Exploring outdoor and indoor fine particulate concentrations in selected New Zealand restaurants – a potential for drift of secondhand smoke

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METHODS

- Observations in 8 restaurants in Wellington city
- 2 teams
- 2 portable aerosol monitors (inside vs. outside measurements near the doorway)
- Marker of secondhand smoke drift: fine particulate measurements ($PM_{2.5}$ µg/m^3)
- Other observations:
  - Nr of lit cigarettes, lit candles, cooking smoke, distance to doorway, wind speed, enclosure of outdoor area, % time doorways and windows open

RESULTS

Setting	Mean $PM_{2.5}$ (µg/m)	Min $PM_{2.5}$ (µg/m^3)	Max $PM_{2.5}$ (µg/m^3)	Total nr of patrons seen smoking (N)
Outdoor dining area				
Restaurant I	35.9	29.0	56.0	5
Restaurant II	38.3	24.0	178.0	1
Restaurant III	44.4	14.0	165.0	14
Restaurant IV	31.3	14.0	276.0	8
Restaurant V	34.5	16.0	134.0	6
Restaurant VI	75.1	33.0	159.0	9
Restaurant VII	18.0	10.0	59.0	3
Restaurant VIII	35.0	13.0	151.0	11
All of the above	***39.1***	***10.0***	***276.0***	
Indoor dining area				**Cook smoke/ lit candles**
Restaurant I	33.2	23.0	55.0	no/yes
Restaurant II	46.3	24.0	106.0	yes/no
Restaurant III	44.5	10.0	264.0	yes/yes
Restaurant IV	16.6	7.0	43.0	no/no
Restaurant V	78.2	5.0	208.0	yes/yes
Restaurant VI	91.2	68.0	137.0	no/yes
Restaurant VII	15.1	11.0	23.0	no/no
Restaurant VIII	24.9	16.0	40.0	no/yes
All of the above	***43.7***	***5.0***	***264.0***	

CONCLUSION

- Indoor air quality of restaurants compromised
- Completely or partially restricting outdoor smoking?

  - Work currently under review
  - Link to Radio NZ interview: http://www.radionz.co.nz/national/programmes/ourchangingworld/20130606