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UNIVERSITY OF NEW ZEALAND

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Environmental Health Intelligence New Zealand
Rapu Mātauranga Hauora mo te Taiao – Aotearoa

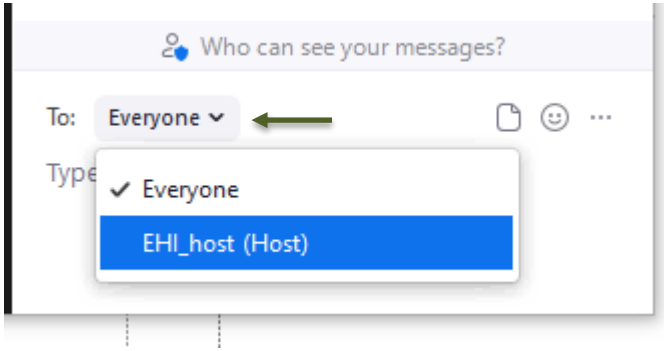
VIRTUAL STAKEHOLDER MEETING

Agenda Items

Topic	Presenter	Time
Welcome / Introduction to EHI	Patrick Hipgrave / Prof. Barry Borman	11:00
Hazardous Substances Surveillance	Shunnie Xie / Liam Kelly	11:15
Social Vulnerability Indicators & Population Vulnerability	Kylie Mason	11:25
Transitioning to Online Factsheets	Agnieszka Kowalik-Tait	11:35
Climate Change	Carolin Haenfling	11:45
Air Quality	Carolin Haenfling	11:55
Recreational & Drinking Water	Patrick Hipgrave	12:05
Transport & Travel	Patrick Hipgrave	12:15
Border Health	Liam Kelly	12:25
UV Exposure	Liam Kelly	12:35
Alcohol-related Harm	Kirstin Lindberg	12:45
Indoor Environment	Helene Marsters (pre-recorded)	12:55
Final Q&A session	Team	13:05
END		**13:30**

HOUSEKEEPING

Got questions?



- Each segment will have ~5 min dedicated Q&A time. You can submit questions via chat (to EHI_host) at any time, or verbally during the Q&A

Slides are available on request

Drop in/out as you need

Emergency Procedures?

Got a question?
Message EHI_host

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Introduction to EHINZ

PROF. BARRY BORMAN

HAZARDOUS SUBSTANCES SURVEILLANCE SYSTEM

Liam Kelly & Shunnie Xie

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Content

1. The current state
2. Changes in the HSDIRT tool
3. Future plans

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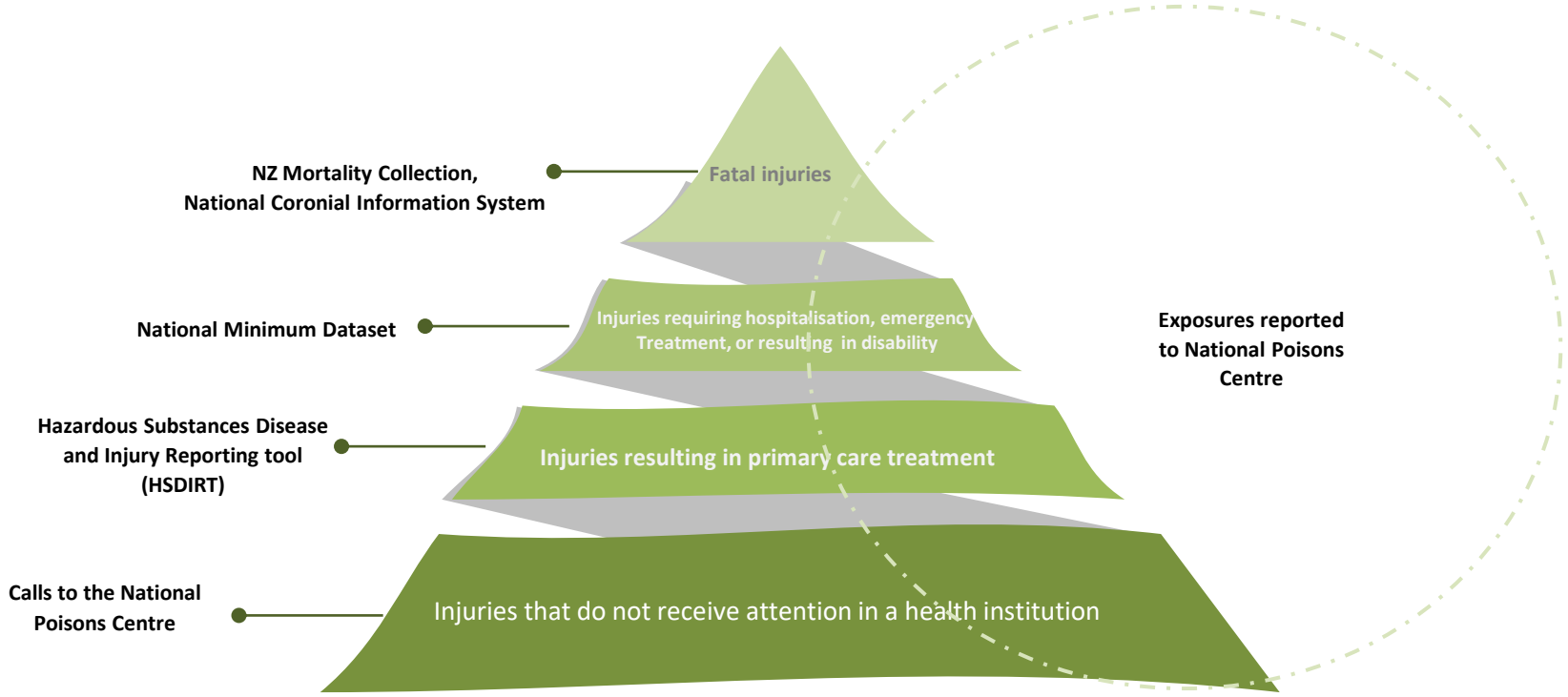
The current state

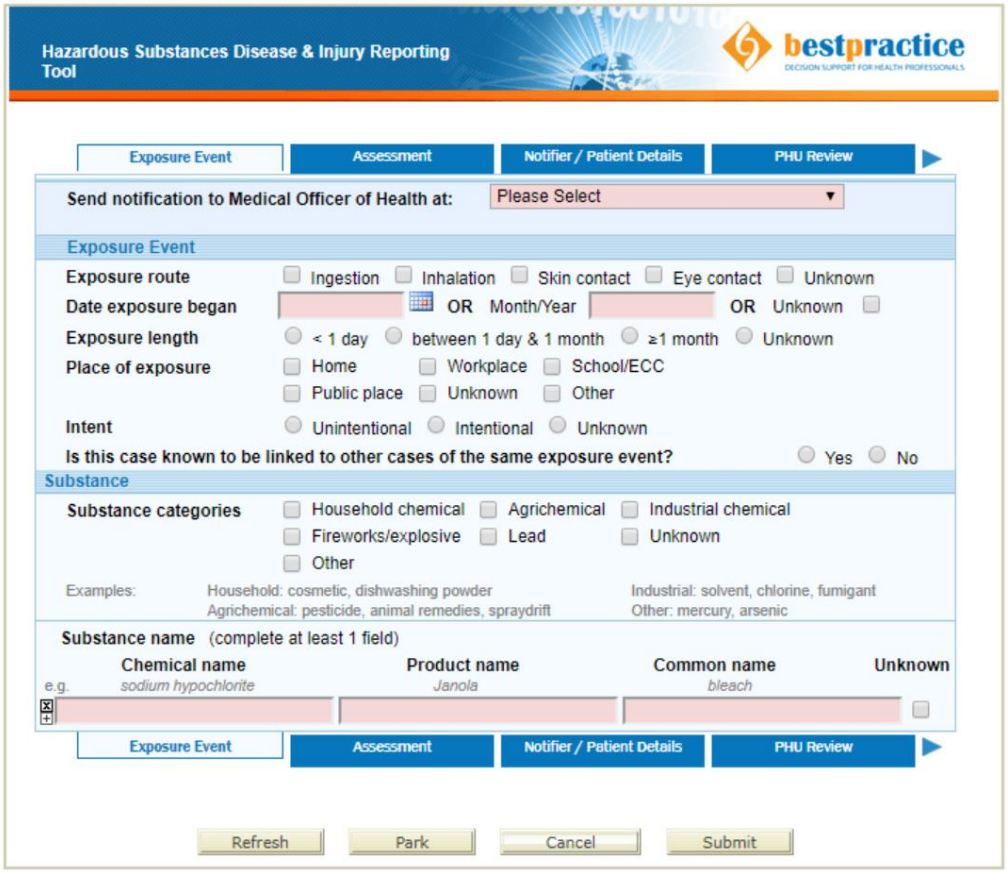


HAZARDOUS SUBSTANCES SURVEILLANCE SYSTEM (HSSS)

PART TWO

Changes in the HSDIRT tool

Changes in the HSDIRT tool



- Shifted from generic logins to individual logins.
- Incorporating StatsNZ classification of occupation into HSDIRT.
- To make HSDIRT system interoperable with direct laboratory notifications.

PART THREE

Future plans

Future plans

- Investigating use of ACC data to understand duration of harm and cost analysis of hazardous substances.
- How NPC and NZ Fire & Emergency can be linked to GP notifications, hospitalisations and mortality.
- How IDI data sets can be used to assess risk and long-term impacts
- Increasing accessability and useability of HSDIRT for GP's.

Contact us if you have any questions

Edgecumbe floods, NZ,
March 2017

SOCIAL VULNERABILITY INDICATORS AND POPULATION VULNERABILITY

Kylie Mason

Got a question?

Message EHI_host

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SOCIAL VULNERABILITY TO NATURAL HAZARDS

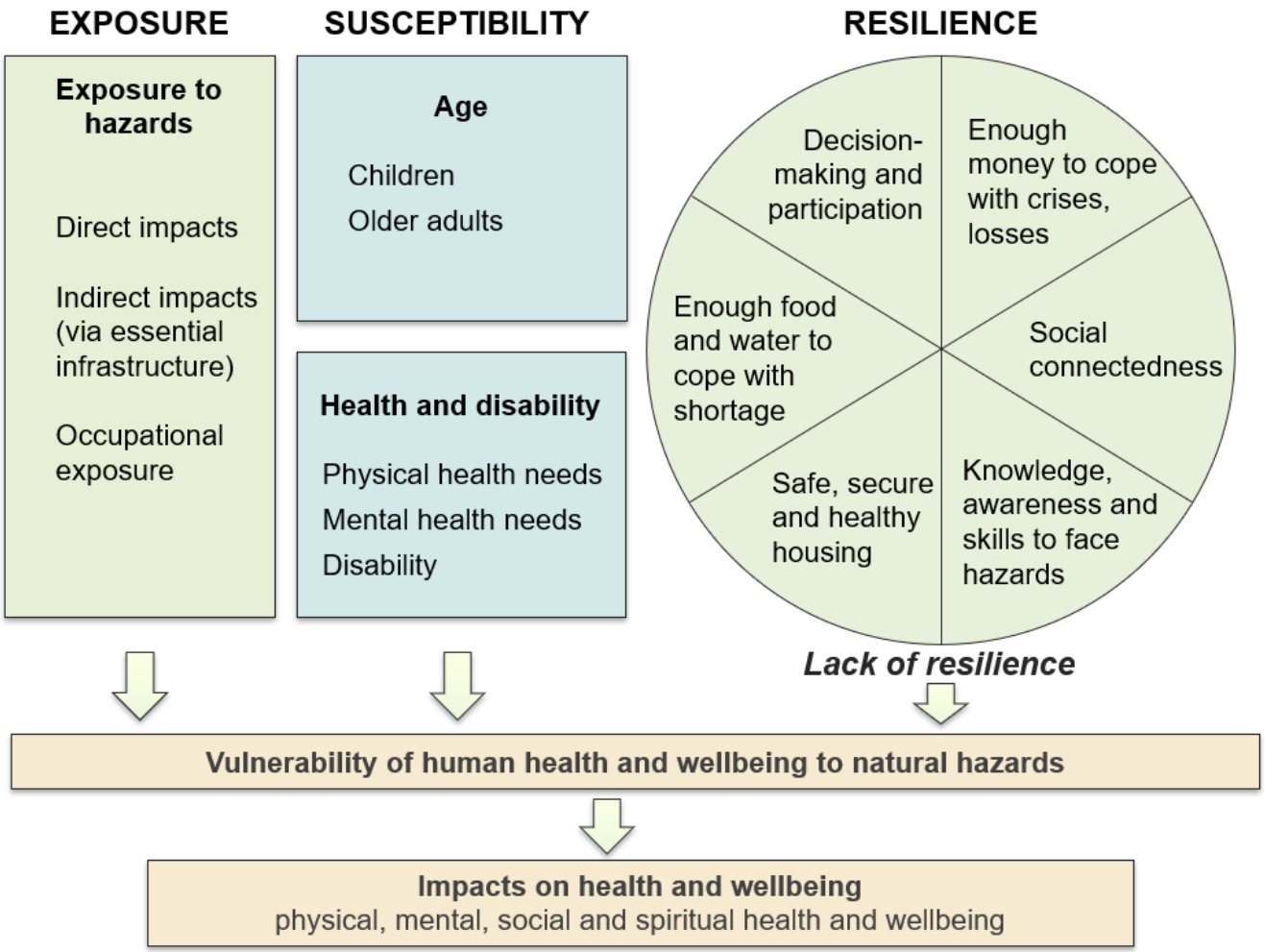
- Social vulnerability to natural hazards:
  - characteristics that influence people's capacity to **anticipate**, **cope with**, and **recover from** natural hazards

- Social vulnerability to natural hazards relates to people's:
  - exposure
  - susceptibility
  - lack of resilience

- We have developed a set of social vulnerability indicators for New Zealand for 2018 (SVI2018)

Got a question?
Message EHI_host

CONCEPTUAL FRAMEWORK



Got a question?

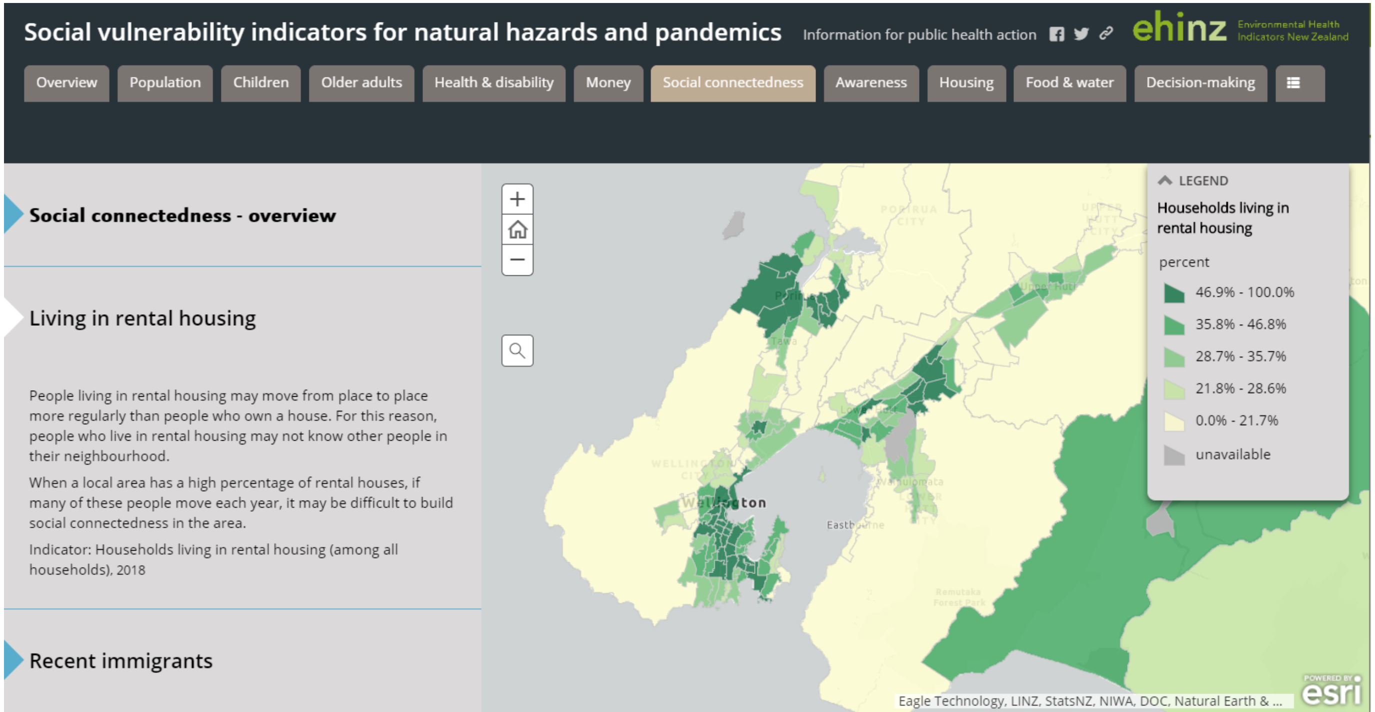
Message EHI_host

INDICATOR LIST

Dimension	Indicators (with Census-type data for NZ)
Exposure	Usually resident population Number of households Urban/rural classification Ethnic group (total response): European, Māori, Pacific peoples, Asian, MELAA
Exposure (occupational)	Health care and social assistance workers Primary industry workers
Children	Children aged 0–4 years Children aged 0–14 years School-aged children (5–14 years) Households with at least one child aged 0–4 years Households with at least one child aged 0–14 years
Older adults	People aged 65+ years People aged 75+ years People aged 85+ years People aged 70+ years Households with an older adult (65+ years) living alone
Health and disability	Pregnant women (proxy)

Dimension	Indicators (with Census-type data for NZ)
Having enough money to cope with crises/losses	Socioeconomic deprivation (NZDep2018 decile) Unemployed people People who are not in the labour force Single parent households Households with no access to a car
Social connectedness	Households living in rental housing One-person households Recent immigrants (less than 1 year; 0-1 years)
Knowledge, skills and awareness to face hazards	People who do not speak English Households with no access to a mobile phone Households with no access to the internet
Safe, secure and healthy housing	Crowded households People living in crowded households Damp dwellings (always; always or sometimes) Mouldy dwellings (always; always or sometimes)
Enough food and water to survive	Households living in rental housing Socioeconomic deprivation (NZDep2018 decile) Dwellings with no access to safe drinking water Dwellings with no access to fridge Dwellings with no electricity
Decision-making and leadership	Voter turnout in 2019 Local Authority Elections

VISUALISING THE INDICATORS



Population context

Geographic area				Population (counts)		Population - ethnic groups (total response)					Children			Older adults			Pregnant women (proxy)
Territorial authority (TA)	SA2 code	SA2 name	Urban/rural	Usually resident population	Number of households	European	Māori	Pacific peoples	Asian	MELAA	0-4 years	0-14 years	5-14 years	65+ years	75+ years	85+ years	0 years
Porirua City	238800	Pukerua Bay	Large urban area	1962	705	91.9	14.1	3.7	2.3	1.2	6.4	21.7	15.1	11.9	3.1	0.6	1.4
Porirua City	238900	Paekakariki Hill	Rural	375	135	93.6	10.4	1.6	4.0	0.8	4.0	20.0	16.0	16.0	5.6	0.8	..C
Porirua City	239000	Plimmerton	Large urban area	2142	840	90.2	13.4	3.1	3.2	0.7	5.0	18.6	13.4	17.6	5.9	1.4	1.3
Porirua City	239100	Titahi Bay North	Large urban area	2688	981	69.9	35.8	16.9	7.9	0.6	7.3	22.9	15.6	11.0	4.2	0.9	1.5
Porirua City	239200	Titahi Bay South	Large urban area	3744	1266	65.8	36.3	21.6	8.0	1.8	8.3	24.6	16.2	12.3	5.1	1.9	1.7
Porirua City	239300	Elsdon-Takapuwahia	Large urban area	2418	696	47.8	52.9	28.7	10.0	0.7	8.6	24.9	16.4	9.9	3.6	0.9	1.6
Porirua City	239400	Pauatahanui	Rural	966	312	95.3	7.1	2.2	0.9	0.6	4.3	20.2	15.8	10.6	3.4	0.6	0.6
Porirua City	239500	Onepoto	Large urban area	1917	624	70.1	32.2	18.0	4.5	1.4	7.8	24.4	16.6	11.6	3.9	0.9	1.6
Porirua City	239600	Camborne	Large urban area	2013	726	89.4	9.5	2.8	6.7	1.2	6.4	21.6	15.1	12.4	4.0	0.7	1.8
Porirua City	239800	Paremata	Large urban area	2463	972	89.6	11.9	5.8	4.1	0.9	4.9	16.7	11.8	19.2	6.8	1.2	1.2
Porirua City	239900	Porirua Central	Large urban area	261	33	57.5	28.7	13.8	11.5	2.3	2.3	4.6	3.4	8.0	3.4	1.1	..C
Porirua City	240000	Papakowhai	Large urban area	2268	759	83.6	13.6	6.9	8.7	0.5	5.6	18.1	12.7	17.2	7.3	2.4	0.8
Porirua City	240100	Aotea	Large urban area	3138	1062	70.6	8.2	7.2	22.0	1.3	8.0	24.4	16.3	14.4	7.4	2.6	1.7
Porirua City	240200	Postgate	Large urban area	2754	927	77.6	14.9	13.6	8.5	0.5	8.4	22.1	13.9	9.9	3.2	0.3	1.3
Porirua City	240300	Ascot Park	Large urban area	2862	804	45.1	29.4	42.6	12.1	1.5	8.7	25.2	16.5	9.4	2.5	0.2	2.1
Porirua City	240400	Whitby	Large urban area	3042	1059	86.7	10.6	6.2	6.8	0.9	6.7	21.4	14.7	15.7	7.0	1.9	1.2
Porirua City	240500	Porirua East	Large urban area	2235	681	38.9	31.1	44.6	12.2	1.3	9.0	24.0	15.0	8.6	2.3	0.3	1.7
Porirua City	240600	Endeavour	Large urban area	4617	1482	85.7	7.4	3.0	9.7	1.4	7.3	22.6	15.3	12.1	4.2	1.0	1.4
Porirua City	240700	Cannons Creek North	Large urban area	3474	915	28.1	28.8	58.0	10.4	3.3	10.4	29.8	19.3	7.2	2.4	0.5	2.0
Porirua City	240800	Waitangirua	Large urban area	4398	1044	22.0	28.8	66.0	8.3	1.4	9.8	30.1	20.3	7.8	2.5	0.3	1.7
Porirua City	240900	Ranui Heights	Large urban area	1326	465	62.4	24.2	26.2	9.7	1.4	7.7	18.3	10.9	13.3	4.5	0.9	2.0
Porirua City	241000	Cannons Creek East	Large urban area	3879	933	19.9	23.8	68.1	7.1	2.2	9.4	28.5	18.9	8.6	2.9	0.3	1.8
Porirua City	241100	Cannons Creek South	Large urban area	1620	414	26.7	28.7	59.6	8.1	2.6	8.3	27.8	19.4	7.0	2.2	0.2	2.4

Social vulnerability indicators 2018 (percentages)

SA2 name	Having enough money to cope with crises and losses				Social connectedness			Awareness, knowledge and skills to cope with hazards			Safe, secure and healthy housing						Enough food and water to cope with shortage					Occupation	
	NZDep2018 deciles	Unemployed	Not in labour force	Households with no car	Living in rented dwelling	Immigrant arrived in past year	Immigrant arrived in past 0-1 years	Don't speak English	Households with no cellphone	Households with no Internet	Crowded households	People living in crowded households	Dwelling damp (always/sometimes)	Dwelling damp (always)	Dwelling mouldy (always/sometimes)	Dwelling mouldy (always)	NZDep2018 deciles	Living in rented dwelling	Dwellings with no access to safe running water	Dwellings with no access to a fridge	Dwellings with no access to electricity	Healthcare and social assistance workers (among 15+ years)	Healthcare and social assistance workers (among employed 15+ years)
Pukerua Bay	2	3.1	22.5	2.2	15.7	0.6	1.4	0.2	2.7	5.3	1.4	2.8	19.8	1.8	16.1	3.1	2	15.7	1.8	1.3	0.4	7.0	9.5
Paekakariki Hill	1	3.0	25.0	0.0	13.6	0.0	0.0	0.8	10.0	5.0	..C	2.9	17.9	0.0	10.3	0.0	1	13.6	5.0	0.0	0.0	5.0	6.9
Plimmerton	2	2.4	27.5	5.2	23.5	1.0	1.5	0.1	3.3	7.4	2.5	3.7	17.9	1.5	12.4	3.0	2	23.5	0.4	3.0	0.4	8.3	11.8
Titahi Bay North	8	6.8	27.1	11.0	43.3	0.7	1.2	1.0	6.5	15.4	7.4	13.7	30.0	6.0	23.5	6.6	8	43.3	3.1	4.8	1.7	7.5	11.4
Titahi Bay South	9	6.7	30.4	12.9	48.9	0.6	1.4	1.3	7.9	19.1	8.2	14.7	28.5	4.1	24.6	5.9	9	48.9	2.4	4.2	1.3	7.9	12.5
Elsdon-Takapuwahia	9	7.4	32.2	13.0	49.8	0.7	1.9	3.4	9.5	17.9	13.6	24.4	43.1	8.7	34.2	10.4	9	49.8	3.5	4.0	3.0	8.4	14.0
Pauatahanui	1	2.7	19.5	0.0	14.4	0.9	1.6	0.3	6.0	5.0	3.3	5.7	8.2	1.0	8.2	1.0	1	14.4	2.0	1.0	0.0	5.4	7.0
Onepoto	5	4.3	25.9	4.7	26.0	0.2	0.5	1.1	5.7	9.9	5.0	8.9	30.6	4.3	22.9	6.4	5	26.0	1.6	1.6	1.0	8.3	11.9
Camborne	1	2.9	23.0	3.0	16.9	1.0	2.1	0.8	1.7	4.2	1.4	1.6	14.5	1.7	10.3	2.1	1	16.9	1.3	0.8	0.8	6.5	8.7
Paremata	2	3.2	27.2	3.9	22.8	1.6	2.6	0.2	3.9	7.8	2.1	4.1	15.7	2.6	11.0	3.6	2	22.8	1.3	1.9	1.6	7.0	10.1
Porirua Central	10	1.2	48.8	25.0	63.6	3.5	5.8	1.1	12.5	25.0	..C	..C	50.0	12.5	14.3	0.0	10	63.6	0.0	0.0	0.0	2.4	4.8
Papakowhai	1	3.1	26.8	1.6	14.6	0.7	2.0	1.1	3.3	4.5	2.7	4.5	14.1	1.2	12.0	2.1	1	14.6	1.2	1.2	0.8	6.0	8.5
Aotea	1	2.5	28.1	4.1	17.8	1.2	2.4	2.2	4.4	4.7	1.9	2.8	1.8	0.3	2.6	0.6	1	17.8	0.9	0.6	0.6	5.6	8.0
Postgate	2	3.9	21.7	1.7	23.0	0.8	2.1	0.9	2.3	4.3	4.4	8.4	19.0	1.7	15.4	3.1	2	23.0	0.7	1.7	1.3	7.7	10.3
Ascot Park	9	6.2	30.8	6.0	39.9	0.5	1.2	2.9	4.8	13.2	14.1	22.8	36.6	8.2	31.1	9.4	9	39.9	1.2	2.4	2.4	6.4	10.2
Whitby	1	2.6	26.6	2.9	19.5	0.8	1.7	1.2	4.0	4.8	1.9	3.2	15.7	1.2	13.0	2.9	1	19.5	0.6	0.6	0.0	6.1	8.7
Porirua East	10	7.4	31.6	16.0	59.9	1.1	2.3	4.3	8.6	20.7	14.3	24.0	38.5	11.2	31.6	11.8	10	59.9	4.1	5.6	5.1	6.9	11.3
Endeavour	1	2.9	23.9	1.2	12.3	1.8	3.2	0.9	2.3	2.1	1.4	1.9	5.4	0.4	5.1	1.0	1	12.3	0.4	1.2	0.2	4.9	6.7
Cannons Creek North	10	10.3	35.6	23.2	75.4	1.1	3.1	6.4	12.9	27.3	23.5	38.3	52.4	13.1	44.5	16.3	10	75.4	7.3	8.5	7.3	7.1	13.2
Waitangirua	10	9.7	37.5	14.6	72.8	1.2	2.1	6.9	10.8	24.9	25.5	39.6	53.4	13.7	46.4	18.4	10	72.8	5.1	5.4	4.7	6.7	12.8
Ranui Heights	5	4.7	27.7	6.2	30.1	0.5	0.7	2.1	5.5	13.8	4.4	8.3	25.4	3.5	19.1	4.3	5	30.1	2.7	4.1	2.7	7.5	11.1
Cannons Creek East	10	9.9	37.5	17.0	64.6	0.3	1.0	5.2	11.9	26.5	25.0	39.5	52.5	13.2	44.6	16.5	10	64.6	5.9	6.3	5.1	6.4	12.1
Cannons Creek South	10	9.7	30.3	10.6	64.0	0.4	0.9	5.9	8.8	22.8	21.1	33.3	51.9	13.2	45.8	15.9	10	64.0	5.3	7.1	5.3	8.2	13.7

Indicator data is available at SA2, TA, DHB, Auckland local board area levels

Data is available in Excel spreadsheets

Data now available as REST service for ArcGISOnline

FUTURE WORK

- Developing health indicators, eg
  - People with cardiovascular disease, respiratory disease, diabetes, mental health conditions
- Factsheets about health effects from different natural hazards, and who is most vulnerable to these – eg, earthquakes, tsunami, volcanoes, floods, wildfires, heat waves
- Identifying useful social vulnerability indicators for environmental hazards – eg air pollution
- Overlay social vulnerability indicators and natural hazards, environmental hazards
  - Are more vulnerable populations more exposed to environmental hazards and/or natural hazards in New Zealand?

Got a question?

Message EHI_host

Social vulnerability indicators

www.ehinz.ac.nz

EHI website → Population vulnerability → Social vulnerability indicators

www.ehinz.ac.nz/indicators/population-vulnerability/social-vulnerability-to-natural-hazards/

For more information, please contact me:
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DATA VISUALISATION

- Environmental Health indicators are presented on interactive dashboards and reports (Regional reports for Alcohol related-harm domain)

- Environmental Health dashboards with regional data are embedded on Healthspace.

- Domain specific dashboards, e.g., Water quality, are embedded on EHI website.

Got a question?

Message EHI_host

DATA VISUALISATION

Domain and topic

Water quality

Drinking water

Waterborne diseases related to drinking water quality

Notifications of potentially waterborne disease with recreational or untreated water contact as a risk factor

Indicator

Campylobacteriosis, Total (crude rate per 100,000), 5-year moving average

Year(s)

2015-2019

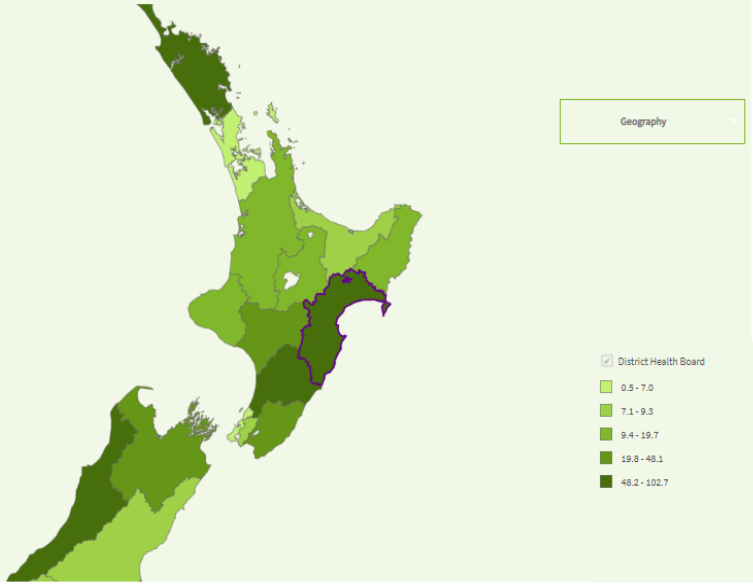
Key Information

Indicator Factsheet and metadata.

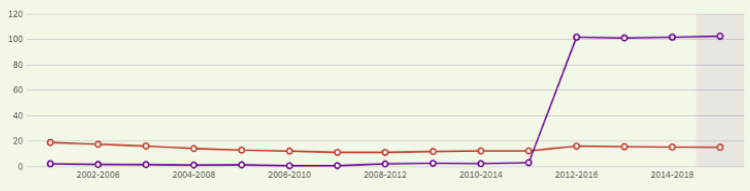
Source: Institute of Environmental Science and Research Ltd. (ESR). National Database of notifiable diseases (EpiSurv).

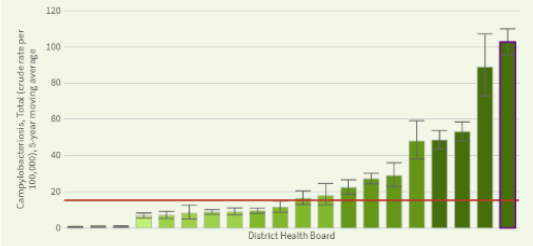
- In 2015–19, only three District Health Boards (DHBs) had sufficient risk factor information for campylobacteriosis notifications to allow a reliable calculation of the rate of cases where untreated drinking water was a risk factor. Twelve DHBs had enough data for cryptosporidiosis and eleven for giardiasis.
- **Throughout the 2010s, notifications submitted by the Auckland Regional Public Health Service (covering Waitematā, Auckland and Counties Manukau DHBs) consistently had much lower risk factor completion rates.**
- In 2019, there were 537 notifications of campylobacteriosis, 140 notifications of cryptosporidiosis, and 211 notifications of giardiasis with untreated drinking water recorded as a risk factor. However, these figures are highly likely to be underestimates.
- **In 2015–19, Hawke's Bay DHB had the highest notification rates of campylobacteriosis with untreated drinking water as a risk factor. Northland and Wairarapa DHBs had relatively high notification rates for cryptosporidiosis. Tairāwhiti DHB had the highest rate of giardiasis notifications by a considerable margin.**

Water quality | Drinking water | Waterborne diseases related to drinking water quality | Notifications of potentially waterborne disease with recreational or untreated water contact as a risk factor | Campylobacteriosis, Total (crude rate per 100,000), 5-year moving average (2015-2019)

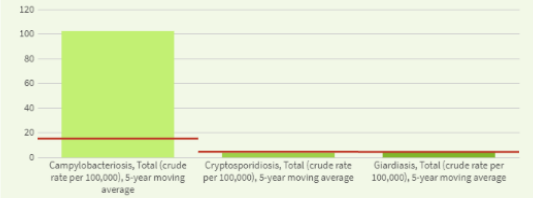


Campylobacteriosis, Total (crude rate per 100,000), 5-year moving average





Water quality | Drinking water | Waterborne diseases related to drinking water quality | Notifications of potentially waterborne disease with recreational or untreated water contact as a risk factor



District Health Board	Count	Campylobacteriosis, Total (crude rate per 100,000), 5-year moving average (2015-2019)
Auckland	15	0.7
Bay of Plenty	105	9.0
Canterbury	223	8.8
Capital & Coast	100	6.8
Counties Manukau	13	0.5
Hawke's Bay	981	102.7
Hutt Valley	55	7.0
Lakes	86	16.4
MidCentral	449	53.2
Nelson Marlborough	150	22.4
Northland	413	48.6
South Canterbury	23	8.2
Southern	387	27.2

Clear Filter

Guide

Share

2001-2005 | 2002-2006 | 2003-2007 | 2004-2008 | 2005-2009 | 2006-2010 | 2007-2011 | 2008-2012 | 2009-2013 | 2010-2014 | 2011-2015 | 2012-2016 | 2013-2017 | 2014-2018 | 2015-2019

Got a question?

Message EHI_host

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DATA VISUALISATION – WHAT'S NEW

- We are developing **online factsheets**.
  They will have the same look and feel as PDFs but will be interactive.

  - Tool tips provide users with indicator information (i.e., values, confidence intervals) when mousing over chart elements.

  - Allow users to download individual factsheet components (i.e., charts, tables, data).

  - Retain the ability for users to download factsheets as pdf.

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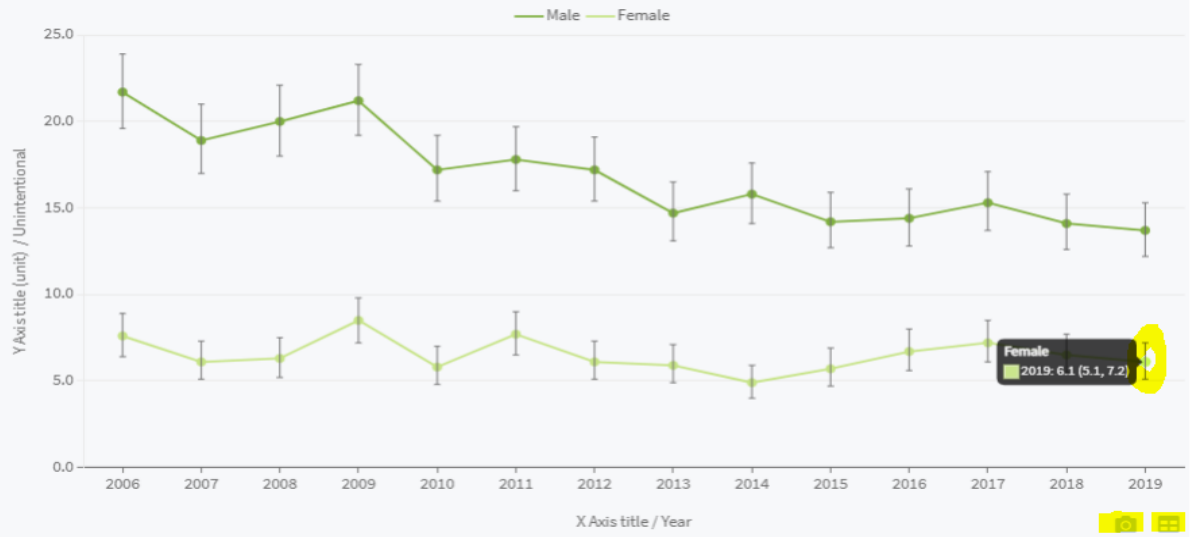
DATA VISUALISATION – WHAT'S NEW

Sex

First paragraph.

Second paragraph.

Figure 2 Sex



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male rate	21.7	18.9	20	21.2	17.2	17.8	17.2	14.7	15.8	14.2	14.4	15.3	14.1	13.7
Female rate	7.6	6.1	6.3	8.5	5.8	7.7	6.1	5.9	4.9	5.7	6.7	7.2	6.5	6.1
Male count	414	369	393	427	350	367	356	305	337	316	318	348	332	326
Female count	149	124	128	173	127	163	131	125	106	121	142	162	149	137

Note: 95% confidence intervals have been presented as error bars. The rate is suppressed due to an unreliable estimate with small numbers. See Metadata for more information on how to interpret this graph/table.

Source: XXX

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DATA VISUALISATION – WHAT'S NEW

- So far, we have done:
  - two trials
  - designed templates
  - developed process workflow
  - began work on first factsheets.

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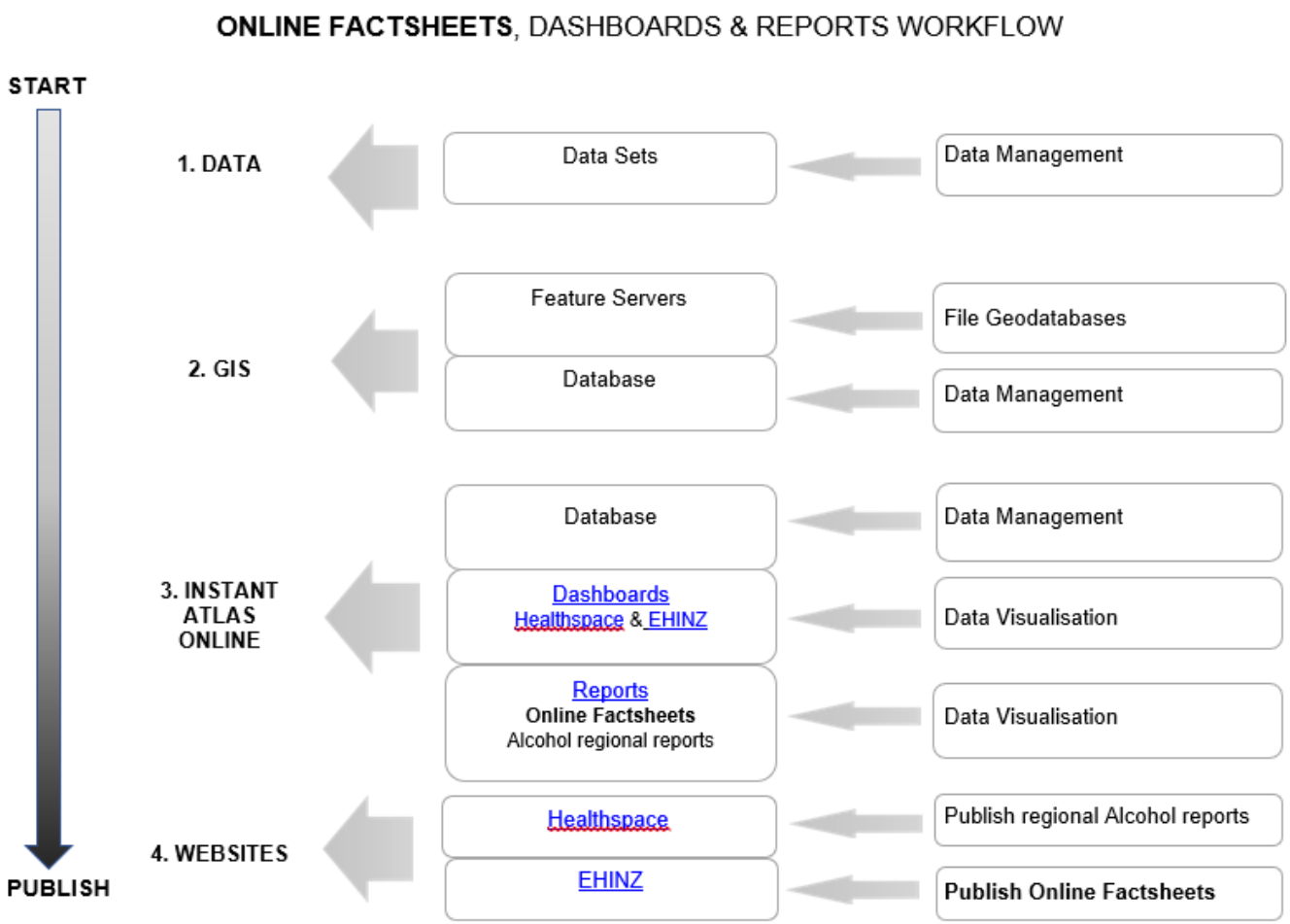
DATA VISUALISATION – WHAT'S NEW



DATA VISUALISATION – WHAT'S NEW

- The next stage will involve phased replacements of PDFs over the next couple of years.

- Questions - He Patai?

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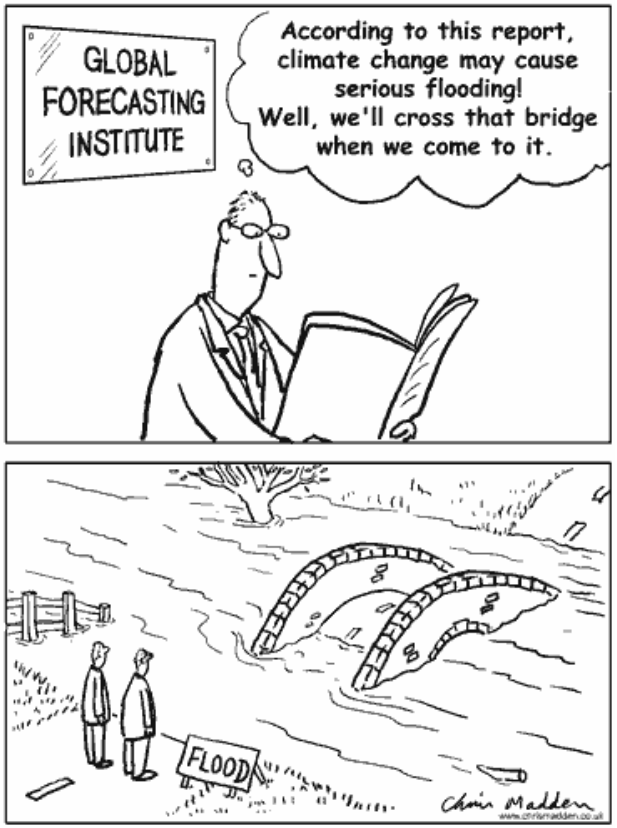

CLIMATE CHANGE

Carolin Haenfling

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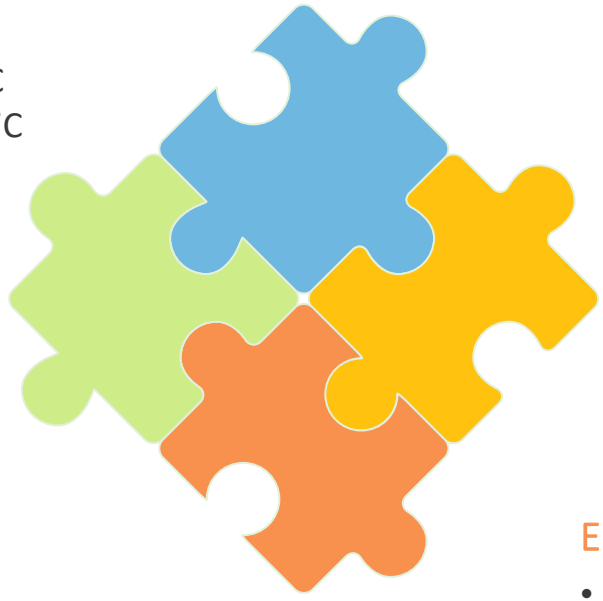
INDICATORS

TEMPERATURE

- Number of days below 0°C
- Number of days above 25°C



HEALTH EFFECTS

- Notifications of salmonellosis
- Notifications of cryptosporidiosis and giardiasis

RAINFALL AND DROUGHT

- Number of days in soil moisture deficit
- Number of days with extreme rainfall
- Annual average amount of rainfall

ENERGY

- Total energy consumed, by fuel type and sector

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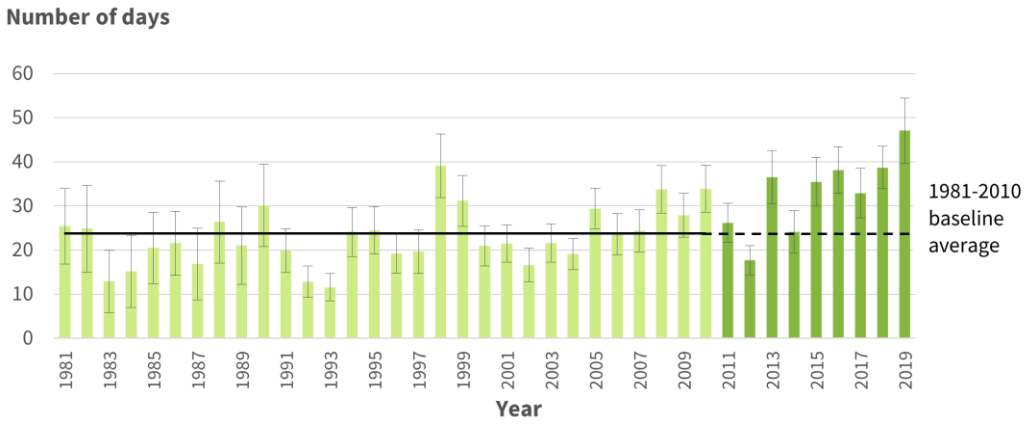
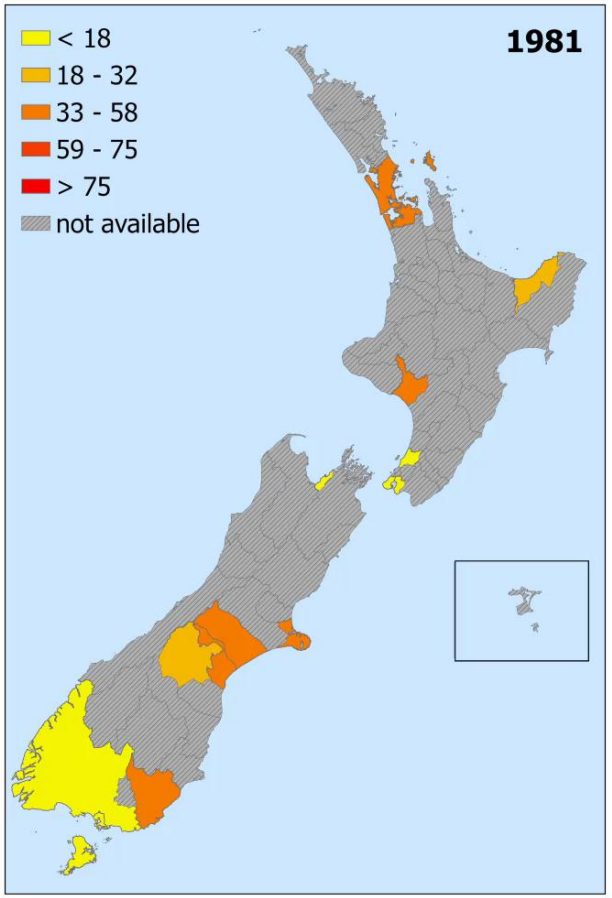
EXTREME TEMPERATURES





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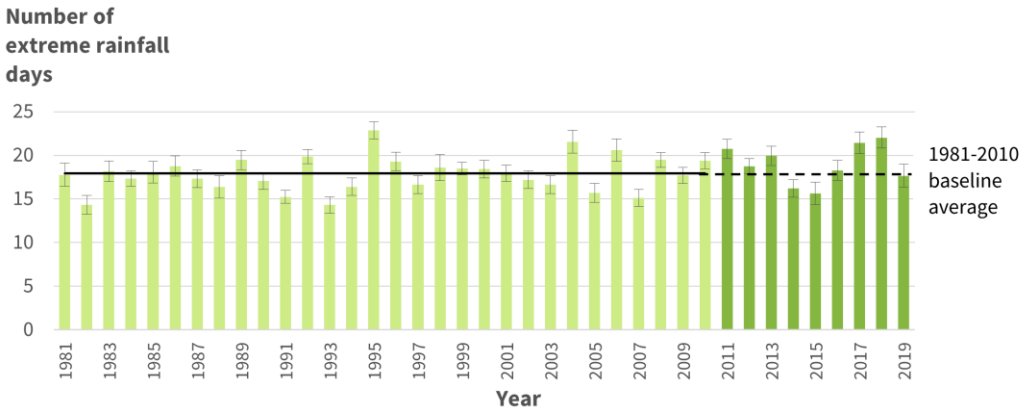
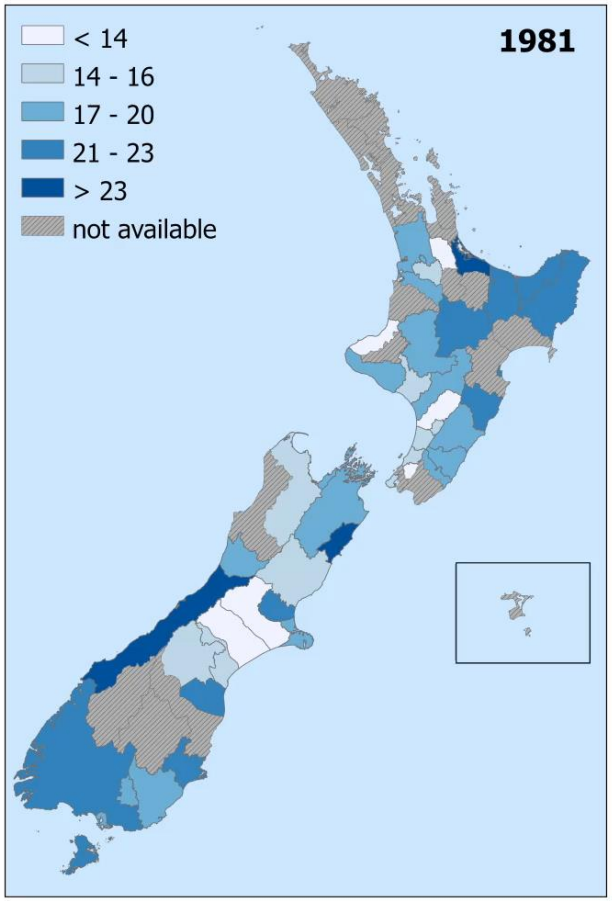
RAINFALL AND DROUGHT





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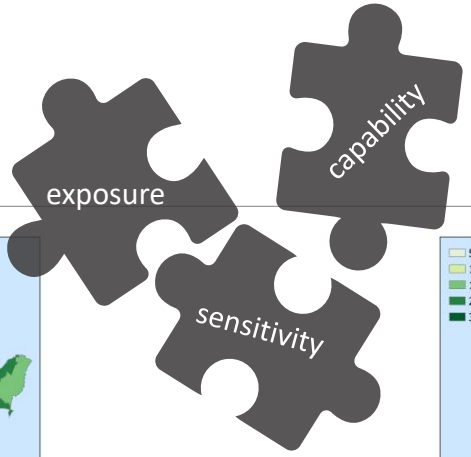
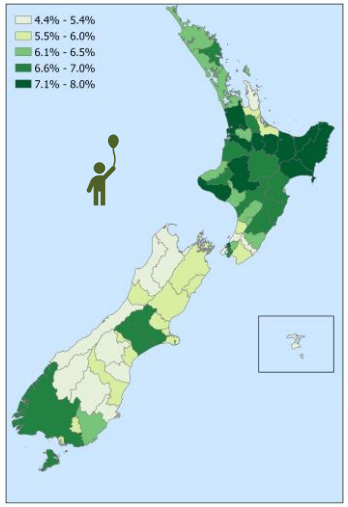
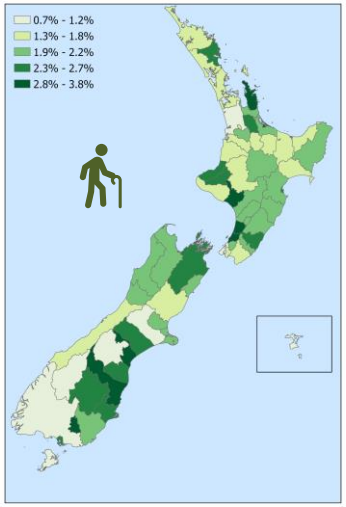
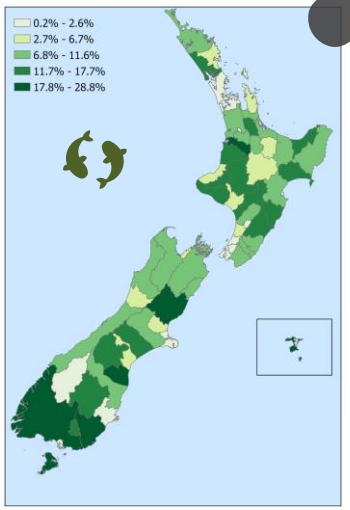
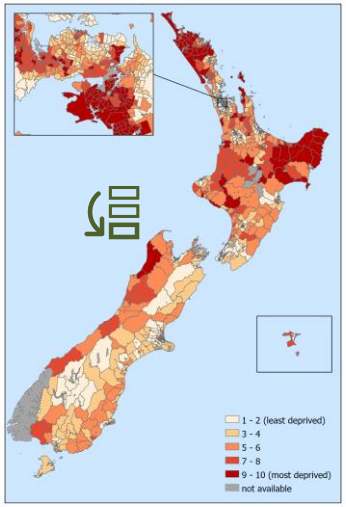
VULNERABILITY

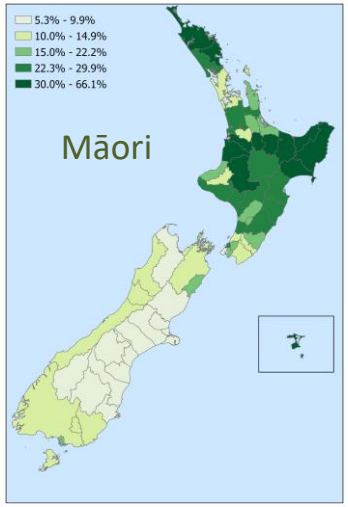












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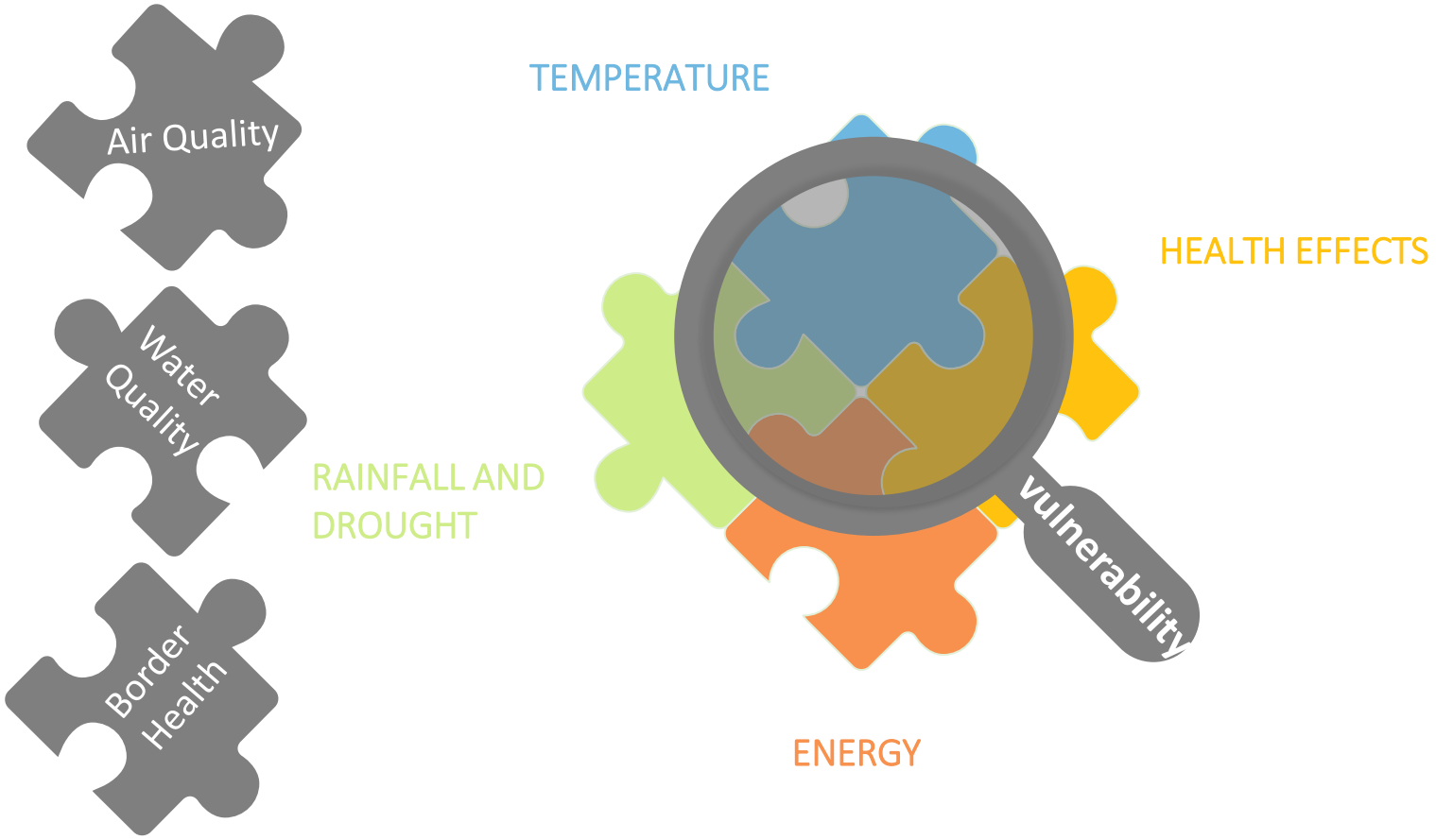
FUTURE WORK



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AIR QUALITY

Carolin Haenfling

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INDICATORS

HEATING

- Main types of heating used to heat dwellings

HEALTH EFFECTS OF AIR POLLUTION

- Estimated number of restricted activity days associated with air pollution
- Estimated number of cardiac and respiratory hospital admissions associated with air pollution
- Estimated number of premature deaths associated with air pollution

MOTOR VEHICLES

- Number of motor vehicles in the fleet, by vehicle type and fuel type
- Number of motor vehicle registrations, by vehicle type and fuel type
- Average age of vehicle fleet

PARTICULATE MATTER

- Monitoring sites exceeding the WHO annual average guideline for PM_{10}
- Monitoring sites exceeding the national environmental standard (24-hour average) for PM_{10}
- Monitoring sites exceeding the WHO daily guideline for $PM_{2.5}$
- Monitoring sites exceeding the WHO annual average guideline for $PM_{2.5}$

OTHER AIR POLLUTANTS

- Monitoring sites exceeding the WHO annual average guideline for nitrogen dioxide
- Monitoring sites exceeding the national environmental standard (one-hour average) for nitrogen dioxide
- Monitoring sites exceeding the WHO daily guideline for sulphur dioxide
- Monitoring sites exceeding the national environmental standard (one-hour average) for sulphur dioxide
- Monitoring sites exceeding the national environmental standard (eight-hour rolling average) for carbon monoxide
- Monitoring sites exceeding the WHO one-hour average guideline for carbon monoxide

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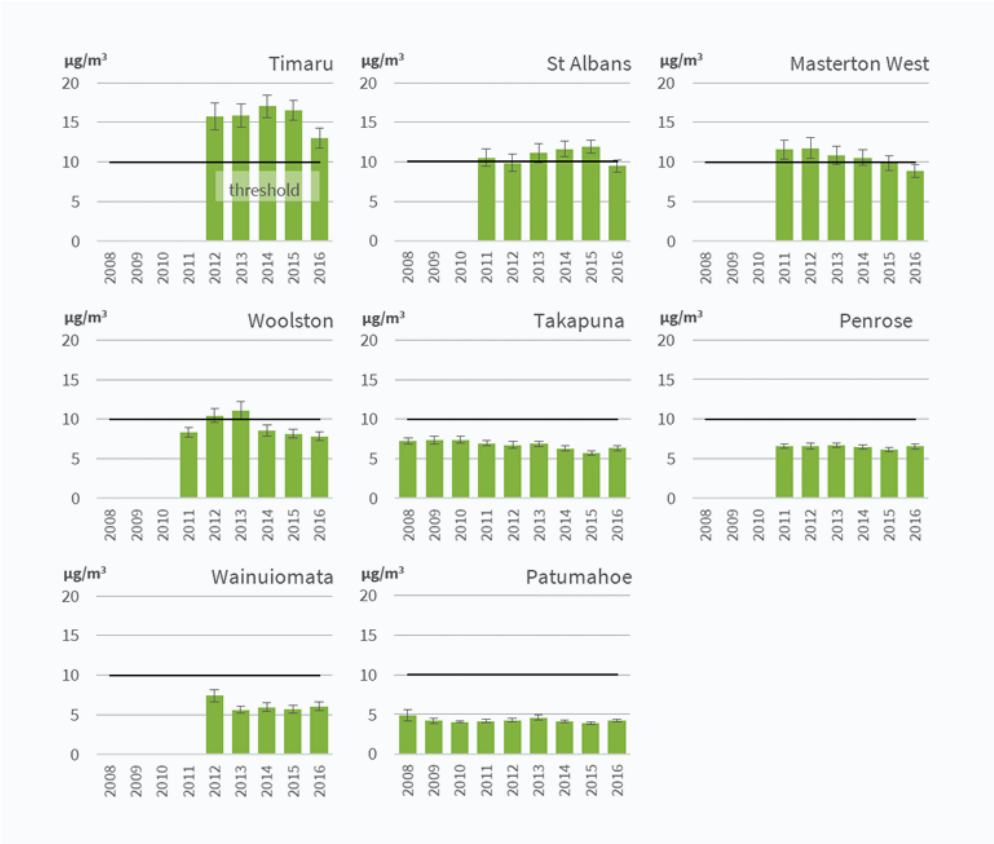
$PM_{2.5}$

Figure 5: Annual average $PM_{2.5}$ concentrations, at monitoring stations, 2008-2016



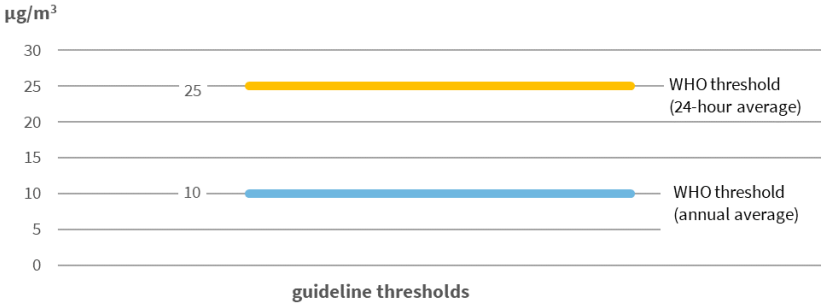
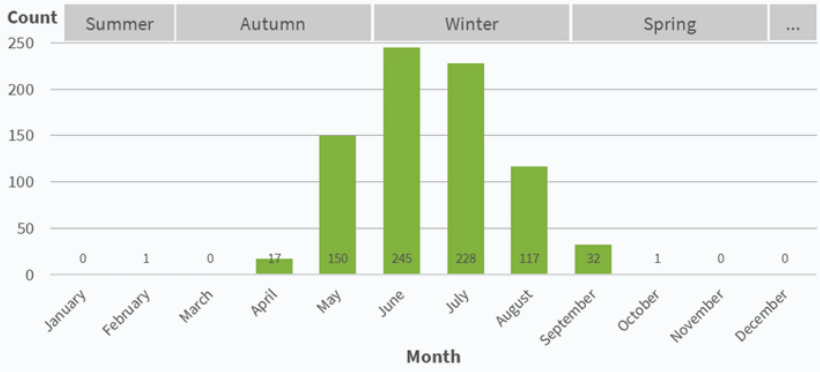


Figure 4: Number of exceedances of the WHO threshold (24-hour average) in New Zealand, by month, 2008-2016



HEALTH EFFECTS

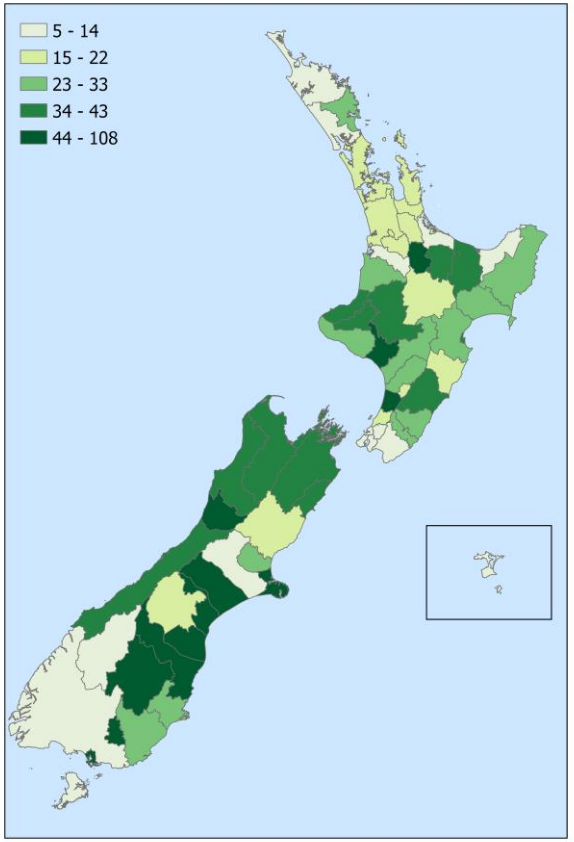
In 2016, air pollution from human-made PM_{10} was associated with an estimated

- 1,277 premature deaths (27.2 per 100,000 people)
- 236 cardiac hospitalisations (5.0 per 100,000 people)
- 440 respiratory hospitalisations (9.4 per 100,000 people)
- 1.49 million restricted activity days (31,839 per 100,000 people)

Territorial Authority	Premature mortality	hospitalisations (cardiac and respiratory)	Restricted activity days (000)
Timaru District	108.3	38.4	76.8
Invercargill City	100.5	53.2	96.8
Gore District	88.0	39.0	69.5

Restricted activity days are displayed as 1,000.

Table: Environmental Health Indicators Programme • Source: Ministry for the Environment and Stats NZ 2018 • Created with Datawrapper



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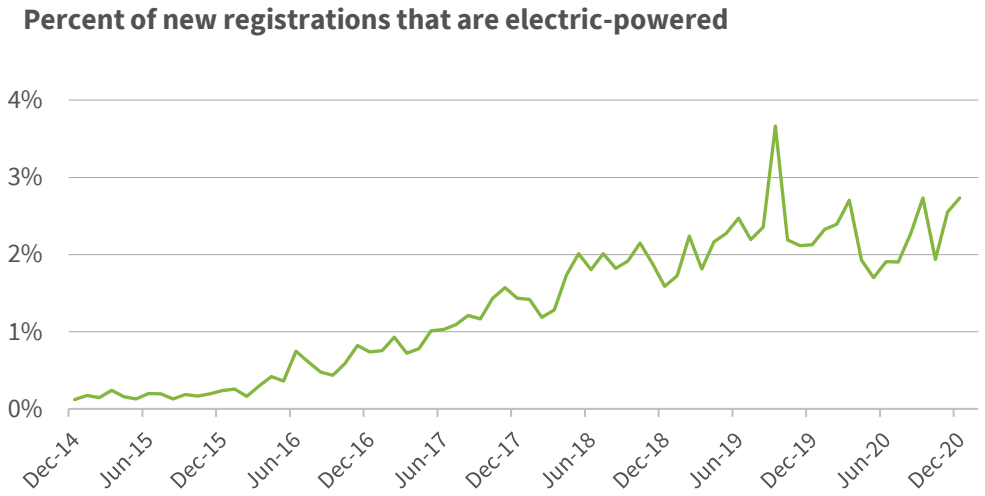
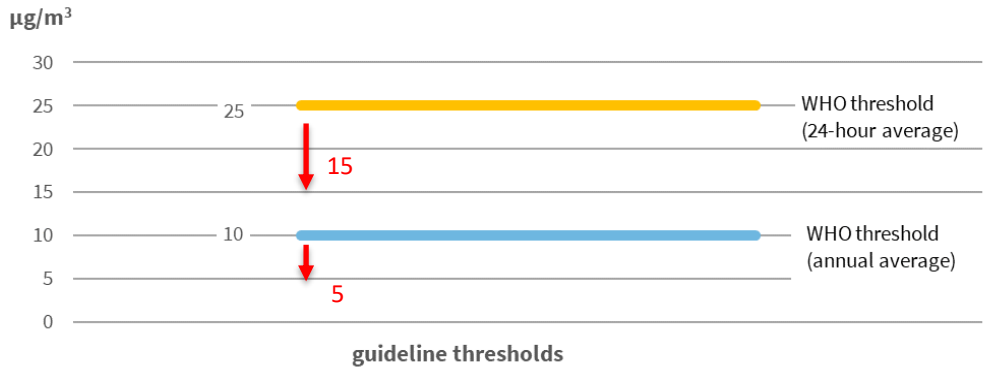
FUTURE WORK





- Impact of Clean Car Discount on electric vehicle registrations

- Update air pollutant data and compare to latest WHO air quality guidelines
- Update health effects of air pollution data with latest HAPINZ results

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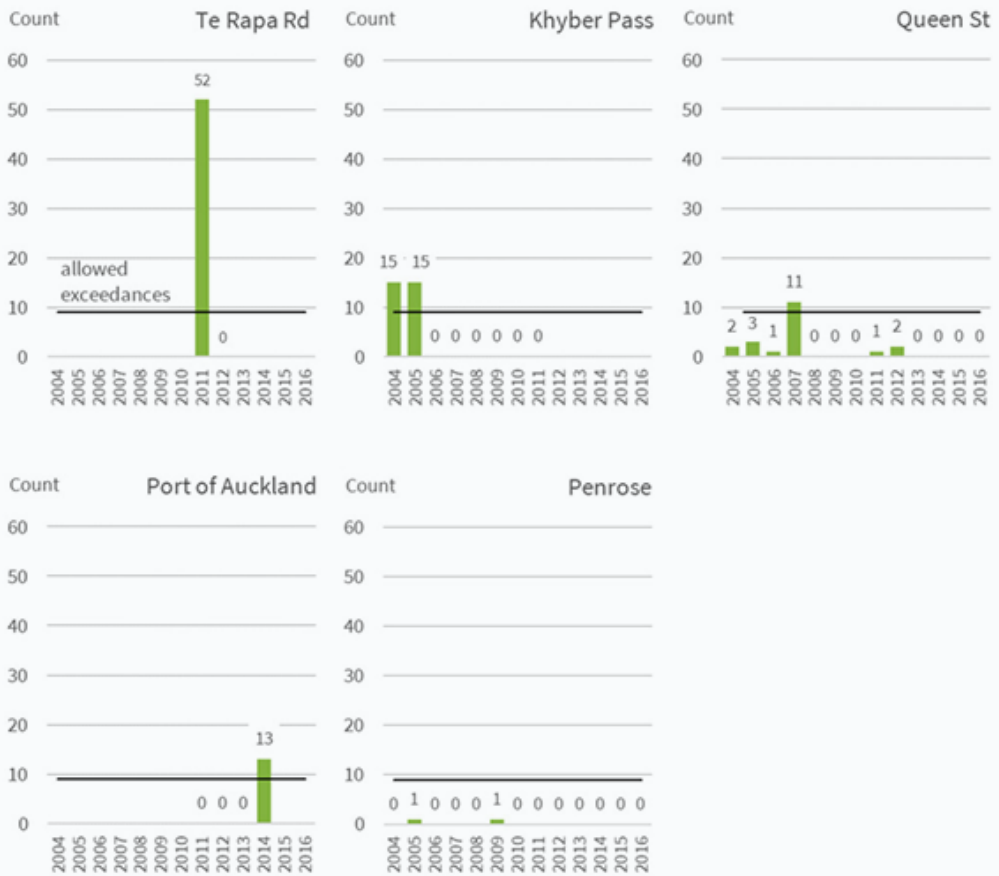
FUTURE WORK

Figure 3: Number of exceedances of the NESAQ's threshold (one-hour average), 2004-2016



- Air quality during COVID-19 lockdown

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WATER QUALITY

Patrick Hipgrave

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INDICATORS

Access to safe drinking water	Number of people served by water supplies that met bacteriological, chemical and protozoal standards
Access to fluoridated drinking water	Number of people served by fluoridated water supplies
Oral health of children	Number of children free of dental caries Mean number of decayed, missing or filled teeth per child
Waterborne diseases	Notifications of Cryptosporidiosis, Campylobacteriosis and Giardiasis • Overall • with drinking/recreational water as a risk factor
Agricultural activity	Number and density of livestock Area of agricultural land Area of irrigated land
Suitability for swimming	Concentrations of Faecal indicator bacteria at recreational bathing sites

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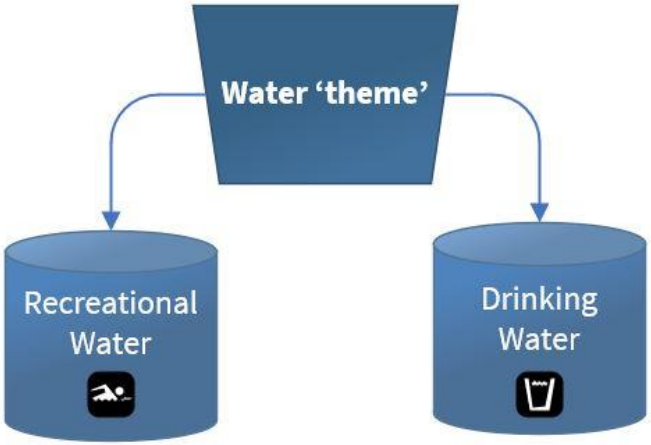
WHAT'S NEW?

Recreational water + Drinking water quality

=

'Water'



- Anticipating new govt. frameworks for water quality
- Change is to how existing topics are presented, rather than content
- Water is the 'theme', Rec/Drinking water are still the domains
- Existing indicators unchanged
- Space for expansion into other areas e.g. wastewater

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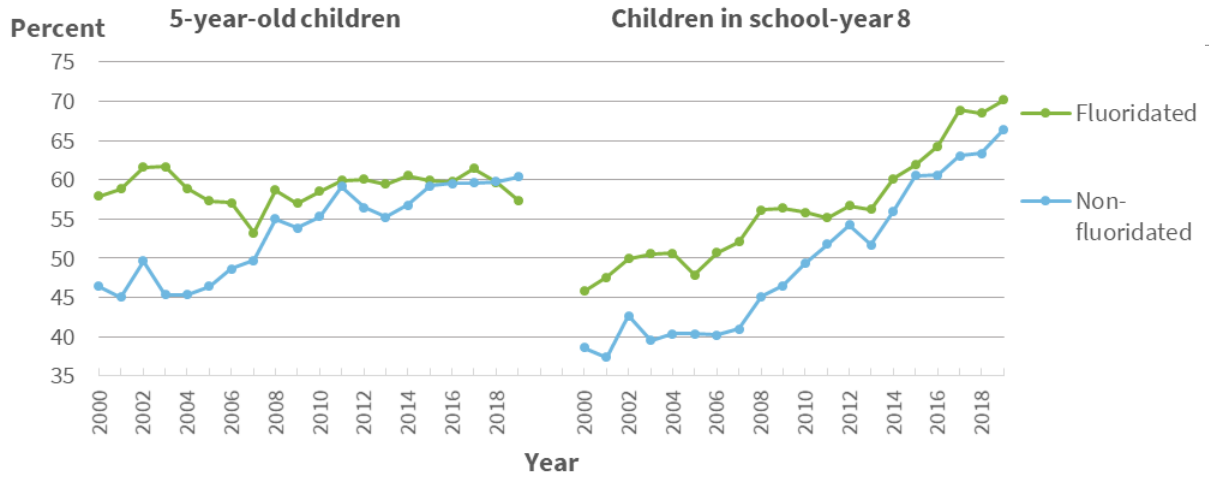
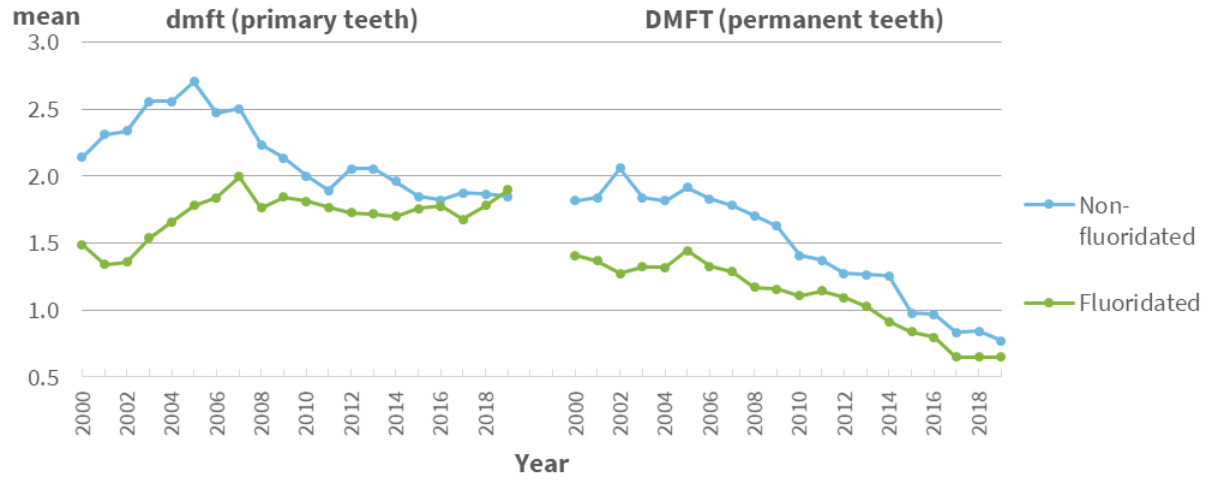
CHILDREN'S ORAL HEALTH



- Gain in caries free percentage for fluoridated 5y.o. shrank from +12% to -3%.
- The advantage for children in school-year 8 went from +7% to +4%



- Reduction in mean dmft for fluoridated 5y.o. went from 0.7 fewer decayed/missing/filled teeth to >0.1.
- For children in school-year 8, the difference in mean DMFT went from 0.4 to 0.1

- Both measures for 5y.o. children have been mostly static since around 2008.

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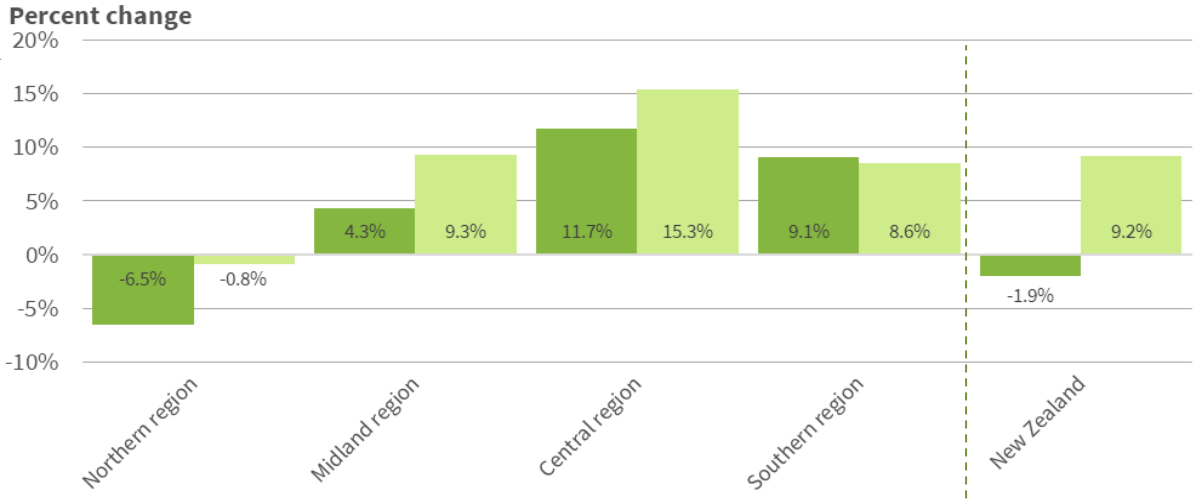
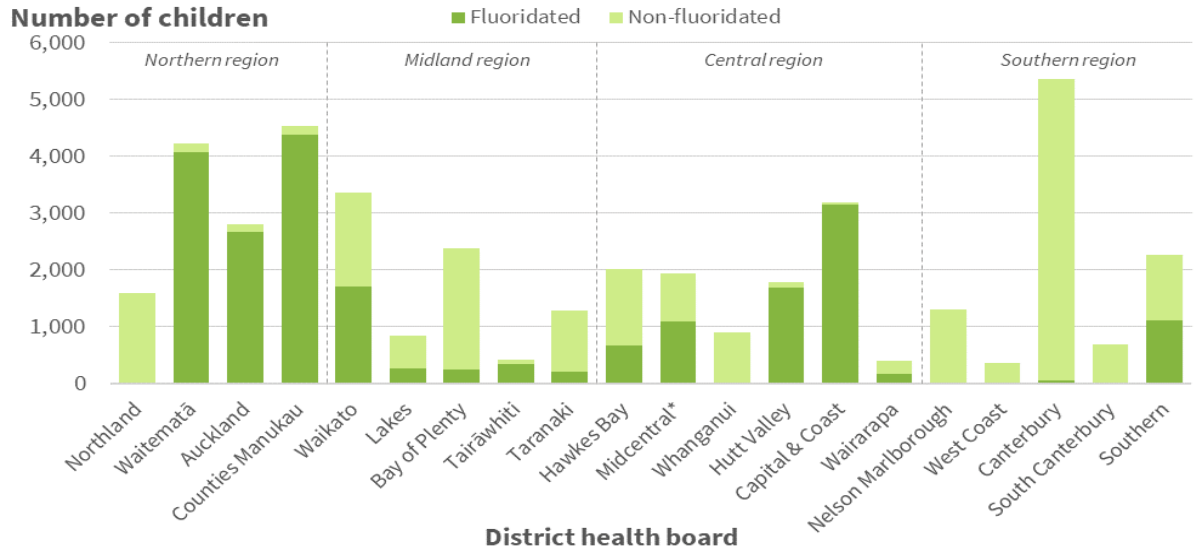
CHILDREN'S ORAL HEALTH – WHAT'S GOING ON HERE?





- Being in the 'Fluoridated' group doesn't guarantee access to fluoridated water
- Decline in caries-free percentage only exists in the northern region
- Three northern region DHBs supplied more than half the fluoridated population seen in 2019 – is this region cancelling out the improvements elsewhere?
- Number of 5y.o. children seen also declining, especially in Waitematā, Auckland and Counties Manukau. Is under-resourcing or targeting of highest-need groups in these DHBs affecting the reported trend?

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WATER SAFETY TOPIC

Water Safety New Zealand estimates that annually there are:

3.5 million visitors to the beach

4.5 million boating excursions

1.1 million recreational water users

700,000 people who go fishing

- Drownings are already covered by WSNZ.
- Other injuries (fatal or not) are not as well reported.
- Two new indicators drawn from NMDS and Mortality Collection are being prepared:
  - Water transport injury
  - Recreational water user injury

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WATER SAFETY INDICATORS

Water Transport Injury

- Based on ICD Codes V90-94: Accidents to & onboard watercraft, causing injury, drowning or submersion
- Will pair with the existing land transport injury / mortality indicator
- Ready to go in early 2022

Recreational water user injury

- Based on ICD Codes U52-54 (Water Sports), and others TBD
- Reliance on ICD codes may miss certain injuries sustained in the water
- More development work needed. And a snappier name.

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TRANSPORT & TRAVEL

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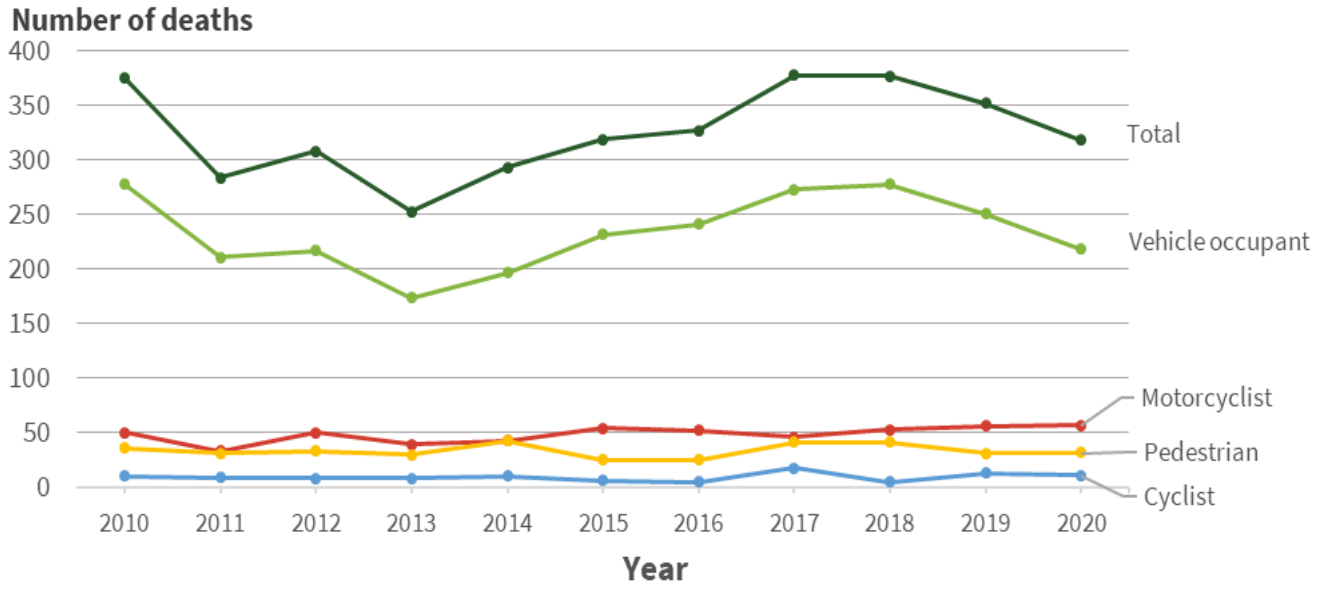
INDICATORS

Road traffic injury	Number of road traffic injury deaths / hospitalisations • Overall • In children (0-14yrs)
Household travel time	Average hours per year spent travelling by specific modes of transport
Main mode of transport to work	Average hours per year spent travelling to work by specific modes of transport Number of people using specific modes of transport to travel to work on Census day
Active transport to & from school	Percent of children (ages 5-14) who regularly use active transport to and from school
Unmet need for GP services due to lack of transport	Estimated percent of people who were unable to access GP services as they lacked any form of transport to get there
Motor vehicles (shared with Air Quality)	Number of motor vehicles Average age of motor vehicles

WHAT'S NEW?

2020 Road toll: lower than 2019, but how much is due to effects of Covid-19?



- Percent change 2018-19: **-7% (25 fewer deaths)**
- Percent change 2019-20: **-11% (34 fewer deaths)**
- Decline only in vehicle occupant mortality, minimal change (+/- 1–2 deaths) in all other classes.
- Drop in occupant mortality not noticeably larger than in previous year.

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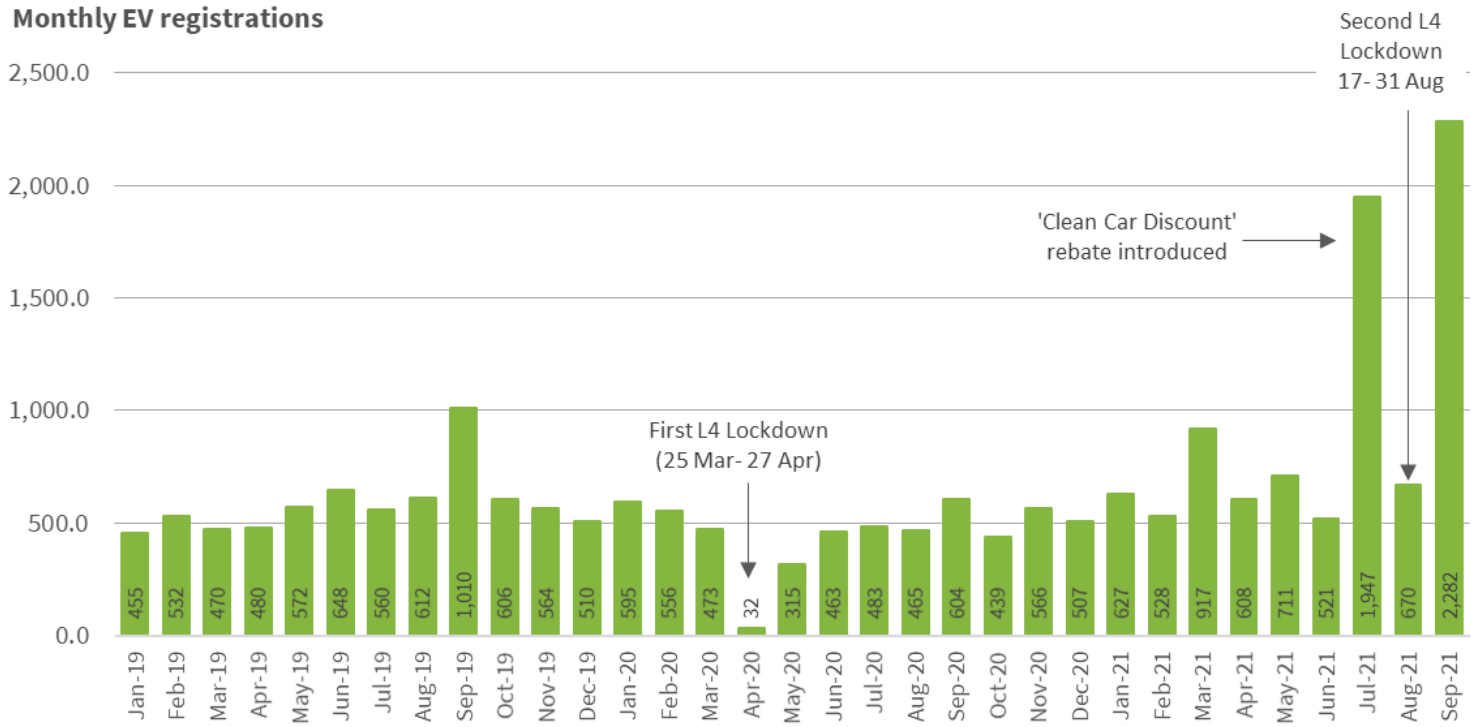
WHAT'S NEW?

Strong gains in EV registrations following introduction of rebate scheme



- First month of EV rebate scheme saw a fourfold increase in EV registrations.
- Covid-19 does not appear to have affected EV registrations – aside from during Lv. 4 lockdowns.

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WHAT'S NEXT?

Predicting & reporting the impact of Covid-19 on transport indicators

Cycle of data releases means it may take 1-2 years for effects of lockdowns & travel restrictions to show up in indicators

Indicator	What might happen?
Household travel time	Prevalence of private vehicle use could increase in response to reductions in public transport services, or public health regulations imposed on these. On the other hand, total time spent travelling is likely to decrease.
Main mode of transport to work	Might see private vehicle use climb – but how will the uptake of WFH culture affect commuting habits?
Active transport to/from school	How will school closures/shifts to online learning affect this? Will shifts in public transport drive more people to active transport – or to private vehicles? Parent's commuting habit may also come into play
Unmet need for GP services	Expect unmet need to increase owing to fewer public transport options and inability to get lifts from people outside the patient's bubble

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WATER & TRANSPORT Q & A

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BORDER HEALTH IN NEW ZEALAND

Stakeholder Presentation

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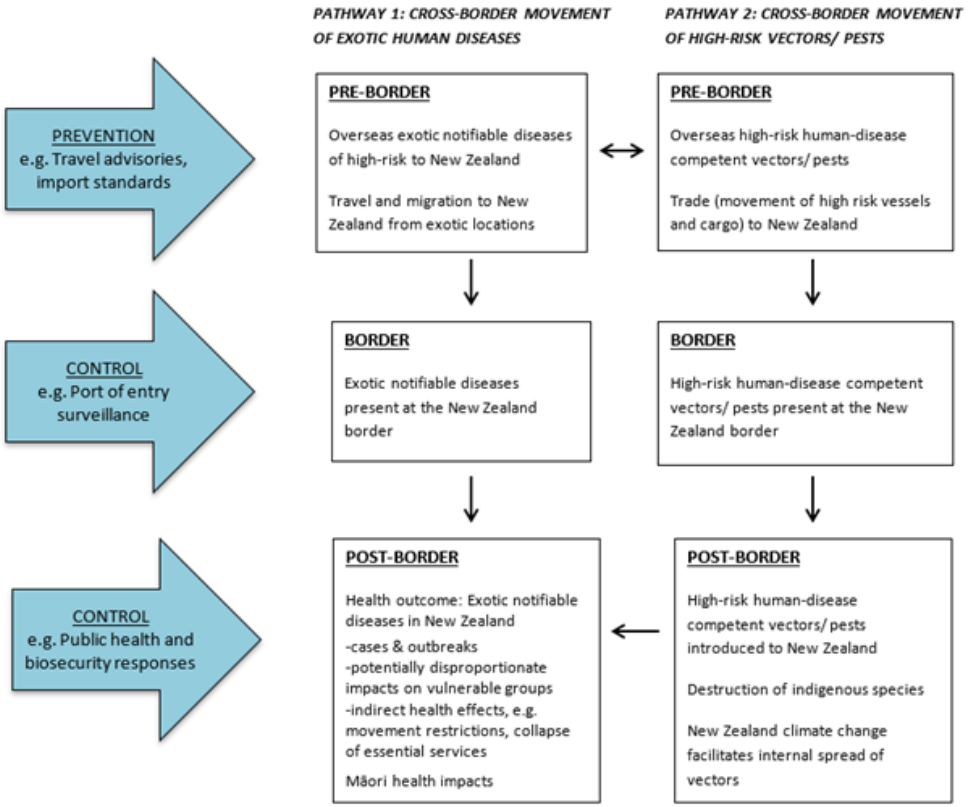
CURRENT DOMAINS

4 indicators covering NZ Border Health



1. Mosquito-borne disease in New Zealand (Formerly "Border Health in New Zealand")
   2019 data
2. Overseas infectious diseases of priority concern.
   2021 data
3. Exotic mosquito species established in NZ
   2020 data
4. High-risk pests caught at the New Zealand border
   2020 data

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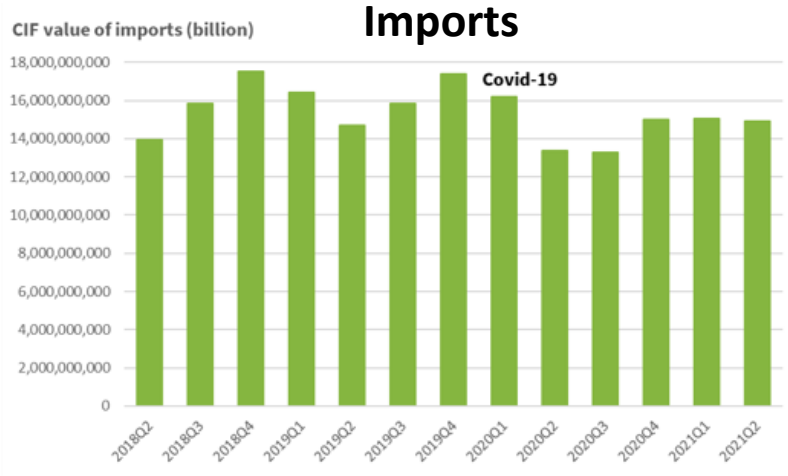
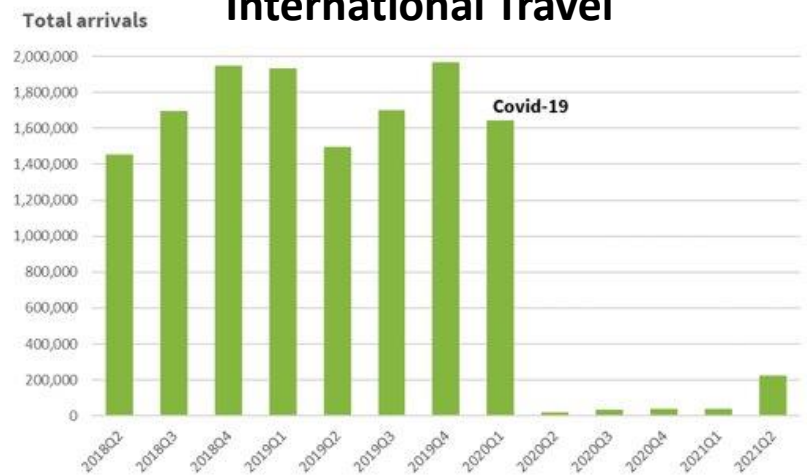
Covid-19

Imports



International Travel



Changes due to Covid:

- Imports remain relatively stable
- International travel has decreased by 98%
- Covid is the first PHEIC to enter NZ since 2009 (swine flu).

Border Health Domain Review

Indicator	Definition	Data source(s)	Environmental Health Indicator Selection Criteria									
			Available data (easily, reliably extracted)	Scientifically valid (EH link)	Sensitive (to detect changes)	Consistent (other EHIs elsewhere)	Comparable (to allow analysis over time)	Methodologically sound measurement	Intelligible and easily interpreted	Able to be disaggregated	Timely	Public health impact

- Covid will not be the primary focus of the domain (MoH, StatsNZ & ESR all cover the topic in detail).
- Evaluation of StatsNZ travel data.

Determine the scope of the domain

1. What are the priority diseases at New Zealand's border?
   Currently exotic mosquito borne, respiratory and PHEIC diseases

2. What data sources are available internationally (especially in the Asia-Pacific)?

Crossover with EHI Domains

Climate Change:

- Projected migration of mosquitoes in NZ.
- Climate conditions suitable for both mosquito breading and viral propagation.

Social Vulnerabilities:

- Impact of crowded housing on disease spread
- Impact deprivation has on individuals abilities to respond to outbreaks
- Risks related to New Zealand's aging population

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If you have any questions about the domain, please feel free to contact us:

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EHI Email: ehinz@massey.ac.nz

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UV EXPOSURE DOMAIN

Stakeholder Presentation

Got a question?
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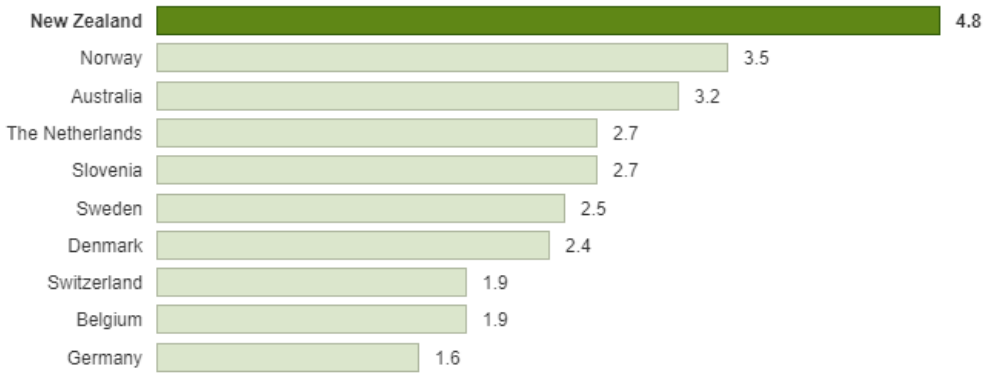
CURRENT DOMAINS

4 indicators covering UV and its impact on health in NZ

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Auckland	13	11	7	4	2	2	3	5	6	8	11	13
Wellington	13	9	6	3	2	1	2	4	5	8	11	12
Christchurch	12	8	5	3	1	1	2	3	4	8	10	11
Central Otago	10	8	5	2	1	1	1	3	4	7	10	11
Invercargill	8	7	4	2	1	1	1	2	3	5	9	10

Figure 3b: Estimated melanoma mortality rates by country, 2018 (rate per 100,000)



- UV Levels
- Melanoma (which covers both registrations and mortality)
- Non-Melanoma Skin Cancer Mortality
- Vitamin-D Deficiency

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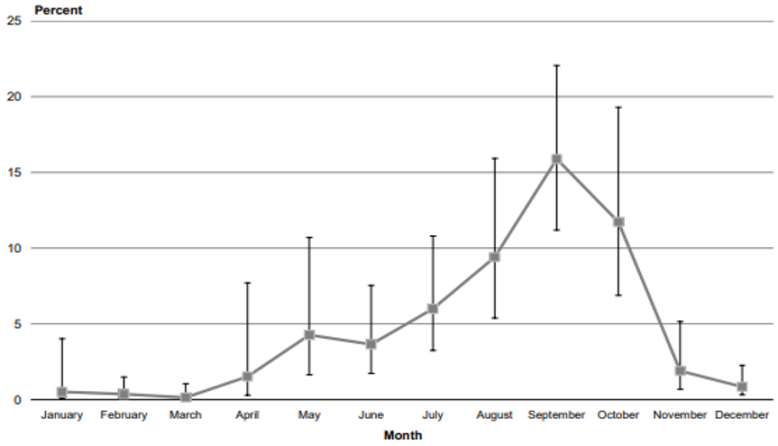
FUTURE INTERESTS

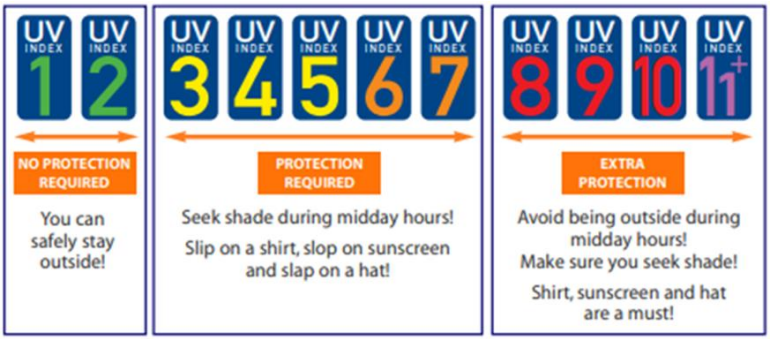
Estimated proportion of NZ deficient in 2008/09



Vitamin D:

- Current data from 2008/09 adult nutrition survey.
- Estimates made for population based on 3099 blood samples taken across NZ.
- If/when new data becomes available a factsheet may be produced.

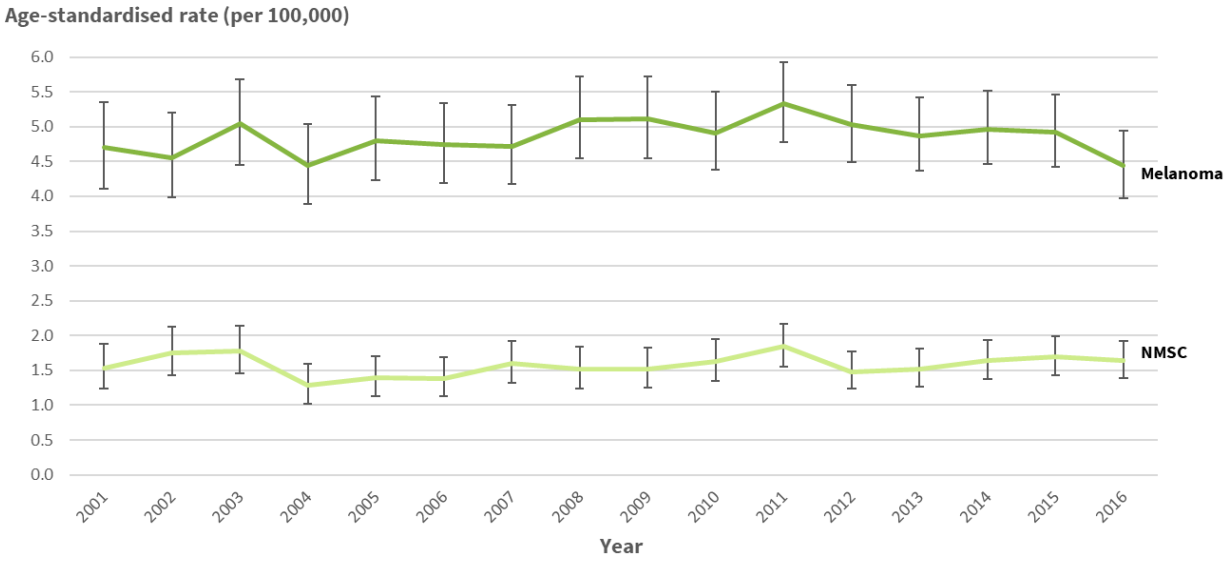
SunSmart promotional material



UV Index:

- Past presentations have used NIWA graphics to illustrate levels by time for different parts of the country.
- Potential to map changes in a similar way to climate change if data is available.
- Potential to link to climate change models in the future.

FUTURE INTERESTS



We have tracked skin cancer from 2001 onwards using MoH mortality data.

Potential to look at rates of other disorders such as cataracts. However that is dependent on the data available.

Both NMSC and melanoma mortality factsheets and data will be updated to 2018 data in the coming weeks

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Thank you for coming to the UV domain presentation, if there are any questions please feel free to email or call:

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EHI Email: ehinz@massey.ac.nz

ALCOHOL-RELATED HARM

Kirstin Lindberg, Principal Analyst
k.lindberg@massey.ac.nz

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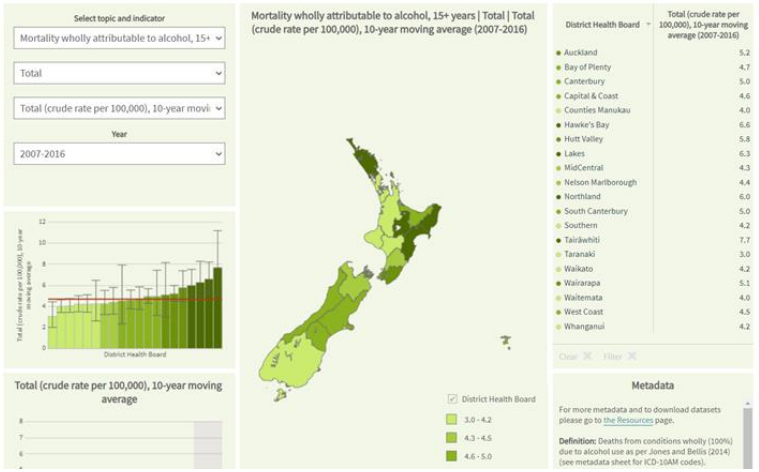
CURRENT INDICATORS

- Harms
  - Hospitalisations wholly attributable to alcohol
  - Mortality wholly attributable to alcohol *
  - Alcohol-related crashes – ON HOLD
- Alcohol use
  - Hazardous drinking
  - Heavy episodic drinking*
- Alcohol environment
  - Alcohol licence outlet density



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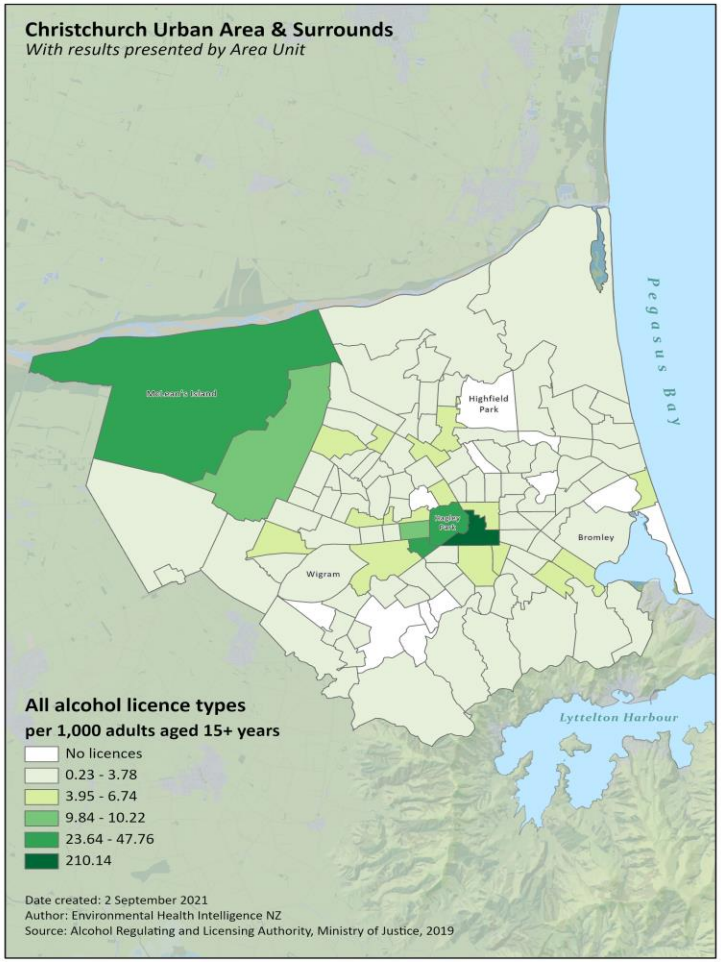
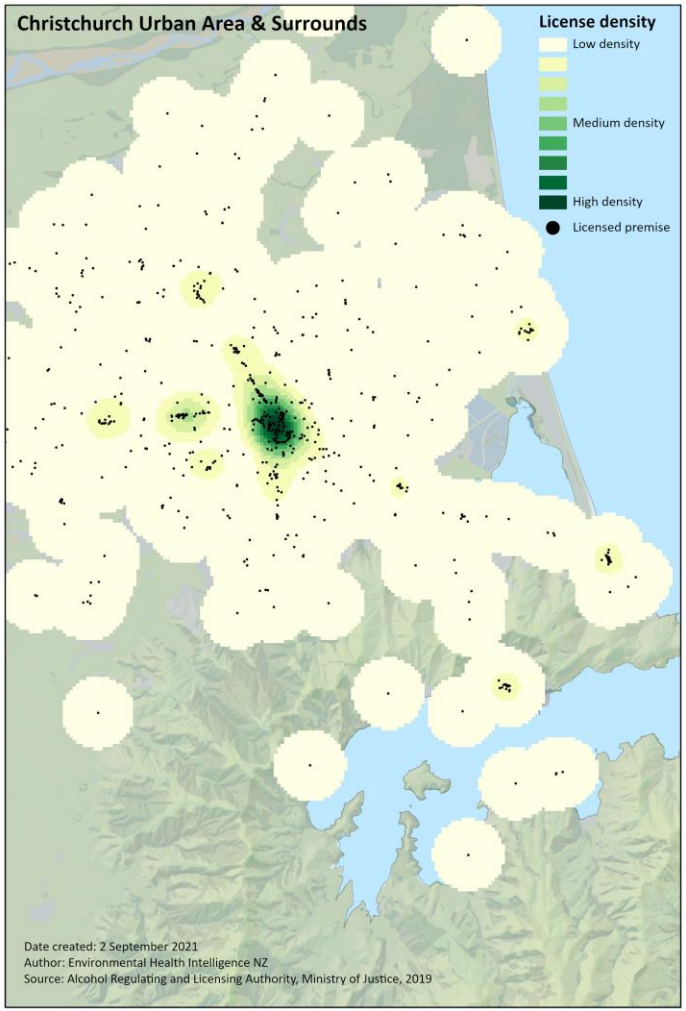
ALCOHOL OUTLET LICENCE DENSITY – ACCESS & AVAILABILITY

- Updating with Dec 2019 data (pre-COVID19)
- Can also produce density per child (0-14 years)
  - Form of advertising exposure to children
- Prioritising urban areas for analysis
- Additional outputs
  - Maps on request, natural breaks
  - Spatial clustering in urban areas, heat map

ALCOHOL OUTLET LICENCE DENSITY- EXAMPLES





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OTHER IDEAS

- Hospitalisations
  - Review of ICD codes for hospitalisations (and mortality)
  - 2020 data results by month/quarter (COVID-19 impact)
  - Present number of cardiovascular hosps for comparison (hosp for alcohol higher even just wholly attributable)
- Future implementation
  - Affordability (HPA work)
  - Social supply of alcohol (HPA, Alcohol Use in NZ survey)
- Alcohol available for consumption? (Proxy for sales during 2020, 2021)
- HPA/University of Otago Wellington Burden of Disease

INDOOR ENVIRONMENT

Helene Marsters (pre-recorded)

Q&A - **T.H.MARSTERS@MASSEY.AC.NZ**

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INDOOR ENVIRONMENT INDICATORS

Exposure indicators

- Household crowding
- Home heating
- Maternal smoking at two weeks postnatal
- Second-hand smoke exposure in the home

Health indicators

- Lower respiratory tract infection hospitalisations (0-4 years)
- Sudden unexpected death in infancy
- Asthma prevalence (medicated) (2-14 years)
- Asthma hospitalisations (0-14 years)
- Meningococcal disease notifications (0-14 years)

SUDDEN UNEXPECTED DEATH IN INFANCY (SUDI)

Key facts

500 Over 500 babies died from SUDI between 2008 and 2017, including 48 babies in 2017.

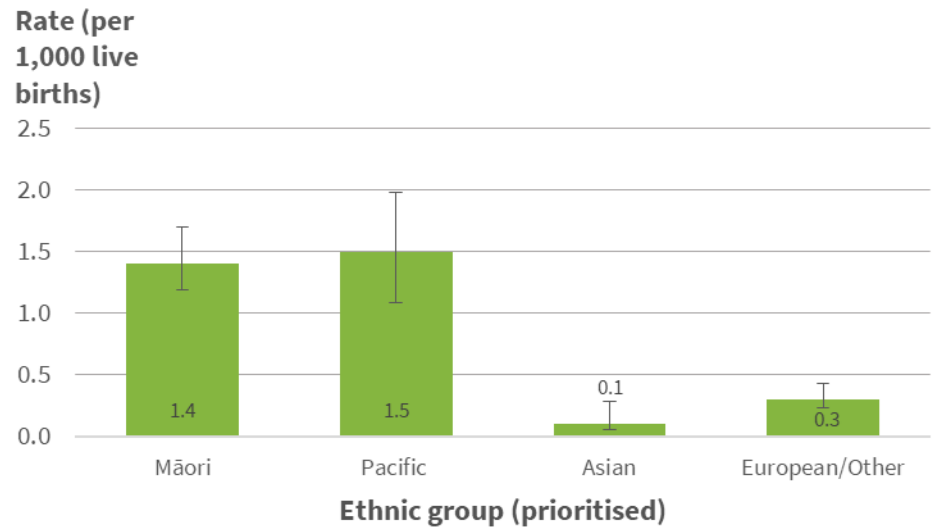
Pacific and Māori babies had five times the rate of SUDI as European/Other babies in 2013–17.

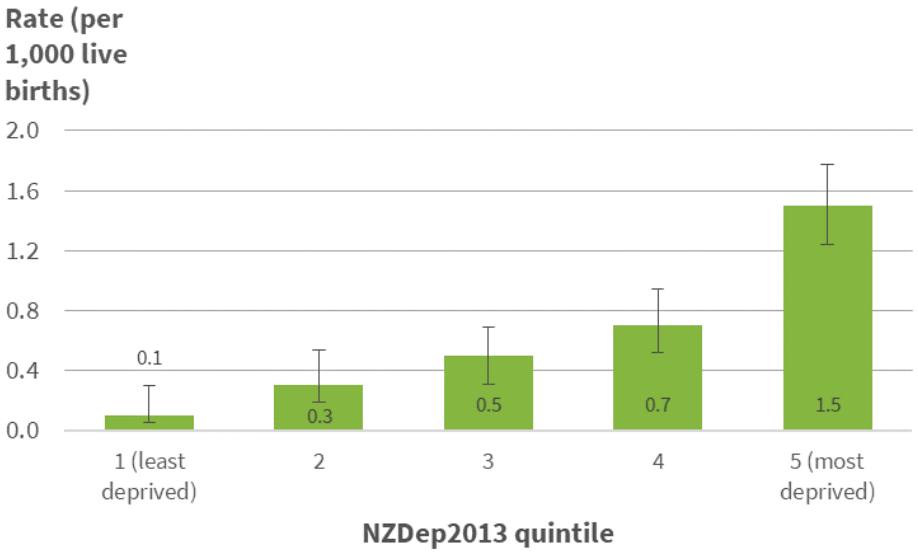
Babies of younger mothers (younger than 25 years) had higher SUDI rates than babies born to mothers in older age groups.

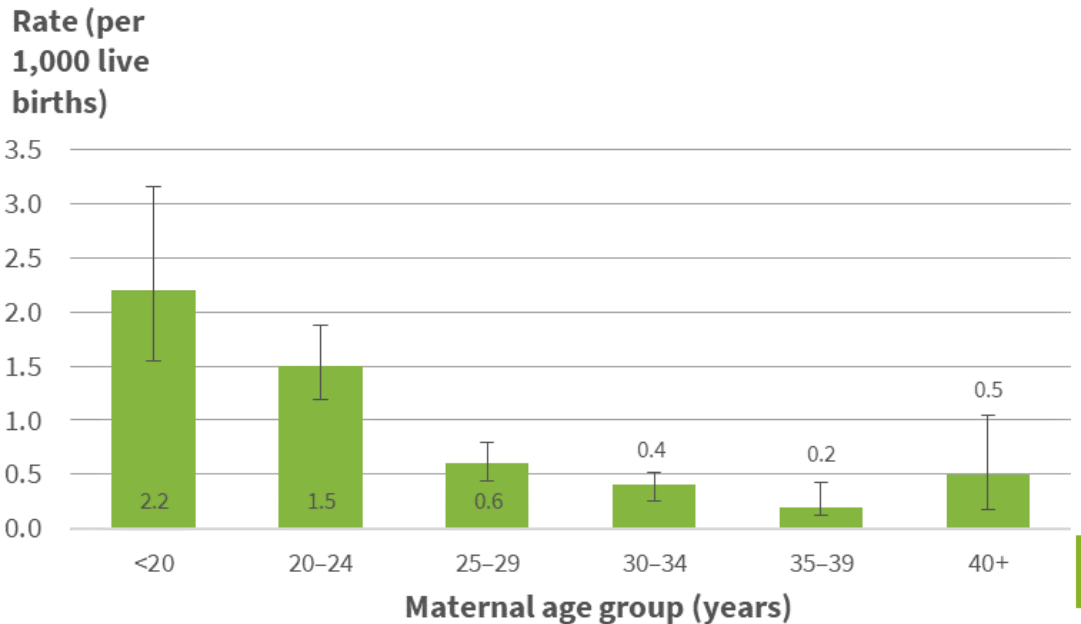
The SUDI rate for babies living in the most socioeconomically deprived areas (NZDep2013 quintile 5) was 15 times as high as babies in the least deprived areas (quintile 1).

Tairawhiti DHB's SUDI rate was three times the national rate in 2013–17.

SUDDEN UNEXPECTED DEATH IN INFANCY (SUDI)



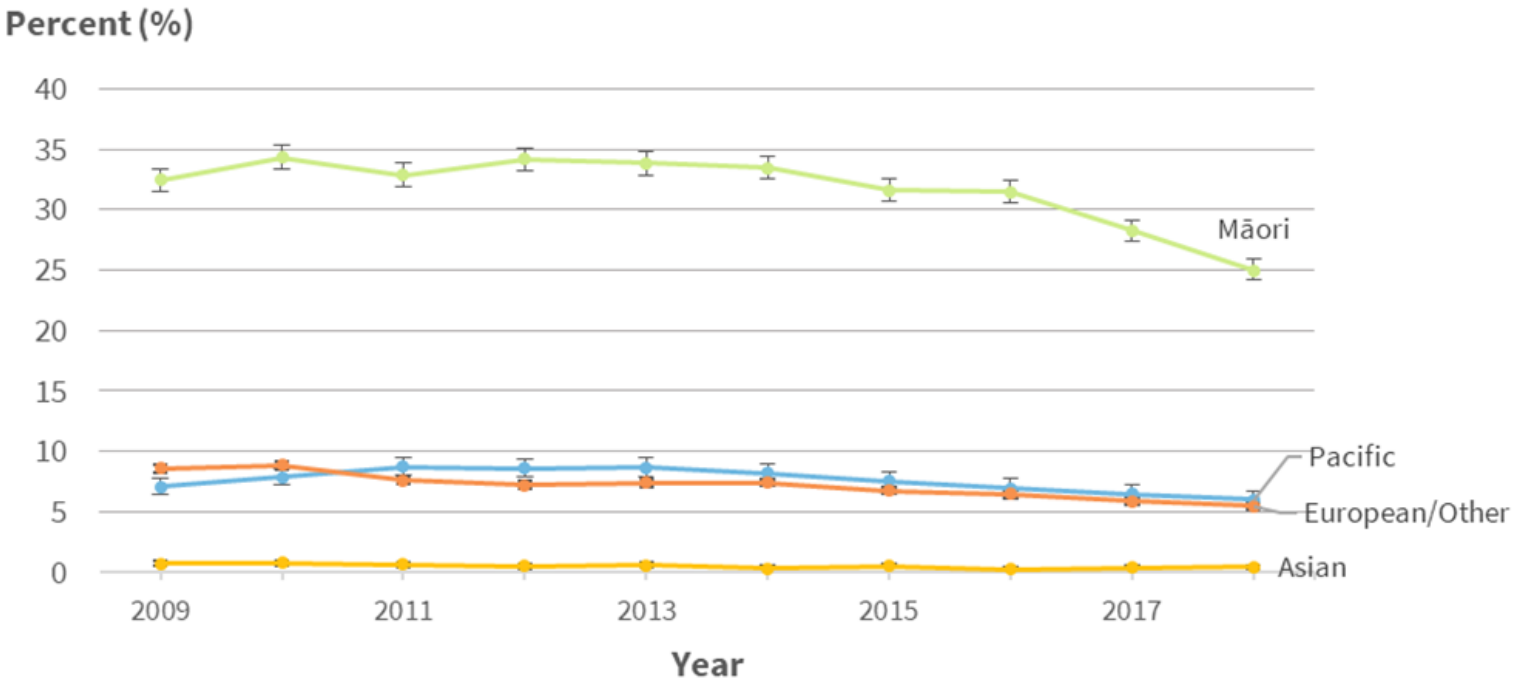




SUDDEN UNEXPECTED DEATH IN INFANCY (SUDI)

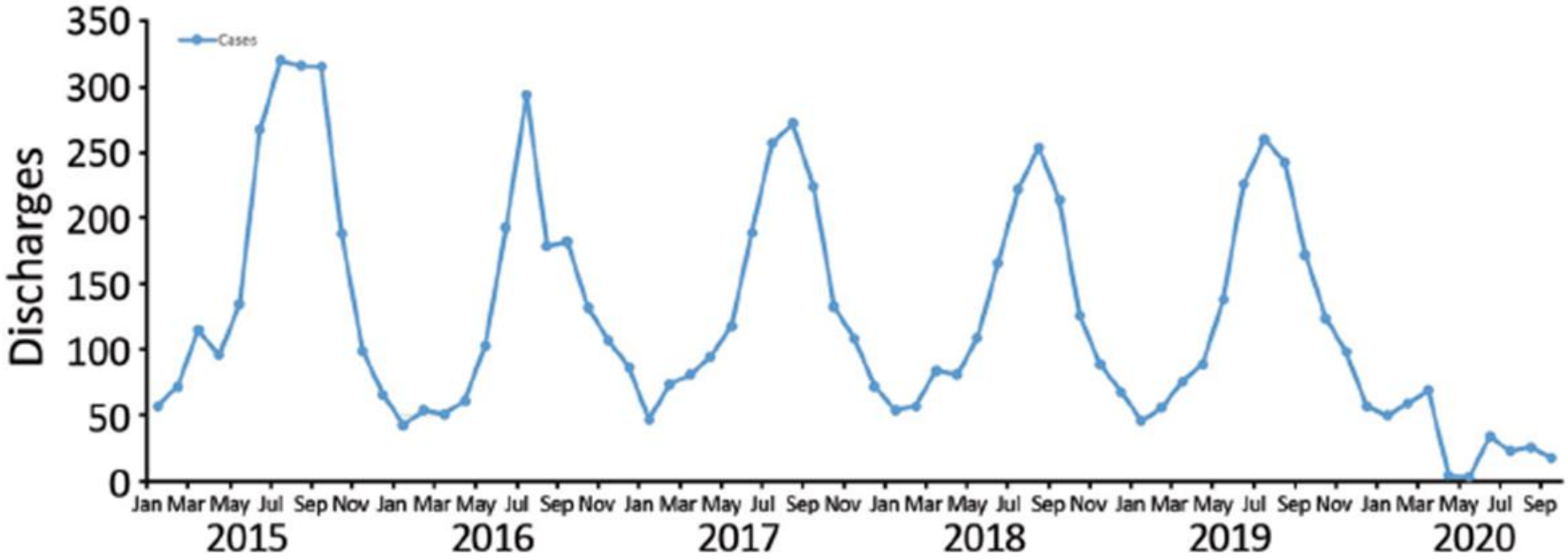
What is driving the differences in SUDI rates?

- maternal smoking
- ethnicity
- socioeconomic deprivation
- age of mothers



LOWER RESPIRATORY TRACT INFECTION HOSPITALISATIONS

How has COVID-19 lockdown measures impacted LRTI hospitalisations?



QUESTIONS?

For more info, visit our websites:

www.ehinz.ac.nz

www.healthspace.ac.nz

or email:

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EHINZ team ehinz@massey.ac.nz

(Last Chance)

Q&A

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Thanks for coming!

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