



PUBLIC HEALTH POST

Public Health for Primary Care in Wellington, Wairarapa and the Hutt Valley

Also available online at www.rph.org.nz

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SERIOUS SKIN INFECTIONS STILL A HOT TOPIC

The rate of hospitalisation for serious skin infections in New Zealand children is significantly higher than in comparative countries.¹ Higher rates are observed in Maori and Pacific children, preschool aged children, those living in deprived neighbourhoods, and urban areas. Pacific children under five have particularly high rates of admission to hospital for skin infection.

Skin infections tend to follow a seasonal pattern with an increase in summer and autumn. The table below of discharges for cellulitis (all ages) from Hutt Hospital illustrates the seasonal pattern, with a marked increase in discharges between November and January periods.

linen and curtain bank to help families with recurrent infections

- **Colouring in sheets for children** - for use in schools, early childhood centres, libraries, doctors surgeries
- **Healthy skin tool** (available in a range of languages) - a series of pictures and advice on what action to take and when to seek medical advice for skin infections.

Adult cellulitis pathway

A pathway for the primary care management and referral of adult cellulitis is available for primary care providers in the greater Wellington region. This can be found at: <http://hutt.healthpathways.org.nz/>.

For those who do not have direct access, Login: hutt and Password:vall3y

School intervention

In 2013 the public health nurses from Regional Public Health completed training in the management of simple skin infections, and piloted a programme that includes supplying antibiotics for impetigo and simple cellulitis under standing orders. While parents are encouraged to take their child

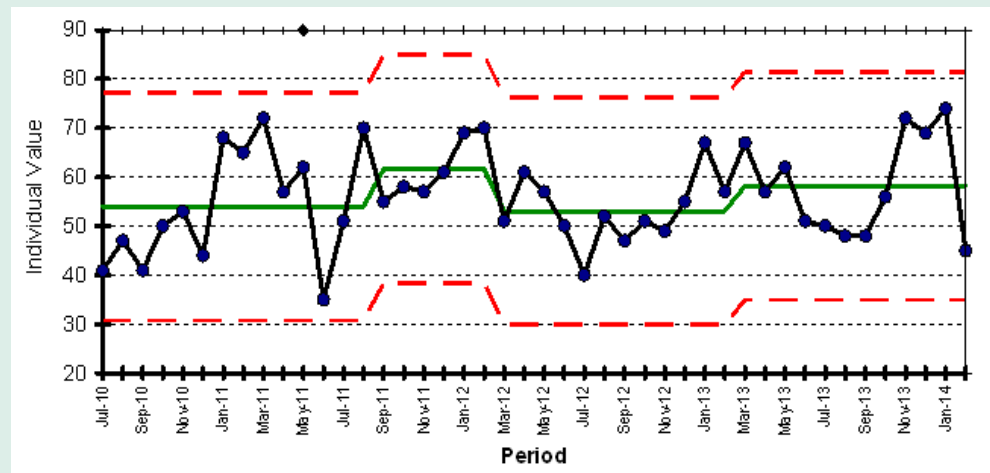


Figure 1. HVDHB : Cellulitis – Discharges All Ages July 2010 to February 2014.

Healthy skin resources for children and young people

Resources for primary care, community workers, schools, early childhood centres and families are available from the Regional Public Health website ([www.rph.org.nz - resources - health information - healthy skin](http://www.rph.org.nz-resources-health-information-healthy-skin)). These resources reinforce the message of paying attention to cuts and infections early, to prevent serious skin infections:

- **Protocols for the management of skin infections**
- **Resource for community workers** - this includes advice on basic first aid management of skin infections for the non-clinician, and contact details on services such as

to see their family doctor, in some situations this does not occur until the skin infection has developed, this is where the standing orders are useful. The standing order is under the supervision of a medical officer and information on action taken is provided back to the primary care provider. From the beginning of 2014, all trained and approved public health nurses are able to provide this service in their schools (mostly decile 1 and 2 schools). If you have any comments or feedback on this service please contact RPH@huttvalleydhd.org.nz.

References

1. O'Sullivan CE, Baker MG and Zhang J. Increasing hospitalisations for serious skin infections in New Zealand children, 1990-2007. *Epidemiol. Infect* 2010, 1-11

PATIENT PERSUASION: FACTS GIVE DOCTORS AND NURSES AN EDGE

Two 'burden of disease' studies with powerful messages

The development of robust measures of disease burden and associated risk factors, in addition to mortality rates, are a leap forward for health services around the world. New Zealand has been active in measuring, recording and reporting quality disease burden analysis to guide development of effective health policy and help determine key target areas for clinicians.

During 2013, reports were released from two separate studies about 'burden of disease'. It is useful to take time to review this important research and see how it could influence work in primary care.

Primary care is an ideal setting for considering prevention of the conditions that present at the practice, via relationships and repeat contacts that occur with patients and their families. Using the brief opportunities for preventative health care in consultations to address the most important health risk factors, facilitates the most gain for individuals and the population as a whole.

The reports *New Zealand Burden of Diseases, Injuries and Risk Factors Study, 2006–2016* and the *Global Burden of Disease Study 2010* can guide practitioners on what are the most influential and important risk factors to target. The results of these 'burden of disease' studies show what the top risk factors are and which disease processes those risk factors contribute towards.

Making sense of the two 'Burden of Disease' studies

Two recent studies released in 2013 utilising 'Burden of Disease' data for New Zealand are the *Global Burden of Disease Study 2010*, and the *New Zealand Burden of Diseases, Injuries and Risk Factors Study, 2006–2016*. The New Zealand study was designed to be compatible with the global study but there are notable differences.

The *Global Burden of Disease Study 2010*¹ presents results for 2010 and used mainly Australian data extrapolated to the New Zealand population, compared with data from 1990.

The *New Zealand Burden of Diseases, Injuries and Risk Factors Study, 2006-2016*³ used New Zealand data to present results for 2006, extrapolated forward to 2016. The New Zealand study compared its own results with the global study showing a high degree of concordance.

Watch out also for the *New Zealand Health Survey* which released an annual update of key findings in December 2013.⁴ The *New Zealand Health Survey* was one of the sources of data for the *New Zealand Burden of Diseases, Injuries and Risk Factors Study, 2006-2016*.



A NZ weighty burden: with knowledge and the right tools (in this case a paralysing poison) a large burden can be overcome.²

Global Burden of Disease Study¹

In 2013, the *Global Burden of Disease Study 2010* released its results for 2010 and an update is expected to be released in 2014.

Link to Global Burden of Disease Study: <http://www.healthmetricsandevaluation.org/gbd/research/project/global-burden-diseases-injuries-and-risk-factors-study-2010>

Figure 1 shows the top 15 risk factors for New Zealand in 2010. The coloured portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of Disability-Adjusted Life Years (DALYs) linked to specific risk factors. Perhaps not unexpectedly, diet, physical inactivity and weight are all leading risk factors.

DISABILITY-ADJUSTED LIFE YEARS (DALYS)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs or 'years of life lost') and disability (YLDs or 'years of life with disability') within a population. In New Zealand, the top three causes of DALYs in 2010 were ischaemic heart disease, low back pain, and major depressive disorder. The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were falls, neck pain, and other musculoskeletal disorders.¹

Figure 2 shows New Zealand's 25 leading causes of DALYs ranked from most significant on the left to less significant on the right, with the percentage change from 1999 to 2010. It is likely that an ageing population would not explain all of the changes between the two time periods. Most of the top 25 ranked causes of DALYs are from the 'non-communicable' disease category. The following link is useful to explore these interactive data visualisations further: <http://www.healthmetricsandevaluation.org/gbd/visualizations/gbd-insight>

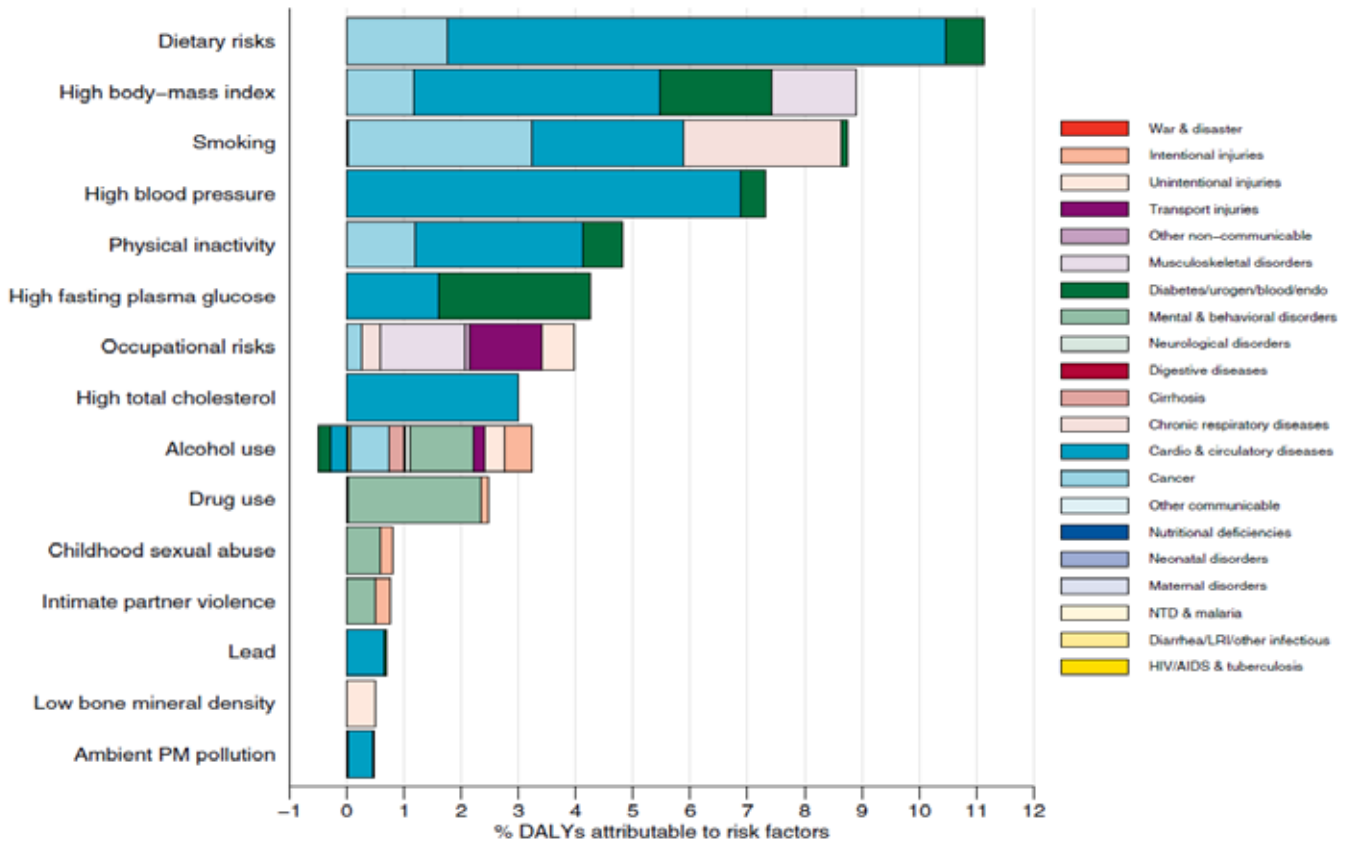


Figure 1. Burden of Disease attributable to 15 leading risk factors in 2010, expressed as a percentage of New Zealand DALYs.

Source <http://www.healthmetricsandevaluation.org/sites/default/files/country-profiles/GBD%20Country%20Report%20-%20New%20Zealand.pdf> (page 3)

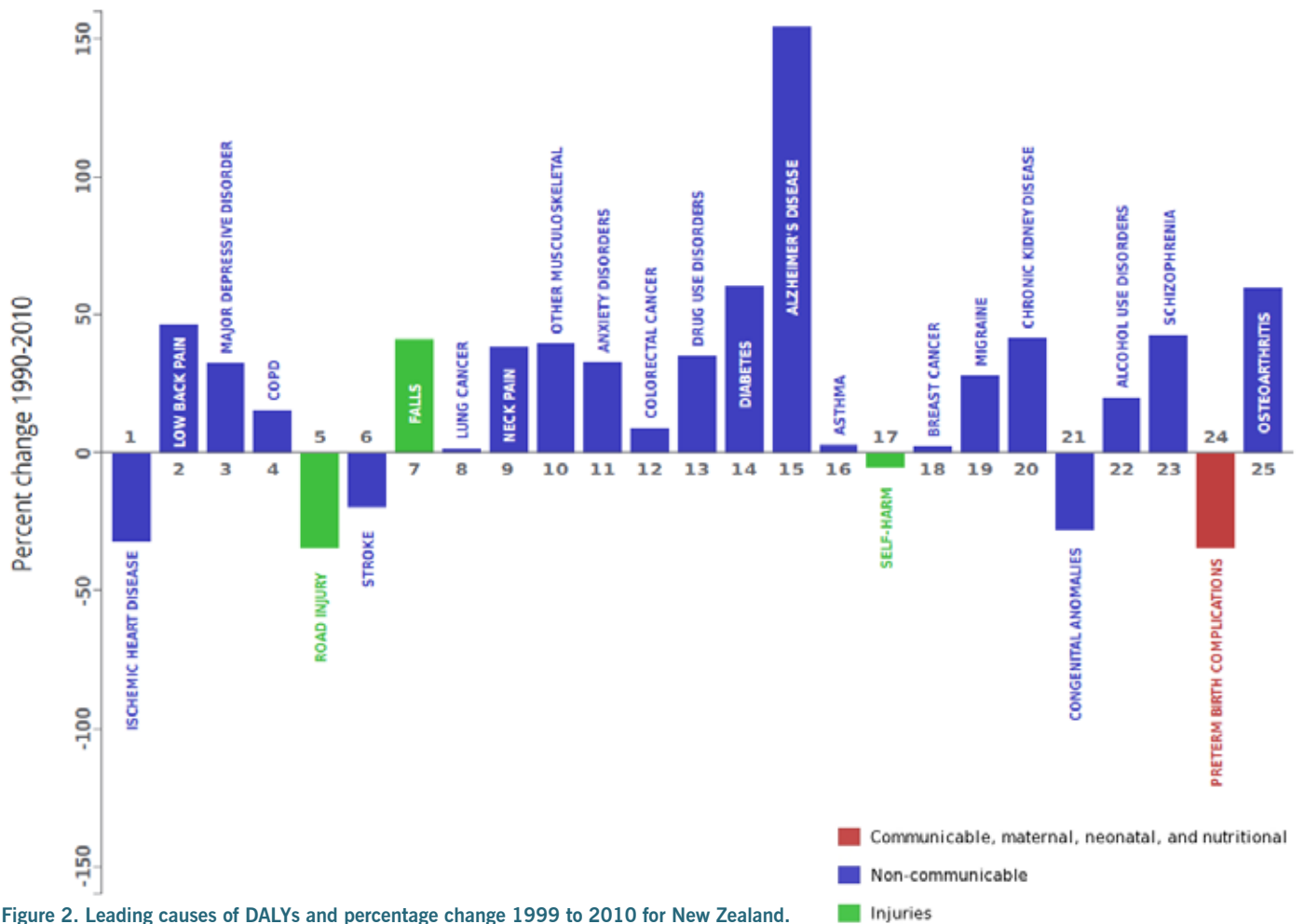


Figure 2. Leading causes of DALYs and percentage change 1999 to 2010 for New Zealand.

Source: <http://www.healthmetricsandevaluation.org/sites/default/files/country-profiles/GBD%20Country%20Report%20-%20New%20Zealand.pdf> (page 2)

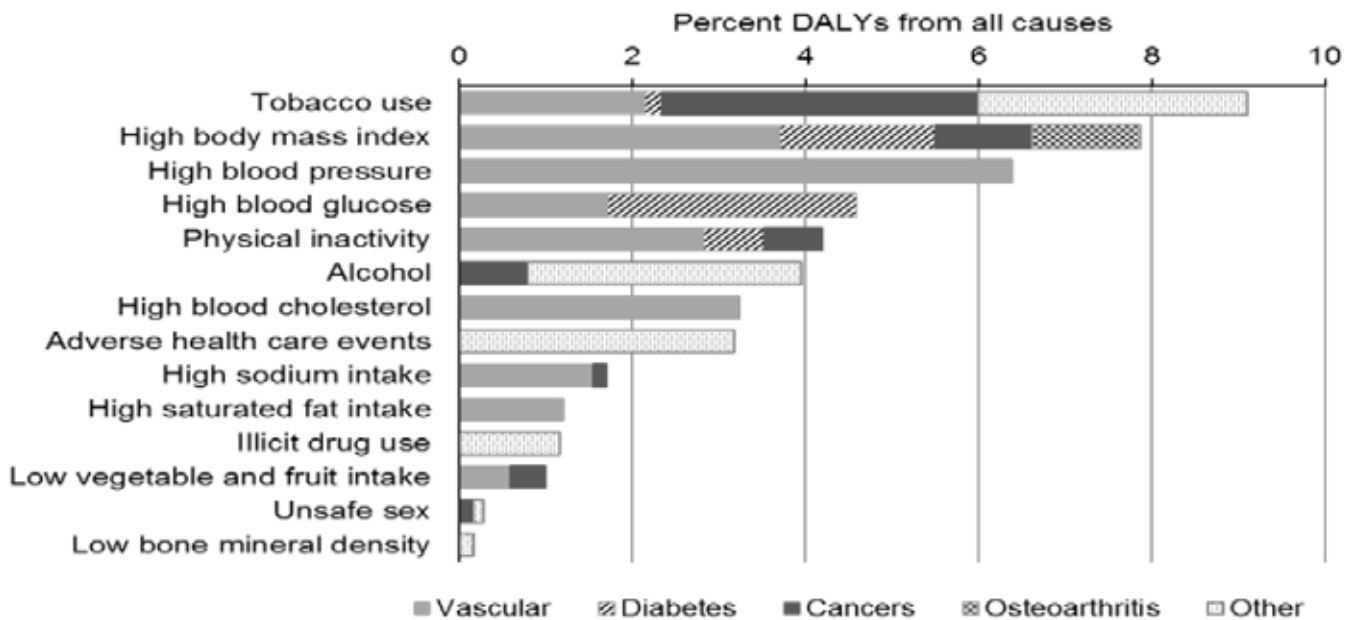


Figure 3. Attributable burden (percentage of DALYs) for selected risk factors, 2006.³

New Zealand Burden of Diseases, Injuries and Risk Factors Study, 2006–2016³

In August 2013, the Ministry of Health released a report on findings of the *New Zealand Burden of Diseases, Injuries and Risk Factors Study* covering the period 2006–2016. This received media attention and expert comment at the time especially in relation to smoking, drinking, obesity and health inequalities.^{5,6}

Results of the study can be accessed via: <http://www.health.govt.nz/publication/health-loss-new-zealand-report-new-zealand-burden-diseases-injuries-and-risk-factors-study-2006-2016>.³ For those interested in looking at the detail, the Ministry of Health has published the data in the form of Excel spreadsheets and pivot tables, available at: <http://www.health.govt.nz/publication/new-zealand-burden-diseases-statistical-annexe>. As with the global study, the results have been summarised in a visually useful format.

Figure 3 shows the burden attributed to selected risk factors broken down by selected disease processes. Smoking was the largest risk factor in 2006, closely followed by high BMI and hypertension. Of the health loss resulting from smoking, 96% was linked to active smoking. The predictive modelling suggested that the burden of disease linked to high BMI would overtake that linked to smoking before 2015.

Expert commentary

With results like these it is little wonder that expert commentary on the results of this study focussed on where we can make the most difference; smoking and dietary risk factors:

“Achieving the Government’s smokefree nation 2025 goal therefore remains an overwhelming policy priority for improving the overall health of New Zealanders, and reducing inequalities in health, especially between Maori and non-Maori; and low-income versus high-income Kiwis...Moreover, dietary risk factors combined, including high salt intake, high saturated fat intake, low vegetable and fruit intake, and excess energy intake, accounted for 11.4% of the health loss in 2006 – more

than tobacco”. Professor Tony Blakely, University of Otago 2013⁷

“improving the nutritional environment for New Zealanders should therefore be a high priority for the Government”. Associate Professor Nick Wilson, University of Otago, Wellington 2013⁷

The moment of opportunity?

So what can primary care practitioners do with this evidence of the drivers of disease burden?

Often the influences for these risk factors seem bigger than the consultation room. Providing advice to patients on a healthy diet is all very well, but not very helpful if they are unable to access healthy food options for cost or other reasons. At a policy level there is debate about the approaches to take to reduce risk factors for poor health and improve health status. For example, these policies can range from influencing the food environment, to emphasising personal responsibility and use of exercise programmes, to the role of sponsorship and advertising, to the availability of sugary drinks, or the use of plain packaging and taxation.

The burden of disease reports provide clear evidence about what are the major modifiable health problems facing New Zealand.

The quit smoking message is absolutely clear. There should not be many patients who are smokers that enter a consultation room and escape a ‘brief intervention’, or at least some comment or message that their smoking adversely affects their health (and wallet).

Addressing dietary factors is more challenging but not impossible. The proportion of disease burden attributable to high BMI and related risks makes this important to address. Energy balance ‘interventions’ should perhaps be right up there with smoking cessation, or at least a close second.

Such measures are targeted at individuals, but for general practices, reducing the risk factors in their population should also, over time, reduce the amount and severity of chronic disease. It would be nice to think that this would improve staff workloads. More realistically, it would allow attention to shift to the next identified priorities.

Sources

1. Institute for Health Metrics and Evaluation: *Global Burden of Disease Study 2010*. 2013.
2. Johnragla, *New Zealand wasp image*: Wikimedia Commons. http://en.wikipedia.org/wiki/File:Pompillid_wasp,_Cryptocheilus_australis_on_sand_dune_near_Te_Kaha_Point.JPG
3. New Zealand Ministry of Health. *Health Loss in New Zealand: A report from the New Zealand Burden of Diseases, Injuries and Risk Factors Study, 2006–2016*. 2013.

4. New Zealand Ministry of Health. *New Zealand Health Survey: Annual update of key findings 2012/13*. 2013.
5. McCorkindale, W., <http://www.stuff.co.nz/national/health/9019012/Obesity-to-overtake-smoking-in-health-stakes>. 2013.
6. <http://www.sciencemediacentre.co.nz/2013/08/08/stocktake-estimates-burden-of-disease-in-nz/>. 2013.
7. University of Otago. *New findings on health loss and where gains might be made*. 2013.

REMINDER: INCUBATION AND COMMUNICABILITY OF ENTERIC DISEASE

When considering the infectious causes of diarrhoea (and other gastrointestinal symptoms) it is helpful to know when a person was most likely to have been exposed to an infection, and for how long they are most likely to remain infectious. This, combined with information about a person's occupation and activities, helps determine what advice they need to be given about exclusion from usual activities to minimise further spread of illness.

Expected incubation periods

Disease	Incubation period
<i>Bacillus cereus</i> (diarrhoea)	6–24 hours
<i>Bacillus cereus</i> (vomiting)	0.5–6 hours
Campylobacteriosis	2–5 days (1–10 days)
Ciguatera fish poisoning	1–24 hours
<i>Clostridium botulinum</i>	12–36 hours
<i>Clostridium perfringens</i>	10–12 hours (6–24 hours)
Cryptosporidiosis	7 days (1–12 days)
Diarrhetic shellfish poisoning	Hours
<i>Entamoeba histolytica</i>	Days to months
Enteric adenoviruses	3–10 days
Enteropathogenic <i>E. coli</i> (EPEC)	10–12 hours
Enterotoxigenic <i>E. coli</i> (ETEC)	24–72 hours
Giardiasis	7–10 days (3–25 days)
Norovirus	10–50 hours
Rotavirus	24–72 hours
Salmonellosis	12–36 hours (6–72 hours)
<i>Salmonella paratyphi</i>	1–10 days
<i>Salmonella typhi</i> 1–3 weeks	(3 days – 3 months)
<i>Shigella</i> 1–3 days	(12 hours – 1 week)
<i>Staphylococcus aureus</i>	0.5–8 hours
<i>Yersinia</i> (not <i>Y. pestis</i>)	3–7 days (> 10 days)
<i>Vibrio cholerae</i> O1 or O139	2–3 days (2 hours – 5 days)
<i>Vibrio parahaemolyticus</i>	4–30 hours

Note that incubation periods can be highly variable and may depend on the dose of infectious material and individual susceptibility.

Sources

1. New Zealand Ministry of Health, Communicable Disease Control Manual 2012.
2. Regional Public Health

Expected period of communicability for enteric diseases with significant person to person transmission

Infection	Period of communicability
Campylobacteriosis	<i>Campylobacter</i> spp. may be shed in the stool for several weeks after infection.
Cryptosporidiosis	Oocysts, the infectious stage, appear in the faeces at the start of illness and are excreted for several weeks after symptoms resolve.
Enteric adenoviruses	Highest risk in the first few days of symptoms; up to months
<i>E. histolytica</i>	Up to months
Giardiasis	Up to months
Norovirus infection	During symptoms and until 48 hours after diarrhoea ceases
Rotavirus infection	During symptoms and until approximately 8 days after onset of symptoms. Up to 30 days after onset of symptoms in immunocompromised patients
Salmonellosis	Variable; typically several days to several weeks. Approximately 1 percent of infected adults and 5 percent of infected children under 5 years of age excrete <i>Salmonella</i> spp. for more than 1 year.
Shigellosis	Up to 4 weeks after infection. Asymptomatic carriage may also occur. Rarely, faecal shedding may persist for months.

The information in the above tables link with and inform the exclusion criteria as explained in detail in the Public Health Post December 2012, available at: www.rph.org.nz.

The 'high risk' groups of particular interest when considering the risk of spreading enteric infection from person to person are:

- Food product handlers including visitors or contractors who could potentially affect food safety.
- Staff of health care or early childhood facilities.
- Children under the age of five attending early childhood services.
- Other people at higher risk due to illness or disability.

Note: the latter group are also at risk of more serious disease and staff who work with these groups need exclusion advice to prevent illness being spread to these at risk groups.

Knowing the occupation of a person with a diarrhoeal illness is critical to determining what public health advice or response is appropriate. Health protection staff at Regional Public Health are available to provide support about appropriate exclusion messages, 04 570 9002.

WHAT ARE YOU REPORTING

1 DECEMBER 2013 - 28 FEBRUARY 2014

Notifiable Condition	Number of cases (confirmed cases only)			
	Hutt	Wairarapa	Wellington	Total
Campylobacteriosis	53	27	141	221
Cryptosporidiosis	2		2	4
Dengue fever	3			3
Diphtheria (cutaneous)			1	1
Gastroenteritis - unknown cause			1	1
Gastroenteritis / foodborne intoxication	3		3	6
Giardiasis	12	9	32	53
Hepatitis A	6		1	7
Hepatitis B			1	1
Invasive pneumococcal disease	3	1	4	8
Lead absorption		3	1	4
Legionellosis			1	1
Listeriosis	1			1
Malaria			1	1
Measles			3	3
Pertussis (additional probable cases in brackets)	4 (4)	1 (0)	15 (7)	20 (11)
Rheumatic fever - initial attack			2	2
Salmonellosis	6	6	15	27
Taeniasis			1	1
Tuberculosis disease - new case	1		7	8
Yersiniosis	3	1	8	12
Totals	97	48	240	385

Notes:

- Pertussis confirmed and probable case numbers remain low in the Wellington region.
- The three measles cases represent the first cases since March 2013. Measles resources including waiting room posters are available at <http://www.health.govt.nz/our-work/diseases-and-conditions/measles-information-health-professionals>
- Dengue fever cases all had overseas exposure during the incubation period.
- The seven hepatitis A cases were all linked to overseas exposures in the Pacific Islands and South-East Asia. Six were from one extended family group.
- The case of cutaneous toxigenic diphtheria was thought to have been acquired in Tokelau.

Sources

ESR. Episurv database of notifiable conditions accessed 17/3/2014.

Regional Public Health case notes.

PUBLIC HEALTH ALERTS

Regional Public Health communicates public health alerts to primary care practices by fax and by email. These communications often contain information that needs to be urgently taken on board by general practitioners and primary care nurses.

Please contact Regional Public Health on 04 570 9002 if you have not been receiving alerts, or to check and confirm that we have your correct details.

If you are not yet receiving alerts by email, and would like to, then you can provide your email address via phoning the number above.

Ordering pamphlets and posters:

To order any Ministry of Health resources, please contact the Health Information Centre on 04 570 9691 or email laurina.francis@huttvalleydhb.org.nz

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