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

HEALTH COUNTS ENVIRONMENT MATTERS

Professor Barry Borman Director

ENVIRONMENTAL HEALTH INTELLIGENCE NZ (EHINZ)

- Established at College of Health, Massey University in 2010
- Primarily funded by the Ministry of Health as part of their statutory responsibility to monitor the health of New Zealanders
- Team of 12: skills in epidemiology, biostatistics, public health medicine, data and spatial analysis



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- To monitor how the environment affects the health of New Zealanders
- To provide intelligence for the development of public health policy and decision making on environmental health





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AIMS

- To monitor trends in the state of the environment
- To monitor trends in health outcomes linked to environmental hazards and exposures
- To compare the environmental health status of geographic areas
- To monitor the effectiveness of policies and other interventions on environmental health
- To raise awareness about environmental health issues
- To initiate further investigations into links between the environment and health





EHINZ – BRINGING IT TOGETHER



INFORMATION FOR ACTION



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- Concept driven, not data driven
- Stakeholder driven, client focused
- Analysis of data and interpretation
- Timely dissemination of information and intelligence
- Adding value to data collected and published by other agencies
- Not a data collection agency (apart from Hazardous Substances Disease & Injury Tool)



CONCEPT-DRIVEN SYSTEMS MONITORING NZ'S ENVIRONMENTAL HEALTH

- Environmental Health Indicators (EHIs)
- Hazardous Substances Surveillance (HSSS)
- Environmental Burden of Disease (EBoD)
- Population vulnerability to natural hazards
- New Zealand Congenital Anomalies Registry (NZCAR)
- PAWS (people-animals-wellbeing-surveillance) a collaboration with Massey University's EpiCentre





AN ENVIRONMENTAL HEALTH INDICATOR

"...is an expression of the link between environment and health, targeted at an issue of specific policy or management concern and presented in a form that facilitates interpretation for effective decision-

making"

Corvalan, Briggs and Kjellstrom 2000





ENVIRONMENTAL HEALTH INDICATOR



- A measurable variable used as a representation of an associated (but non-measured or non-measurable) factor or quantity
- Can describe the link between the environment and health
- Based on known or plausible cause-and-effect relationships between the environment and health
- Provide key evidence to help decision-makers, and raise awareness of environmental health risks, to improve human health
- Help identify potential risks to human health, including emerging risks
- Can help to guide policy actions, target action and allocate resources





ENVIRONMENTAL HEALTH INDICATORS



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- Good indicators are extremely difficult to define and compile, and cannot be chosen at random
- Sets of indicators are needed, because one indicator rarely tells the whole story
- Heavily biased by the perceptions and priorities of those who select them
- A science-based rationale is needed for choosing a useful and balanced set of indicators for the issues we are interested in
- If used effectively, they have to be part of a real, evidence-based and participatory culture of decision-making



FRAMEWORK FOR DEVELOPING THE SUITE OF NZ ENVIRONMENTAL HEALTH INDICATORS

 Based on the Multiple Exposures Multiple Effects (MEME) framework (Briggs 2003)



THE MEME FRAMEWORK



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- Acknowledges the multiple links between environmental exposures and health effects, including the wider social, economic, and demographic conditions
- Each indicator generally describes one aspect of the environment-health relationship (such as exposures in the environment, or health outcomes)
- Flexible enough to be used to monitor a broad range of environmental health topics
- Underpinning the framework is a focus on social and demographic contexts, especially vulnerable populations





THE **PROCESS** FOR DEVELOPING THE NZ EHIS



SELECTION CRITERIA FOR EHIs

RATIONALE

Must have data that is easily and reliably extracted Available data Must have an established, scientifically sound link to the environmental Scientifically valid health issue Should respond relatively quickly and noticeably to changes, but not Sensitive show false movements Should be consistent with those used in other indicator programmes, Consistent including internationally, to allow comparisons Comparable Should be consistent to allow comparisons over time Methodologically sound Measurement needs to be methodologically sound measurement Should be simple enough to be easily interpreted, and intuitive, in the Intelligible and easily interpreted sense that it is obvious what the indicators are measuring Need to be able to be broken down into population subgroups or Able to be disaggregated areas of particular interest, such as ethnic groups or regional areas Data needs to be collected and reported regularly and frequently, so that Timely the indicator reflects current trends Need to be about an environmental health issue that has a significant Public health impact public health impact. The impact may be through affecting a large part of the population, a vulnerable population, being relevant for Maori health, or

having substantial policy relevance

DISSEMENTATION – CRITICAL ELEMENT PROVIDING INFORMATION FOR ACTION

- EHI website (www.ehinz.ac.nz) reports on the selected indicators within the domains
- Intuitive dashboards for exploring indicators within the domains
- Factsheets with updated indicator information distributed electronically to clients
- <u>Healthspace</u> Puna Ora (https://healthspace.ac.nz/) an on-line visualisation of the health related-data at the various geographic levels (eg, DHB, territorial authority etc)





WWW.EHINZ.AC.NZ



Information for action

Our Environmental Health Indicators give you information and statistics on how the environment affects the health of the New Zealand populations.

Latest News

Māori children had traffic injury mortality rates which were three times higher than those of children of other ethnicities 10 February 2021



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INDICATOR LIST: CAN BE SORTED BY DOMAIN, TOPIC, INDICATOR OR SEARCHED BY KEY WORDS

ENVIRONMENTAL HEALTH INDICATORS

About the indicators

What are Environmental Health Indicators?

What is environmental health?

Indicator list

Links to other environment and health monitoring

Air quality

Recreational water

Drinking-water quality

Indoor environment

Transport

Hazardous substances

Climate change

Population vulnerability

Border Health

UV exposure

Indicator list

Q Search in table

Page 1 of 4 🔉

Domain 🔺	Торіс	Indicator
Air quality	Wood and coal fires	Number of households using wood fires for home heating
Air quality	Wood and coal fires	Number of households using coal fires for home heating
Air quality	Particulate matter	Annual average PM10 levels at monitoring sites
Air quality	Particulate matter	Exceedances of the national standard for PM10, including maximum PM10 levels
Air quality	Other air pollutants	Monitoring sites exceeding the WHO annual average guideline for nitrogen dioxide
Air quality	Other air pollutants	Monitoring sites exceeding the national environmental standard (one-hour average) for nitrogen dioxide
Air quality	Other air pollutants	Monitoring sites exceeding the WHO daily guideline for sulphur dioxide
Air quality	Other air pollutants	Monitoring sites exceeding the national environmental standard (one-hour average) for sulphur dioxide
Air quality	Other air pollutants	Carbon monoxide 8-hour maximum levels at monitored sites
Air quality	Health effects of air pollutants	Estimated number of restricted activity days associated with air pollution
Air quality	Health effects of air pollutants	Estimated number of of cardiac and respiratory hospital admissions associated with air pollution
Air quality	Health effects of air pollutants	Estimated number of premature deaths associated with air pollution
Air quality	Motor vehicles	Number of motor vehicles in the fleet, by vehicle type and fuel type
Air quality	Motor vehicles	Number of motor vehicle registrations, by vehicle type and fuel type
Air quality	Motor vehicles	Average age of vehicle fleet
Alcohol-related harm	Hazardous drinking	Hazardous drinking

LANDING PAGE FOR EACH DOMAIN: BACKGROUND, KEY FACTS, DIFFERENT TOPICS



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INTERACTIVE DASHBOARDS

Indicator

Year(s)

2018

Drinking-water quality

This section provides data about drinking-water quality and health in New Zealand. Find out about population access to drinking-water and human health effects.



areas in New Zealand.

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CAMPYLOBACTEROSIS NOTIFICATIONS, 2001-18





Water quality | Notifications of potentially water-borne diseases



District Health Board	~	Count	Crude rate	Campylobacteriosis notifications (age- standardised rate per 100,000) (2018)
Auckland		536	99.5	99.8 🔺
Bay of Plenty		216	91.2	89.3
Canterbury		674	119.7	119.8
e Capital & Coast		360	113.7	108.0
Counties Manukau		554	99.3	97.5
 Hawke's Bay 		288	160.9	159.9
Hutt Valley		175	117.2	109.8
Lakes		144	130.8	132.7
 MidCentral 		283	158.7	165.9
 Nelson Marlborough 		215	143.1	137.7
 Northland 		229	128.3	134.5
 South Canterbury 		142	238.3	245.8
 Southern 		683	208.0	215.0

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LANDING PAGE: CLIMATE CHANGE

ENVIRONMENTAL HEALTH INDICATORS

About the indicators

Air quality

Recreational water

Drinking-water quality

Indoor environment

Transport

Hazardous substances

Climate change

About climate change and health

Indicators at a glance - Climate change

Temperature

Drought

Monitoring the health effects of climate change

Energy use

Population vulnerability

Border Health

UV exposure

Children

Animals & human health

Alcohol-related harm

Climate change

This section describes changes in temperature, rainfall and drought, and health impacts.



About climate change and health



Indicators at a glance - Climate change



Temperature

Describes changes in New Zealand's temperatures over time, and possible impacts on health.

Drought



Statistics on rainfall and drought in New Zealand over time, and possible impacts on health.



Monitoring the health effects of climate change

How climate change may affect the health of New Zealanders, and who might be most at risk.

Energy use

Describes changes in New Zealand's energy use over time.

ental Health New Zealand

CLIMATE CHANGE











RECREATIONAL WATER

Marine bathing sites:



- Only one in six rivers can be considered safe to swim in.
- Bathing sites in the ocean are much more likely to be safe to swim at than those in freshwater rivers or lakes.
- Swimming sites in urban areas may be less likely to be safe to swim than rural areas – but not by much.

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HEATMAP OF EHIS, DHBs

								Dis	trict Heal	th Board (DHB)								
			Counties		Bay of								Hutt	Capital &	Nelson	West		South	
Vorthland	Waitemat	Auckland	Manukau	Waikato	Plenty	Tairā whiti	Lakes	Hawke's	Taranaki	Whanganui	MidCent	r Wairarap	Valley	Coast	Mariboro	Coast	Canterbury	Canterbur	Southern
DHB	a DHB	DHB	DHB	DHB	DHB	DHB	DHB	Bay DHB	DHB	DHB	al DHB	a DHB	DHB	DHB	ugh DHB	DHB	DHB	y DHB	DHB
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19	2	1	5	10	13	20	17	16	11	18	15	7	4	3	9	14	6	12	8
5	2	1	4	13	14	10	7	16	15	19	20	6	17	11	12	18	9	3	7
12	11	20	13	9	10	4	18	17	15	16	3	6	19	14	5	2	7	1	8
17	7	10	13	18	16	20	19	8	9	12	14	11	15	6	3	2	4	1	5
16	5	7	16	18	6	20	12	12	15	19	9	1	12	9	1	1	9	1	8
20	7	5	17	9	18	13	19	16	14	15	12	1	11	10	1	1	6	1	8
9	14	20	19	16	6	18	15	4	13	11	12	2	17	8	1	7	10	3	5
16	13	19	20	12	11	18	16	4	15	8	9	5	10	13	6	2	7	1	3
20	12	18	17	14	7	19	16	9	6	8	15	3	10	11	1	13	2	4	5
19	13	18	20	14	8	17	16	9	7	6	15	2	12	10	1	11	4	3	5
19	16	18	20	14	7	17	15	13	6	9	12	4	10	11	1	8	2	3	5
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		10	4	46	45	10	47	11	12	14	11	10	20	10	5	10		40	10
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20	5	7	15		19	14	17	à	6	Å	13		-		10	18	11	16	12
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FACTSHEETS

MASSEY UNIVERSITY UNIVERSITY UNIVERSITY Unalligence New Zealand

Notifications of potentially waterborne diseases

This factsheet presents information on how New Zealander's health is affected by three p waterborne diseases: campylobacteriosis, giardiasis and cryptosporidiosis.

Key facts

The age-standardised campylobacteriosis notification rate was 132 per 1 (6,463 notifications). This was approximately the equal lowest rate since

The age-standardised notification rate for cryptosporidiosis was 38 per ! (1,551 notifications). This was approximately the equal highest with 200

Background information Waterborne diseases are, by definition, transmitted by ingesting contaminated w

or through recreational use (eg. while swimming). Campylobacteriosis, giardiasis and cryptosporidiosis are gastrointestinal diseas

the Compylobocter bacteria, Giordio parasite and Cryptosporidium parasite resp are transmitted through contact with the faeces of infected animals and humar contaminated food or water, or contact with infected animals or humans. Youn immune-compromised people are more likely to be infected, and to have more

Campylobacteriosis is the most common of these diseases. For campylobacte the main transmission source in New Zealand, with poultry-associated strain: to be found in urban than rural areas (Mullner et al, 2010). However, food-rela than a 50% decrease in cases in 2008 (Sears et al, 2011; ESR, 2017). Other trai untreated water that is contaminated with Compylobocter from animal facer campylobacteriosis (Gilpin et al., 2013). These transmission routes may beco

food-borne campylobacteriosis cases decrease.

Notifications of potentially waterborne diseases | December 2020

Q View other Air Quality indicators

Main types of heating used to heat dwellings

Key facts



Q View oth drinking

One-third of private dwellings in New Zealand used a wood burner or a pellet fire as their main type of heating in 2018.

The type of heating used to heat dwellings varies across the country, wood burner or pellet fires were more common in the South Island, whereas gas heaters were more common in the North Island.

The use of coal burners ranged from 0.1% of dwellings in Christchurch City to 42.0% in Grey District.

Home heating emissions are a major source of air pollution

In 2015, home heating emissions from burning wood or coal were the largest source of New Zealand's key air pollutant, particulate matter (PM25 and PM10). Other home heating emissions from wood and coal fires include gases such as nitrogen dioxide and carbon monoxide, heavy metals such as arsenic and lead, as well as organic matter (Ministry for the Environment and Stats NZ 2018). Apart from contributing to outdoor air pollution, home heating emissions can also worsen air quality within the home.

In New Zealand, air pollution due to PM peaks in the winter months. Calm and frosty conditions require the extended use of home heating and allow air pollutants to become trapped close to the ground (Ministry for the Environment and Stats NZ 2018).

Short-term and long-term exposure to air pollution, especially PM10 and PM25, is associated with a wide range of health impacts. Mild impacts include shortness of breath or coughing. More severe impacts include premature death from cardiovascular and respiratory problems, and an increased risk of lung cancer (Ministry for the Environment and Stats NZ 2018; WHO 2013).

WARSSEY ehinz Environmental Health Healingence New Zealance

Q <u>View other</u> <u>Transport indicators</u>

Road traffic injuries in children aged 0-14 years

This factsheet presents indicators of the number of deaths and hospitalisations from road traffic injuries

ley facts

- In 2016, 12 children aged 0-14 years old died from traffic-related injuries. The mortality rate for such injuries remained mostly unchanged between 2010 and 2016. In 2019, 269 children were hospitalised for traffic-related injuries. The hospitalisation rate has
- In 2019, vehicle occupants represented roughly half of all non-fatal injuries among children and
- Maori children had traffic injury mortality rates which were three times higher than those of
- children of other ethnicities and represented 52% of all traffic-related deaths between 2007-16.
- Half of all DHBs had fewer than five child deaths in the ten years between 2007-16. The highest mortality rate occurred in Hawke's Bay DHB, while Whanganui DHB had the highest

ealth impact of road transport accidents on children

slated deaths and injuries are the primary health impact of road transport in New Zealand (Briggs et al vis is evidenced by transport injuries being among the top ten leading causes of health loss in children A years in 2013 (Ministry of Health 2013). There are several factors that place children at special risk of

cal development - Children's bodies are less resilient to damage than those of adults. For instance, 's ribs tend to bend inwards rather than break when pressure is applied, which results in the force lision being transferred directly to the heart and lungs. This risk is often compounded by seatbelts Ind for adults failing to properly restrain a child. As a child's body is relatively top-heavy, there is also

uries in children aged 0-14 years | February 2021

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Page 1

The age-standardised notification rate for giardiasis was 31 per 100,000 notifications). This has remained unchanged since 2015. Notification rates for potentially waterborne diseases continued to be 0-4, people of European/Other, and people living in less deprived or n



- An online data visualisation tool for exploring health data at various geographic levels
- Covers topics such as environmental health, alcohol-related harm and other important NZ health issues

New Zealand Health Topics

Explore our indicators and data within these topics



Environmental health Ngā Tūtohu Taiao



Alcohol-related harm Pānga waipiro



Health status Mana hauora



Population information Tatauranga taupori



Māori health Hauora



Pacific people's health Te Hauora ō ngā iwi ō te Moana-nui-ā-Kiwa



Mental health Hauora hinengaro



Child and youth health Ngā tamariki

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 Indicators are presented in a range of geographies including district health boards, territorial authorities, regional councils and area units

Explore our interactive data

These dashboards let you explore regional data about environmental health.

District Health Board

District health boards (DHBs) are responsible for the health of the people living in their district. There are 20 DHBs in New Zealand. Territorial Authority

Territorial authorities (TAs) include city councils and district councils. TAs provide services and infrastructure for their local community. There are 67 TAs in New Zealand.

View DHB map

View TA map

Regional Council

Regional councils (RCs) are responsible for many environmental and public transport matters in their region. There are 16 regional councils (including unitary authorities) in New Zealand.

View RC map

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 Interactive dashboards allow data to be displayed on maps, bar graphs, tables and time series

Select topic and indicator	Recreational water quality Agriculture and Livestock Livestock density, by type Total (animals per km²) (2017)	Territorial Authority	Count (000)
Recreational water quality		 Southland District 	4,028
Agriculture and Livestock		Stratford District	325
Agriculture and Elvestock		• Tararua District	1,613
		Tasman District	378
Livestock density, by type		Taupô District	502
		Tauranga City	2
		Thames-	
Total (animals per km²)	×	Coromandel District	80
Year(s)	<u> </u>	• Timaru District	665
		Upper Hutt City	4
2017	Stark.	 Waikato District 	827
		 Waimakariri District 	347
800		Waimate District	642
		 Waipa District 	382
FT 600		Wairoa District	617
Į.		Waitaki District	960
5 4		 Waitomo District 	806
Ē 400	6 Ch d	 Wellington City 	17
atal (an		 Western Bay of Plenty District 	183
2 200		Westland District	83
	A T	Whakatāne District	194
Territorial Authority	e mart	Clear 🗙 Filter	
Total (animals per km ²)	and the second sec		Metadat
	Territorial Authority		
1,000	7.0 - 67.5	Indicator Factsheet a	nd metadata
800	67.6 - 138.5	Definition: Density of cattle, beef cattle and	livesto <mark>ck</mark> by deer) per sq
600	138.6 - 181.9	land area.	
400	182.0 - 244.3	Source: Statistics Nev	v Zealand An
200 0 0 0	244.4-684.5	Production Survey an	id Agricultura
0 2007 2012 2017	Not Available	For more information water section).	, go to <mark>EHI w</mark>
▶ ≪ ▶ 2007 2	012 2017 Guide Share		

Print dashboard 🖶

Authority	Count (000)	Total (animals per km ²) (2017)	
 Southland District 	4,028	136.31	*
Stratford District	325	150.26	
• Tararua District	1,613	369.45	
Tasman District	378	39.32	
Taupô District	502	79.28	
 Tauranga City Thames- 	2	Not Available	
Coromandel District	80	36.07	
• Timaru District	665	243.37	
Upper Hutt City	4	Not Available	
Waikato District	827	187.75	
Waimakariri District	347	156.27	
Waimate District	642	180.64	
 Waipa District 	382	260.1	
Wairoa District	617	151.4	
Waitaki District	960	135.1	
Waitomo District	806	228.11	
Wellington City	17	Not Available	
Western Bay of Plenty District	183	<mark>9</mark> 3.81	
Westland District	83	7.04	
Whakatāne	194	43.65	+

type (sheep, dairy uare kilometre of total

nual Aericultural al Census.

ebsite (recreational

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Reports for local areas (eg, alcohol-related harm topic)

Drinking pattern

Hospitalisations wholly attributable to alcohol (including ED visits > 3 hours), 15+ years, by drinking pattern, 2013–2018 (agestandardised rate per 100,000)



	Wellington City			New Zealand				
	Rate	Lower CI	Upper Cl	Rate	Lower CI	Upper Cl		
Acute intoxication	140.2	132.7	147.9	79.3	78.1	80.6		
Chronic drinking	76.0	70.7	81.5	63.3	62.3	64.4		

Notes: ED visits > 3 hours are emergency department only visits of > 3 hours of care, which have only been routinely recorded in the NMDS from 2012. N/A means the rate was suppressed because the number of hospitalisations was < 20. Source: National Minimum Dataset (NMDS), Ministry of Health

The age-standardised rate ratio of hospitalisations for conditions related to a drinking pattern of acute intoxication, compared to conditions related to chronic drinking, in **Wellington City** was 1.8 (1.7 - 2.0), for the six year period of 2013-18.

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HAZARDOUS SUBSTANCES SURVEILLANCE SYSTEM (HSSS)

 Monitors diseases, injuries and deaths from hazardous substances exposures





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THE HAZARDOUS SUBSTANCES DISEASE AND INJURY REPORTING TOOL (HSDIRT)

- An electronic form that simplifies notification of hazardous substance injuries, from primary health care to Medical Officers of Health
- Developed in conjunction with bestpractice Decision Support
- HSDIRT has been designed to allow notification of:
 - lead absorption 0.48umol/l (soon to reduce to 0.24umol/l)
 - injuries and diseases due to hazardous substances
 - poisoning arising from chemical contamination of the environment (eg, agrichemical spraydrift)







Exposure Event	Assessment	Notifier / Patient Details	PHU Review				
Send notification to Med	lical Officer of Health at:	Please Select	~				
Exposure Event							
Exposure route	🗌 Ingestion 🔲 Inhalati	on 🗌 Skin contact 🗌 Eye	contact 🗌 Unknown				
Date exposure began	OR	Month/Year	OR Unknown				
Exposure length	◯ < 1 day ◯ between	1 day & 1 month ○ ≥1 montl	h 🔾 Unknown				
Place of exposure Home Workplace School/ECC							
	🗌 Public place 📃 Unkr	nown 🗌 Other					
Intent	🔘 Unintentional 🔘 Inte	entional 🔘 Unknown					
Is this case known to be linked to other cases of the same exposure event? O Yes O No							
Substance							
Substance categories	Household chemical	🗌 Agrichemical 📃 Industria	al chemical				
	Fireworks/explosive	Lead Unknow	n				
	Other						
Examples: Househ Agriche	old: cosmetic, dishwashing powd mical: pesticide, animal remedies	er Industrial: s s, spraydrift Other: merc	olvent, chlorine, fumigant cury, arsenic				
Substance name (comp	lete at least 1 field)						
Chemical name	Product	name Comm	on name Unknown				
e.g. sodium hypochlorite	Janola	· · · · · · · · · · · · · · · · · · ·	bleach				
∄							
Exposure Event	Assessment	Notifier / Patient Details	PHU Review 📃 🕨				
Ref	resh Park	Cancel	Submit				

nd

LEAD ABSORPTION NOTIFICATIONS

Pacific people were most affected by lead exposure from their occupation in 2014–19

Lead absorption notifications

This factsheet presents a national indicator, which allows us to monitor lead absorption.

Key facts



There were 204 lead absorption notifications in 2019, an increase since 2017. The increase was driven by growth in notifications among adults.



Painters remain the most notified occupational group with lead absorption.



In 2019, gunshot wound ranked as one of the most common sources of non-occupational/unknown lead exposure.



Pacific people were most affected by lead exposure from their occupation in 2014–19



Due to certain manual labour work dominated by males, there have been more notifications for males than for females every year since 2014, and males tend to have higher blood lead levels than females.

Hauora mo te Talao - Aotearoa

HAZARDOUS SUBSTANCES NOTIFICATIONS FACTSHEET

 In 2019, most notifications involved household chemicals, which was the most common cause of injury for children under five years old. This was the same in 2018.

Key facts



In 2019, there were a total of 98 hazardous substance notifications. This is a 30% decrease from 2018 (140 notifications).



Children under the age of five years had the highest notification rate in 2018 and 2019.



In 2019, most notifications involved household chemicals, which was the most common cause of injury for children under five years old. This was the same in 2018.



More than half (59%) of the notifications were males in 2014-19.



From 2014–19, ingestion was the most common route of exposure for children under five years. For adults, their most common route of exposure was inhalation.



The highest hazardous substances injury notification rates occurred in the most deprived areas (NZDep 2018 quintile 5) in 2014–19.



From 2014 – 19, most notifications were injuries that occurred in the home.

HAZARDOUS SUBSTANCES-RELATED HOSPITALISATIONS

Every year children under five years have the highest hazardous substances-related hospitalisation rates, although the rate has decreased from 2006 to 2019.

Key facts



In 2019, there were 463 unintentional hazardous substances-related hospitalisations, and the number of hospitalisations has decreased since 2006 (563 hospitalisations).



Children under five years continue to have the highest hazardous substances-related hospitalisation rates compared to other age groups.



The most common cause of injury in children under five years was from 'solvents, hydrocarbons and corrosive' substances.



Males have had consistently higher rates of hazardous substances-related hospitalisations than females since 2006.



Māori had a higher rate of hazardous substances-related hospitalisations than non-Māori since 2006.







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