

National smokefree law in New Zealand improves air quality inside bars, pubs and restaurants

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Abstract

Background: We aimed to: (i) assess compliance with a new smokefree law in a range of hospitality settings; and (ii) to assess the impact of the new law by measuring air quality and making comparisons with air quality in outdoor smoking areas and with international data from hospitality settings.

Methods: We included 34 pubs, restaurants and bars, 10 transportation settings, nine other indoor settings, six outdoor smoking areas of bars and restaurants, and six other outdoor settings. These were selected using a mix of random, convenience and purposeful sampling. The number of lit cigarettes among occupants at defined time points in each venue was observed and a portable real-time aerosol monitor was used to measure fine particulate levels (PM_{2.5}).

Results: No smoking was observed during the data collection periods among over 3785 people present in the indoor venues, nor in any of the transportation settings. The levels of fine particulates were relatively low inside the bars, pubs and restaurants in the urban and rural settings (mean 30-minute level = 16 µg/m³ for 34 venues; range of mean levels for each category: 13 µg/m³ to 22 µg/m³). The results for other smokefree indoor settings (shops, offices etc) and for smokefree transportation settings (eg, buses, trains, etc) were even lower. However, some “outdoor” smoking areas attached to bars/restaurants had high levels of fine particulates, especially those that were partly enclosed (eg, up to a 30-minute mean value of 182 µg/m³ and a peak of maximum value of 284 µg/m³). The latter are far above WHO guideline levels for 24 hour exposure (ie, 25µg/m³).

Conclusion: There was very high compliance with the new national smokefree law and this was also reflected by the relatively good indoor air quality in hospitality settings (compared to the “outdoor” smoking areas and the comparable settings in countries that permit indoor smoking). Nevertheless, adopting enhanced regulations (as used in various US and Canadian jurisdictions) may be needed to address hazardous air quality in relatively enclosed “outdoor” smoking areas.

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