and quality. One option to ensure quality would be a standard sign that is noticeable, easily comprehended and tested to ensure a positive response. As Māori are more likely to smoke than other groups, signs that

include Te Reo Māori could be considered, as some Māori may respond more positively to such signage.

The utility of GSV for studying smokefree signage at the sports facilities was poor (10% sensitivity), and substantially poorer than previous studies of smokefree signage at schools,<sup>8</sup> and at public hospital campuses.<sup>9</sup> Reasons for this are probably the legal requirement for prominent signs at school entrances and the typically large size of the signs at hospitals in New Zealand (which make them easily visible on GSV). Nevertheless, the situation for studying signs at sports facilities might improve with the expansion of the “footpath view” on GSV.

The purposeful sample means that the results cannot necessarily be generalised to all New Zealand sports facilities and racecourses with stands. We also recognise that signage at some sports facilities may also have changed during the data collection period, given the increasing interest by local governments in advancing smokefree environments.

## Appendix

**Figure 1:** Smokefree sign to protect sportsground playing surfaces.



Figure 2: Example of use of Te Reo in smokefree sign (Wairoa District Council).



Figure 3: Racecourse notice regarding smoking.

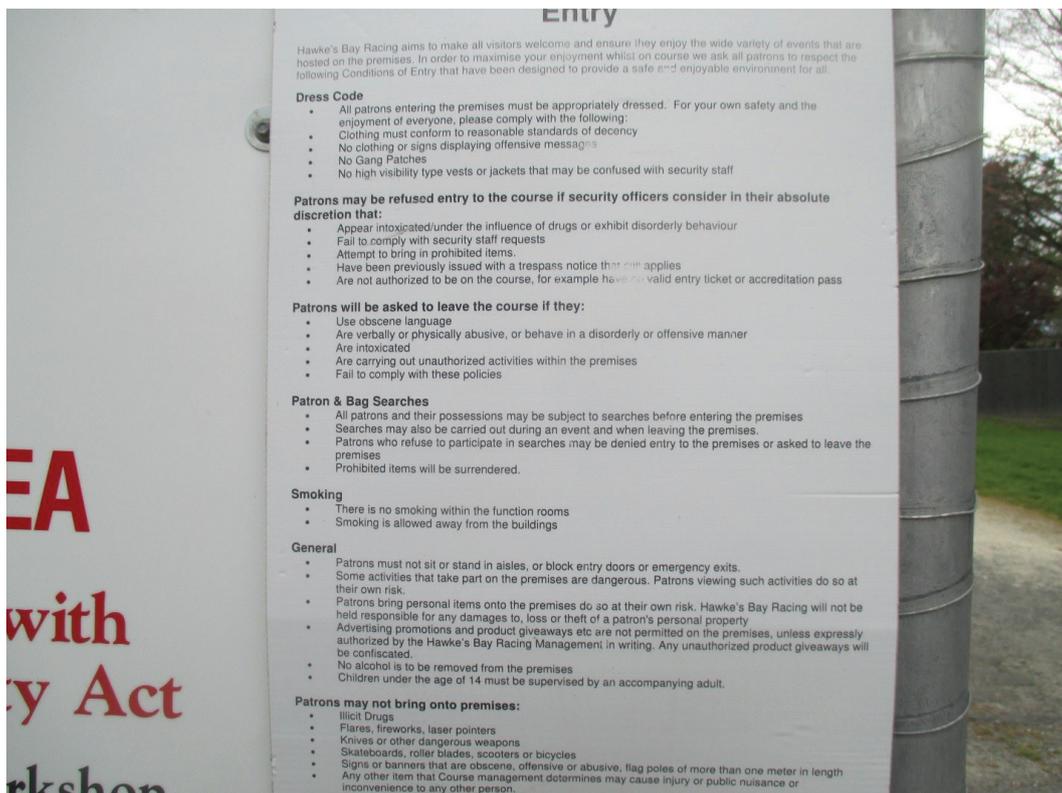


Figure 4: Example of sign that includes 'no smoking' as part of a list.



Figure 5: Example of large size of alcohol-related notice.



Figure 6: Example of poor quality smokefree sign.



Figure 7: Sign containing ambiguous wording about the smokefree status of the facility.



**Competing interests:**

Nil.

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