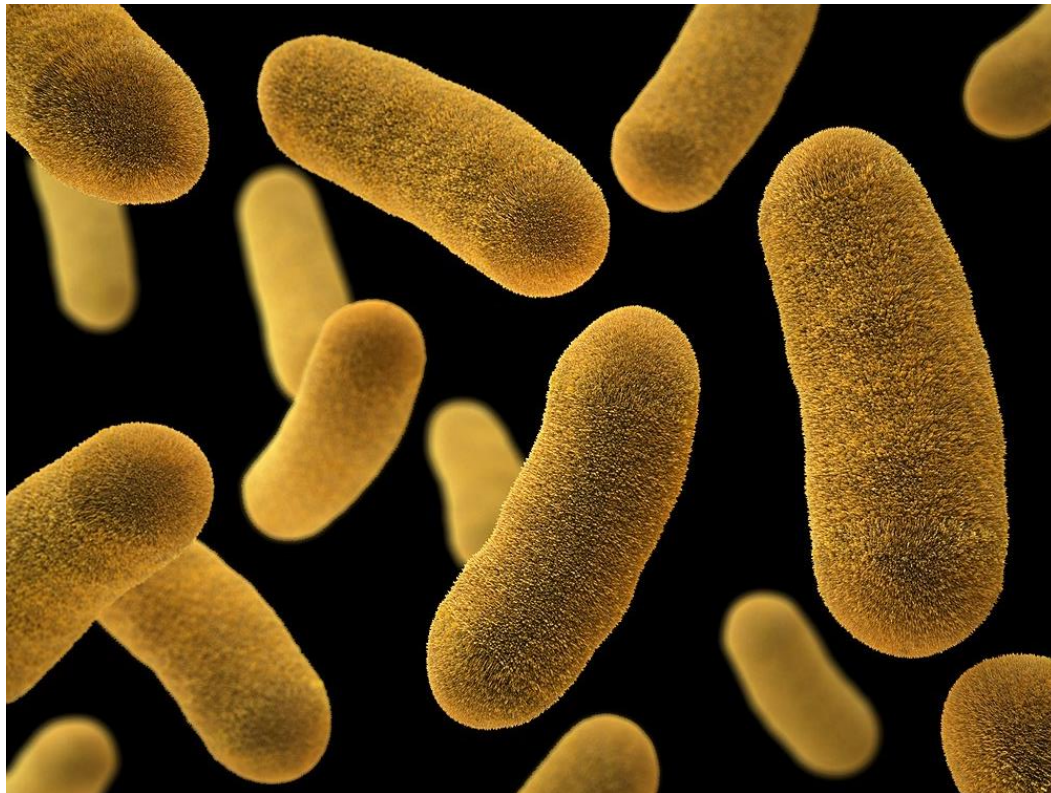


Identifying the Causes of Yersiniosis in New Zealand

Brent.gilpin@esr.cri.nz



By Jennifer Oosthuizen -
<https://phil.cdc.gov/Details.aspx?pid=21923>, Public
Domain,
<https://commons.wikimedia.org/w/index.php?curid=77323235>

E/S/R
Science for Communities

hrcnz Health Research Council
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Te Kaitiaki Rangahau Hauora o Aotearoa

Community & Public Health **Canterbury**
District Health Board
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Ministry for Primary Industries
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One Health
AOTEAROA

MASSEY
UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

7th Symposium
7/8 December 2021

MINISTRY OF
HEALTH
MANATŪ HAUORA



Public Health Surveillance

Information for New Zealand Public Health Action



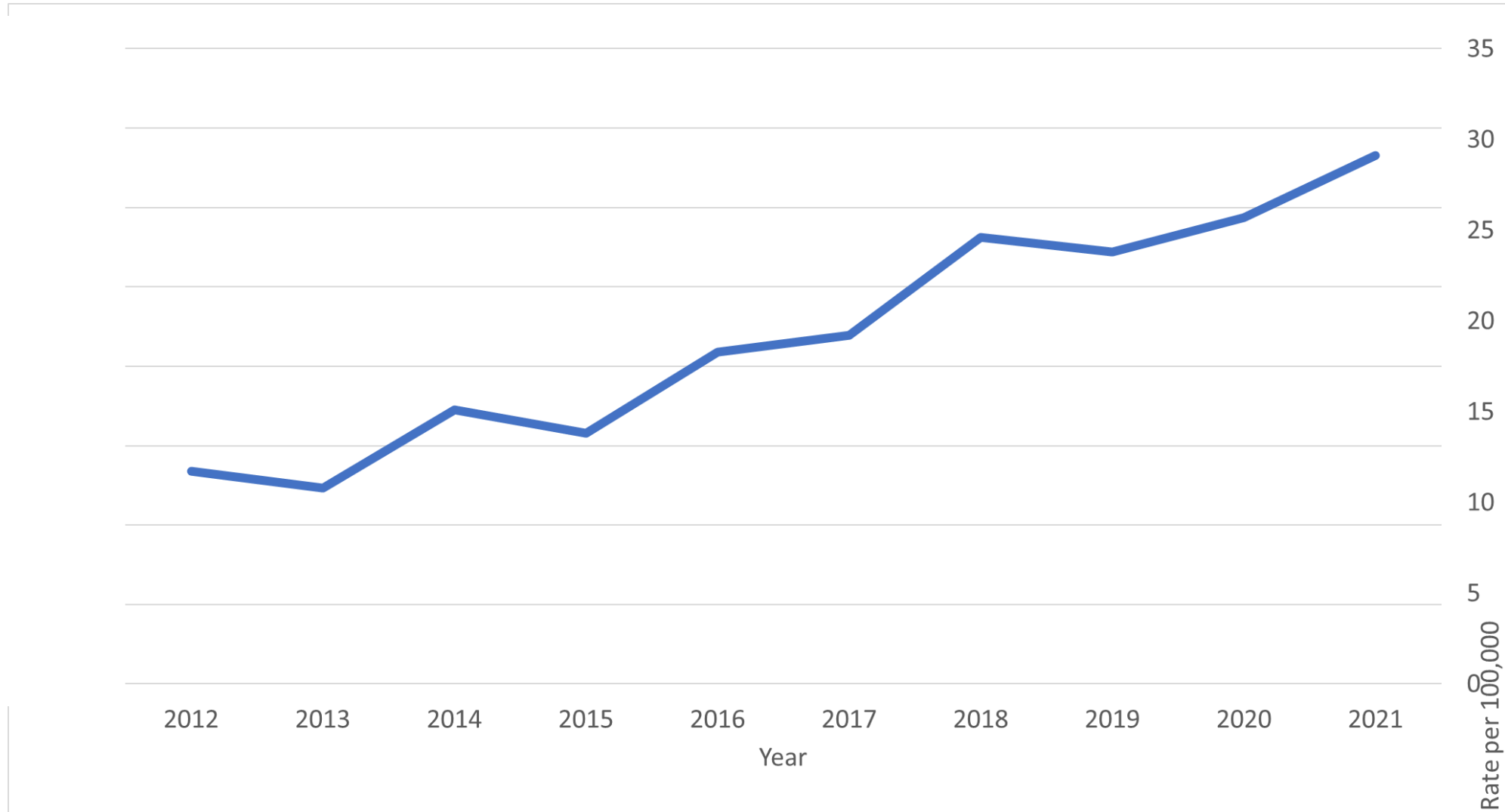
<https://surv.esr.cri.nz/>

MONTHLY NOTIFIABLE DISEASE SURVEILLANCE REPORT - SEP 2021

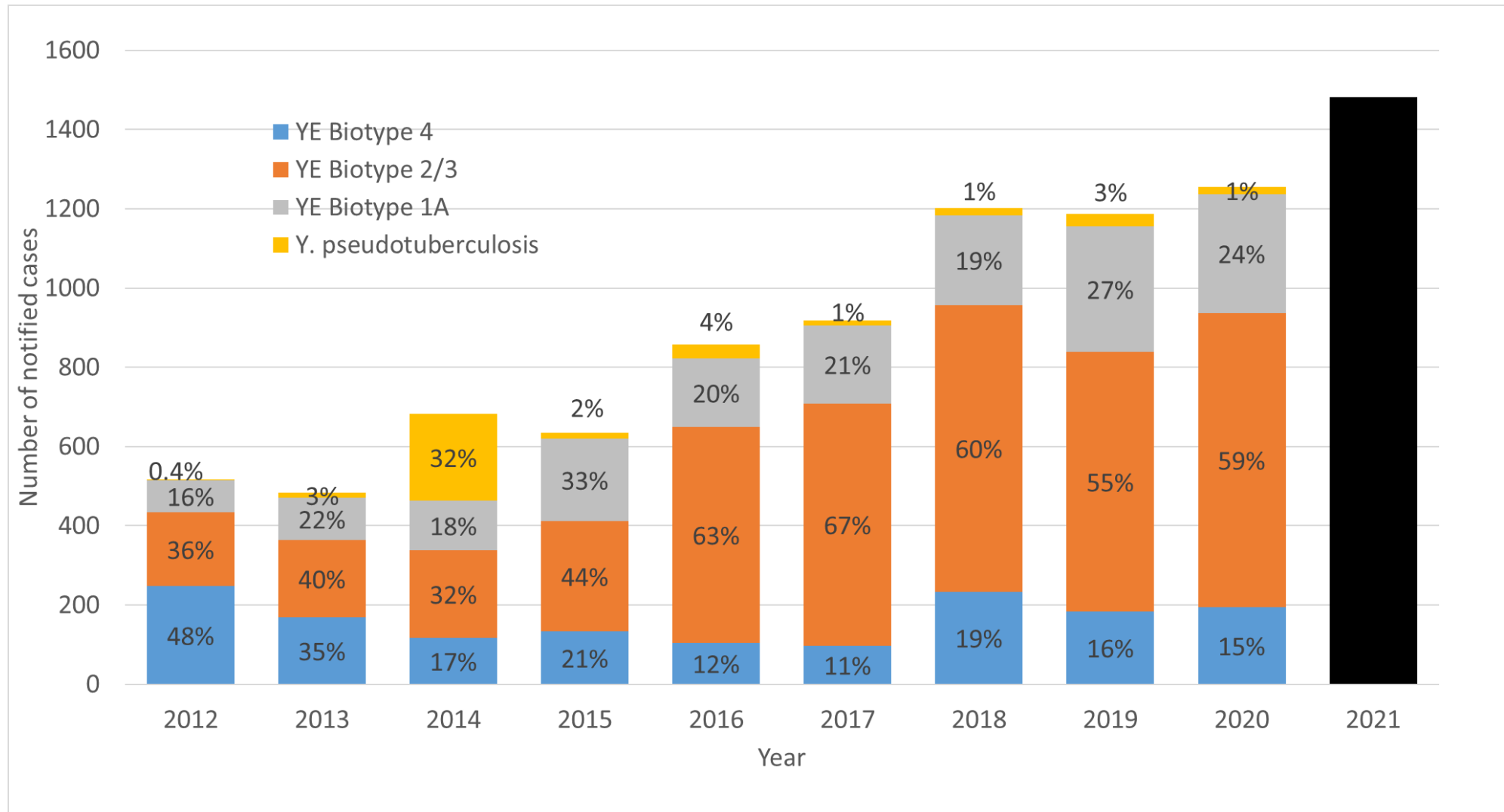
Wednesday 1st December 2021

Disease	Cases Last 12 months	Current 12 Month Rate/100,000
Campylobacteriosis	5,705	112.0
COVID-19	2,456	48.2
Yersiniosis	1,482	29.1
Giardiasis	1,118	21.9
VTEC/STEC infection	932	18.3
Salmonellosis	751	14.7
Cryptosporidiosis	679	13.3

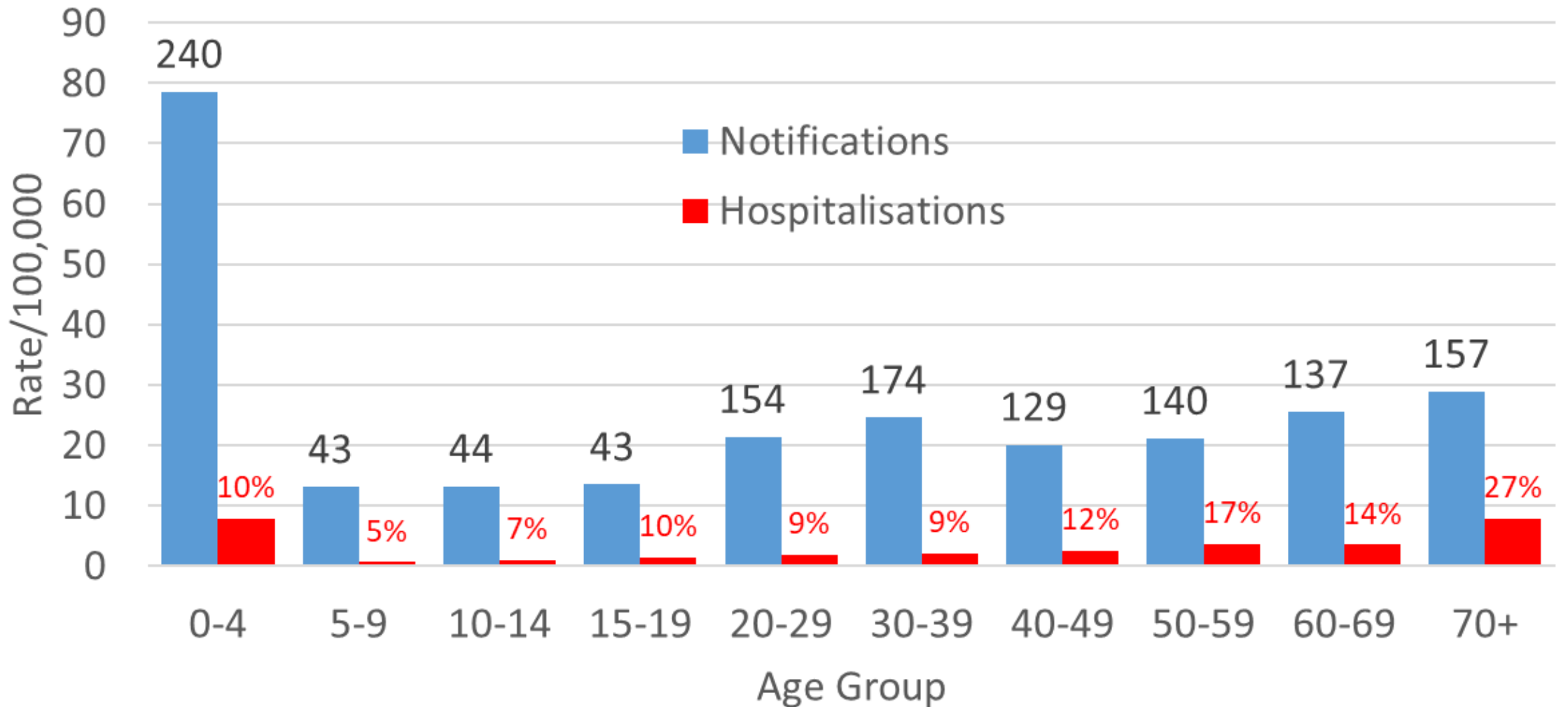
Notified Rate per 100,000



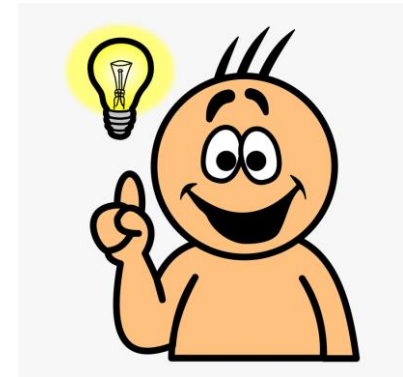
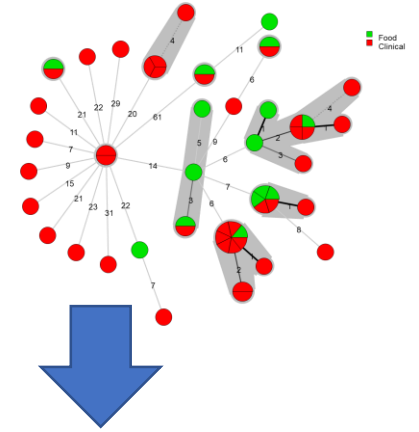
Changes in Biotypes



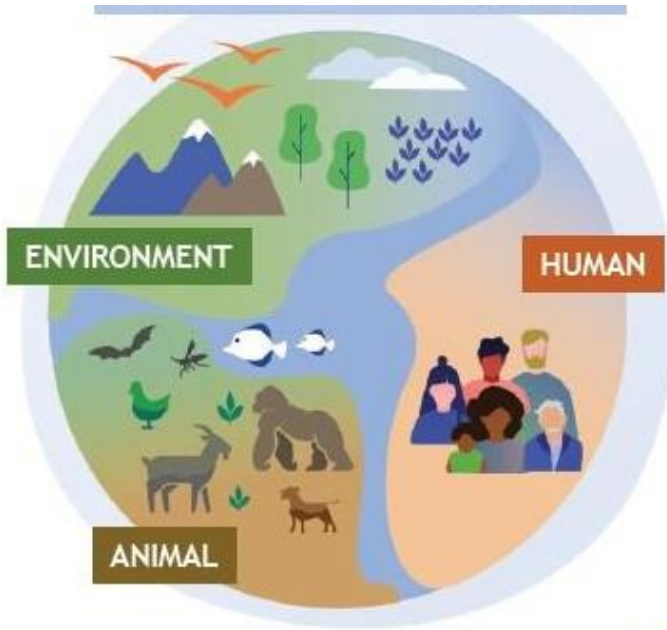
2020 Notifications and Hospitalisations



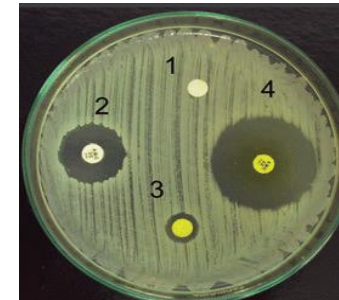
Unravelling the Mysteries of Yersiniosis



https://www.clipartkey.com/view/iTRxwmm_understanding-clip-art-understand-clipart/



Tell me what
you ate?



This Photo by Unknown Author
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<https://www.who.int/news/item/01-12-2021-tripartite-and-unep-support-ohhlep-s-definition-of-one-health>

Epidemiology

- Canterbury, South Canterbury & West Coast
- Since 25/6/21
 - 63 notified cases (33 female, 30 males, <1 to 90+)
- Epidemiology
 - CPH Telephone Risk Factor Interviews: 59 interviewed, 1 pending, 3 unable to interview. **95% response rate.**
 - Of the 59, 54 consented to study, 2 pending consent, 3 declined to participate. **(86%+ response rate)**
 - Follow-up illness questionnaires after 4 weeks and 3 months
- Control Interviews (NZ Public Health Survey)
 - Risk Factors
- Case:Control and Case:Case comparisons



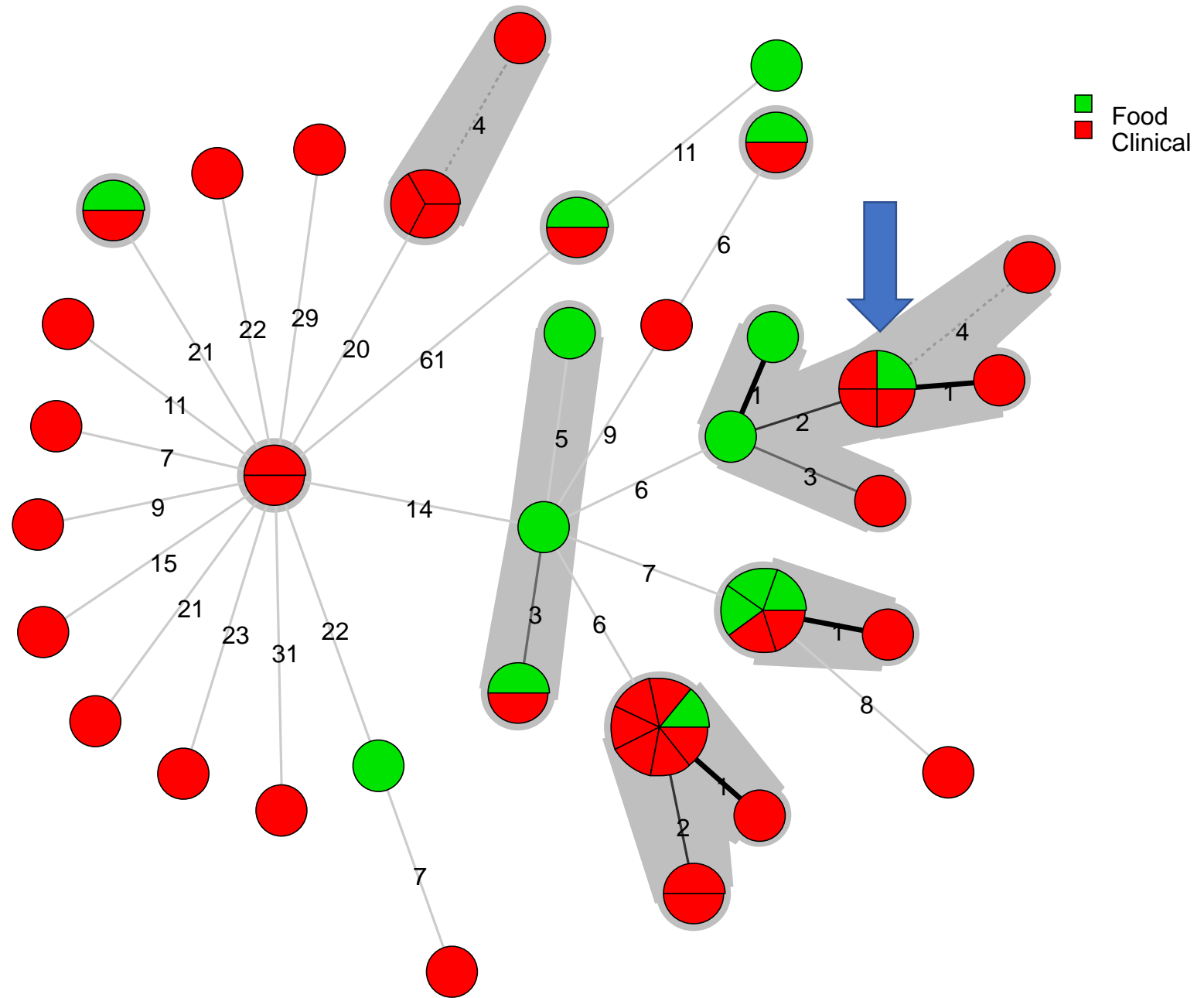
Sample type	Positive	Negative	Total	Percentage
Raw pork mince	12	13	25	48%
Raw pork - other	1	9	10	10%
Raw lamb	1	8	9	11%
Raw beef	0	8	8	
Raw chicken	0	5	5	
Raw pork sausages	1	1	2	50%
Raw other sausages	0	3	3	
Pet food	0	2	2	
Bacon	0	8	8	
Ham	0	3	3	
Ready-to-eat pork	0	1	1	
Ready-to-eat sausages	0	6	6	
Baby spinach	0	2	2	
Blueberries (frozen)	0	8	8	
Raspberries (frozen)	0	3	3	
Faeces pig	0	1	1	
Faeces sheep	0	2	2	
Water	0	1	1	
Grand Total	15	84	99	15.2%



Whole Genome Sequencing

	Clinical	Food
<i>Yersinia enterocolitica</i>		
Biotype 1A	30	25
Biotype 2/3	50	23
<i>Yersinia pseudotuberculosis</i>	7	
<i>Yersinia frederiksenii</i>		3
<i>Yersinia intermedia</i>		1

Y. Enterocolitica
BT2/3, O:9
ST12



Mett



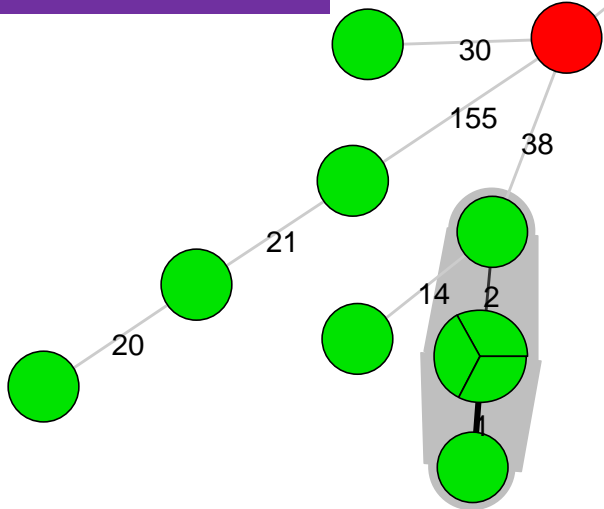
Figure 1: “Mett is a preparation of minced raw pork that is popular in Germany, Poland and in Belgium; a similar preparation is made from beef. It is normally served with salt and black pepper, and sometimes with garlic, caraway or chopped onion, and eaten raw, usually on a bread roll”

<https://en.wikipedia.org/wiki/Mett> (image: <https://commons.wikimedia.org/wiki/File:Mettbroetchen.jpg>).

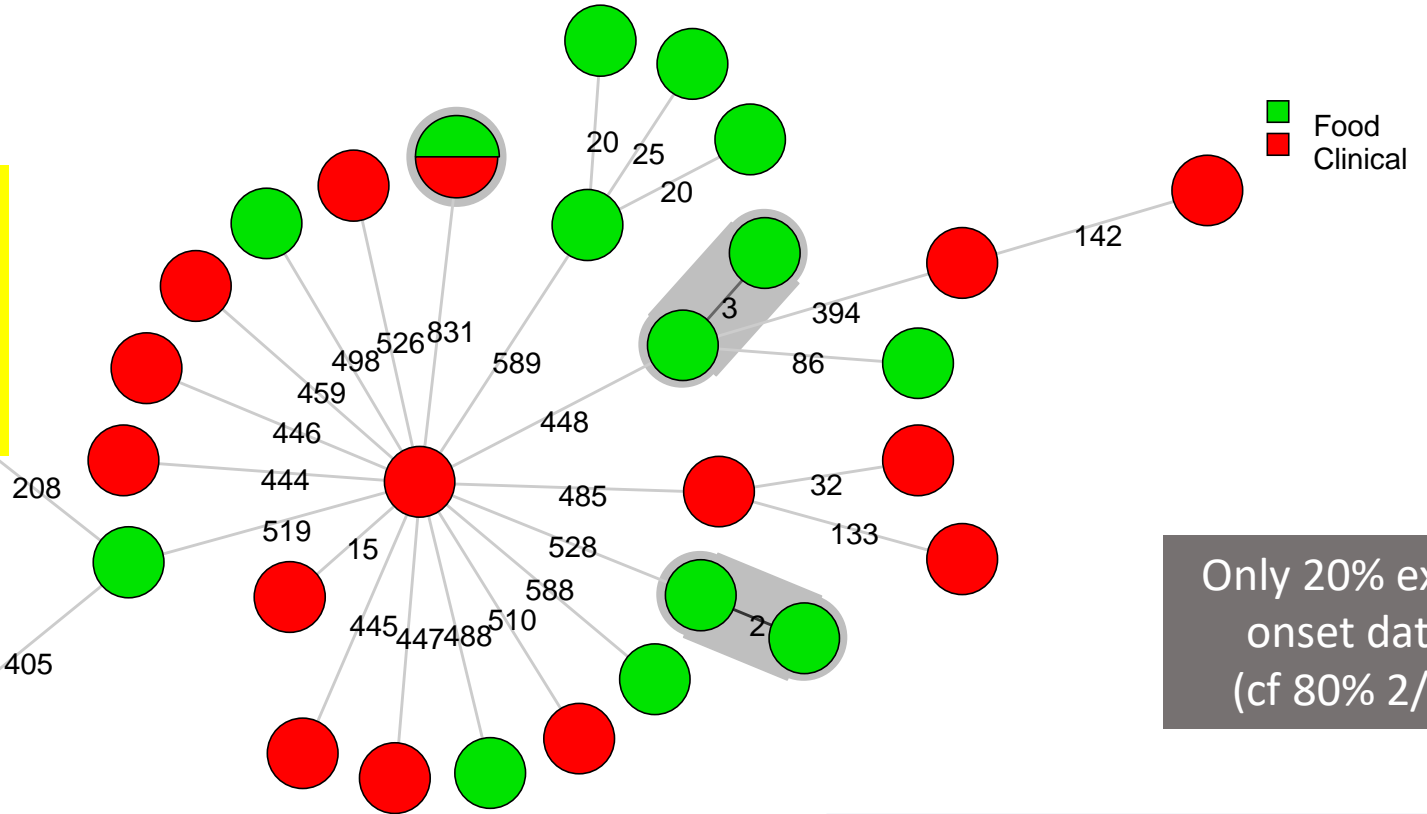
YE Biotype 1A

Pathogens?
Opportunistic pathogens?
Incidental isolations?

80% dual infections
(with Campy or
STEC) are 1As (n=5)

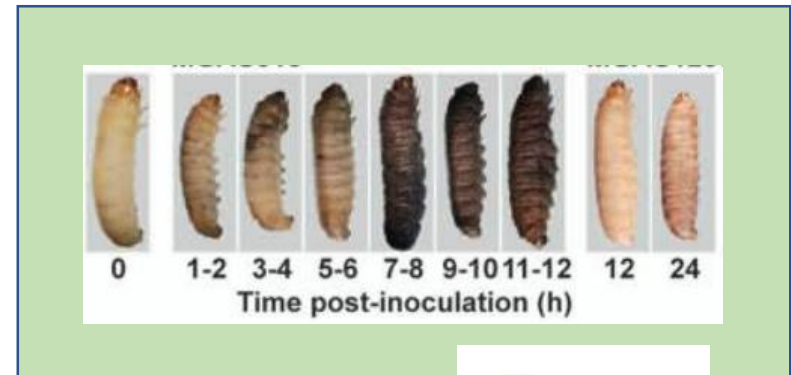


Less recognised virulence genes
Biotype 2/3
ail, inv, psaA, yadA, ystA
Biotype 1A
inv, ystB



Food
Clinical

Only 20% exact
onset date
(cf 80% 2/3)



Anne Midwinter

Why do Māori have the lowest notified rates of yersiniosis, Asian the highest?

	Māori	Pacific	Asian	European	Overall
Yersiniosis	11.9	15.7	42.8	22.7	24.2
VTEC/STEC	18.8	10	10.1	26.2	22.5
Campylobacteriosis	75.1	47.1	63.8	146.8	126.7
Cryptosporidiosis	17	10.7	13.9	23.8	21.2
Giardiasis	24.4	10.7	21.5	41.8	35.8
Salmonellosis	18.4	24.1	20.6	25.8	24.3

Table 1. 2019 Notified rates per 100,000 of enteric diseases for different ethnic groups. For each disease, highest rates in red, lowest in green. Source EpiSurv

Maria Hepi
Wendy Dallas Katoa

Ngā mihi nui



Science for Communities

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Fiona Whero
Beverley Horn
Jing Wang
Hugo Strydom
Jackie Wright
Shevaun Paine
Peter Cressey
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