

Why I love working in public health... and notifiable diseases in Nova Scotia

Dr Valerie Delpech

Acknowledgements

Thank you to a great surveillance Team!



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The Public Health Practitioner..

- Never a dull day! Ever changing....
- Expect the unexpected – in numbers and people!
- Be a detective, a translator (from science to public health), an educator, an innovator and an advocate for change..
- Think locally and globally, Act locally (and globally) ...
- Changed beliefs and practices of individuals and communities in the pursuit of better health!



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What if we did nothing??



President Robert Mugabe and his wife, Grace, attend a cake-cutting ceremony for his birthday Saturday.

Zimbabwe cholera cases top 80,000: WHO

Fri Feb 20, 2009 11:04am EST

GENEVA (Reuters) - More than 80,000 people have now been infected with cholera in Zimbabwe's six-month-old outbreak which has killed 3,759, the World Health Organization (WHO) said on Friday.

About half of the patients who died from the water-borne diarrheal disease failed to reach any of the country's 365 cholera treatment centers, the United Nations agency said.

The proportion of deaths has been decreasing steadily since early January, but the fatality rate remains above the acceptable level in such an epidemic, according to the WHO.

The deadliest cholera outbreak in Africa in 15 years has also spread to neighboring countries including South Africa.

The intestinal infection spreads through contaminated food and water and can cause severe dehydration and death without proper treatment. While cholera is both preventable and treatable, an economic and political crisis in Zimbabwe has caused the near-collapse of health services.

"Given the outbreak's dynamic, in the context of a dilapidated water and sanitation infrastructure and a weak health system, the practical implementation of control measures remains a challenge," the WHO said.



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Why we need notifiable conditions?



Under the Health Protection Act (2005) – a provincial legislation designed to protect the health of the public

- Timely reporting to ensure prompt public health action (*think and act local, provincial, national & international*)
- Monitor trends and prevention efforts
- Track public health programmes (eg: immunisation programs)

Which conditions are reportable?



- Communicable (eg: measles, STIs)
- ‘Dangerous’ (high mortality) plague, SARS, VHF, influenza virus of pandemic potential
- Of public health importance (eg adverse event following immunisation)

***BUT* Reporting should not lead to complacency**

- ‘emerging’ – anything unusual happening in your neck of the woods?

we need to always be on the lookout for unusual and emerging conditions.....


Notifiable Conditions Data systems in Nova Scotia

- ANDS (June 2008)
 - Communicable Diseases
 - Immunisation data
- Enhanced data collections
 - For example HIV, HCV, HBV
- Panorama (*soon at a terminal near you*)



Surveillance Section at HPP

Dissemination of accurate and timely information



- Monthly notifiable conditions tables
 - by 15th of following month (Data must be received by 10th)
- Annual Report – new version
- EpiReviews – phased in over the year
 - STIs - Enteric
 - HIV - Vaccine preventable
 - Zoonotics

Dissemination of accurate and timely information – Under development...



- Revision and updating CD Control Manual (ongoing)
 - Include Surveillance flow diagrams and relevant reporting forms
- Updating of case definitions in line with new national cases definitions
- Greater presence on HPP website (but importance of minimising impact of small cells numbers to avoid deductive disclosure)
- Role in non-communicable diseases and monitoring of health indicators (community profiles)

NS Notifiable conditions Highlights in 2008



Over 4300 reports of notifiable conditions

Top 5 reported conditions

- Chlamydia (2039)
- MRSA (1012)
- Hepatitis C (278)
- Influenza (232)
- Gonorrhoea (143)

>80 Notified Outbreaks in NS in 2008

Respiratory – 44 Outbreaks (LTCF – 38)

- RSV (lab confirmed/suspect) 5
- ILI 13
- Lab Confirmed Influenza 22

Enteric – 36 Outbreaks (Residential 21, Non- Residential 6 Private Function 3, Food Service Establishment 2)

- Norwalk Like Virus – 22
- Salmonella – 2
- Clostridium – 1
- Unknown – 11

Q Fever – Residential (17)



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NS Highlights in 2008

Sexually transmissible Infections & BBV (>50% of all notified cases)

- Chlamydia (>2000), on rise, mostly young, F>M
- Gonorrhoea (143) steady F:M equal
- Syphilis (12) steady F:M equal
- HIV (22) steady
- Hepatitis B (7 acute, 11 chronic) steady
- Hepatitis C (278) steady

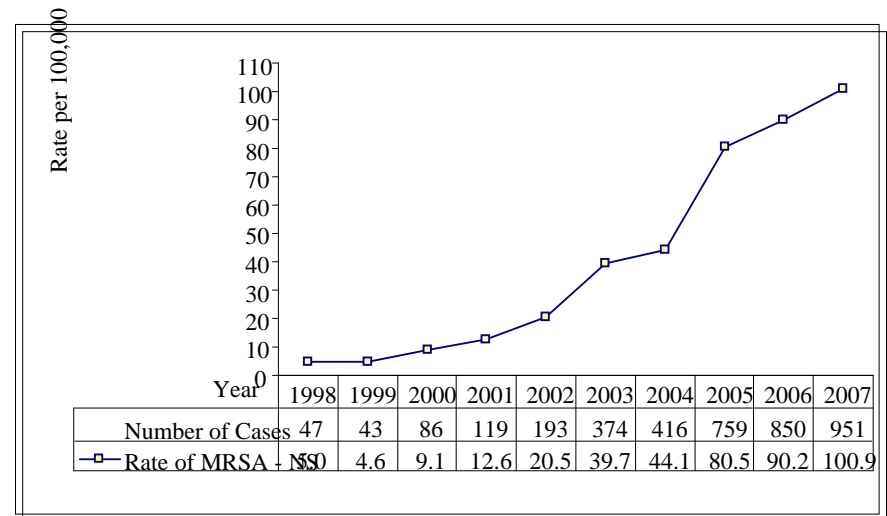
Need for additional information regarding mode of transmission



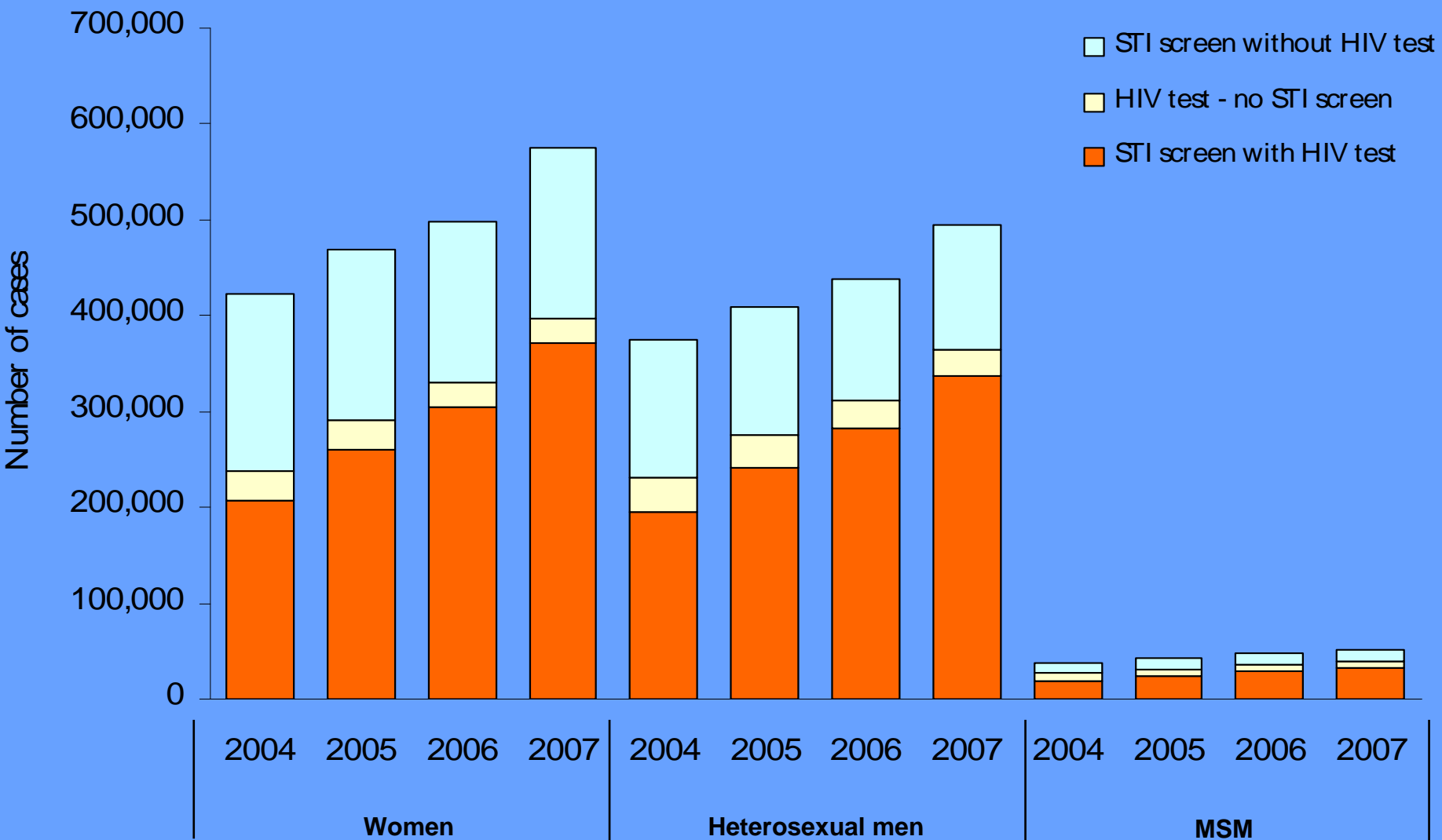
Caution: Interpretation of data trends

- Are the increases real?
 - Chlamydia
 - MRSA
- Have there been changes in practice? Screening?
Are we now looking?
- Tip of the iceberg?? The undiagnosed....
- Numbers vs Rates
- Crude Rates vs Age-sex specific
- Small numbers and deductive disclosure

Incidence in MRSA in NS



Sexual health screens and HIV tests at GUM clinics, E, W & NI



Highlights in 2008

Water, Food and Enteric Pathogens (445 cases)

Most Frequently notified

Campylobacteriosis (159) Giardiasis (107) Salmonellosis (138)

Ten(ish) cases or less

Amoebiasis (8)

Hepatitis A (4)

Verotoxigenic *E.coli* Infection (10)

Shigellosis (4)

Yersiniosis (4)

Cryptosporidiosis (11)

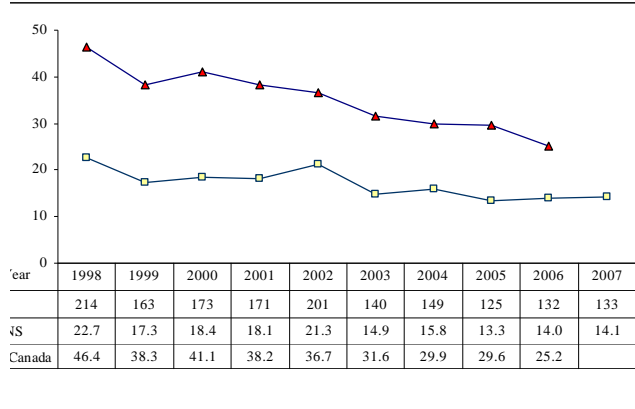
Nil

Bolutism, clostridium perfringes, cholera, cyclosporiasis,

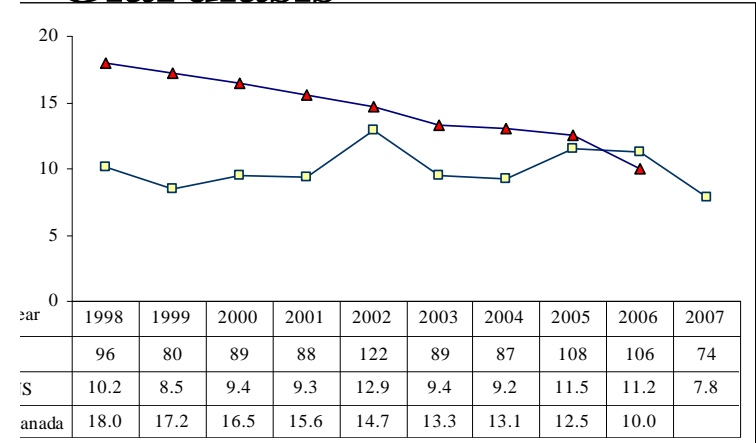
Paralytic Shellfish Poisoning & typhoid

Notifiable conditions NS incidence compared to Canada

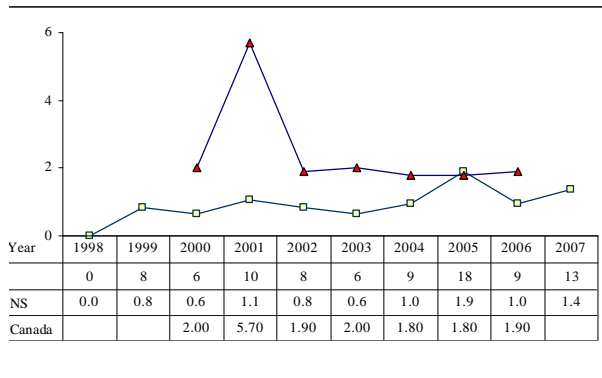
Campylobacteriosis



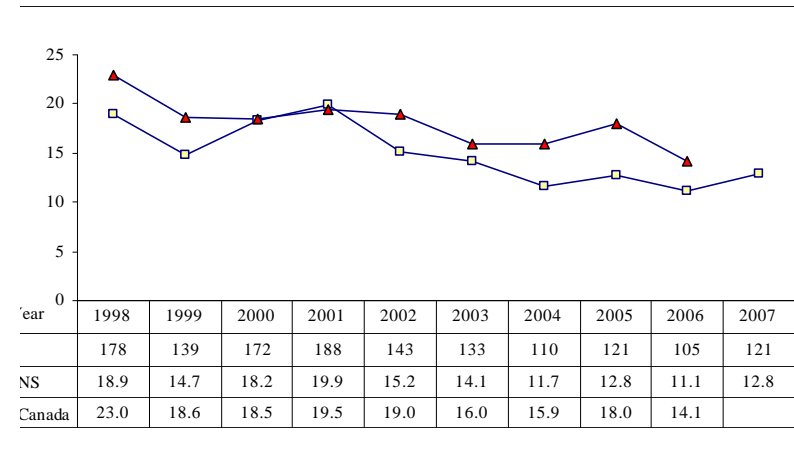
Giardiasis



Cryptosporidiosis



Salmonellosis



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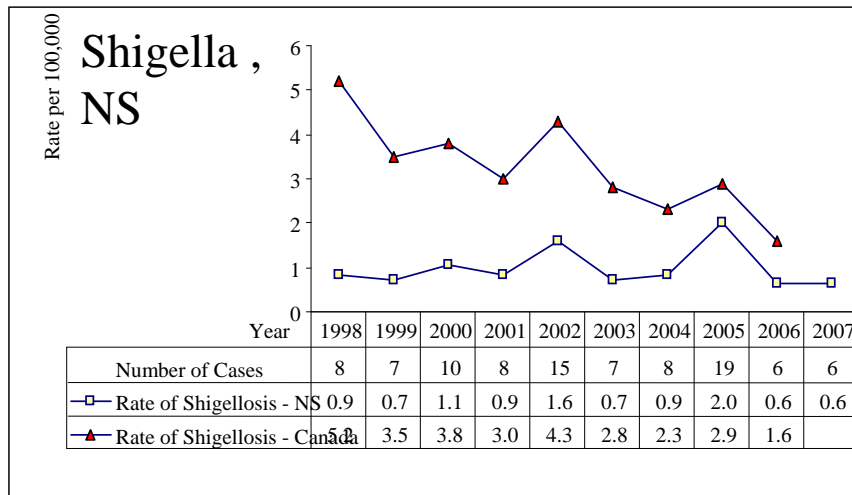
Why and when to investigate??

Be a detective and on the lookout!

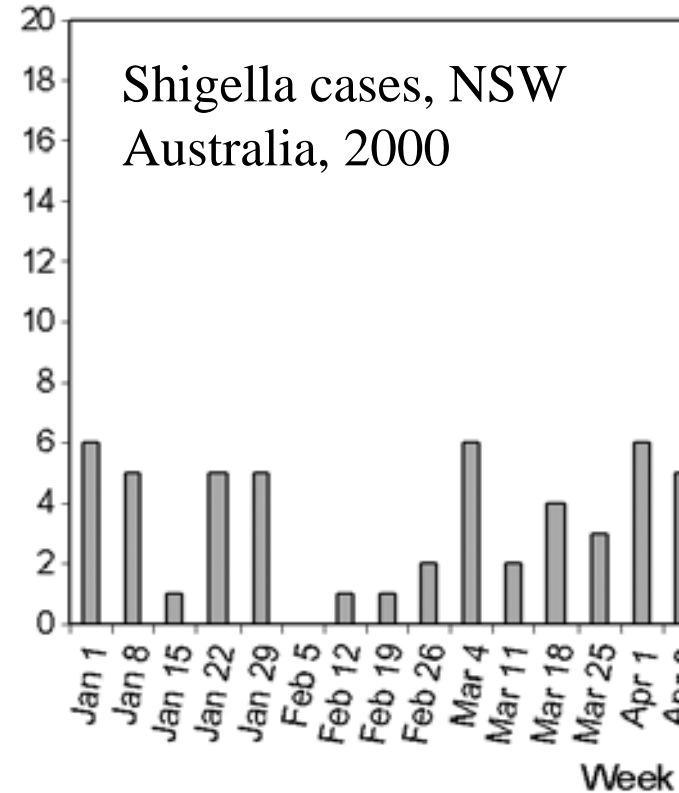
?is it above base line

?unusual presentation ?subtype

?unusual circumstance



No. cases



Step 1: Describe what you see

Time

Place

Person

And more....communicate with other PH folk early!

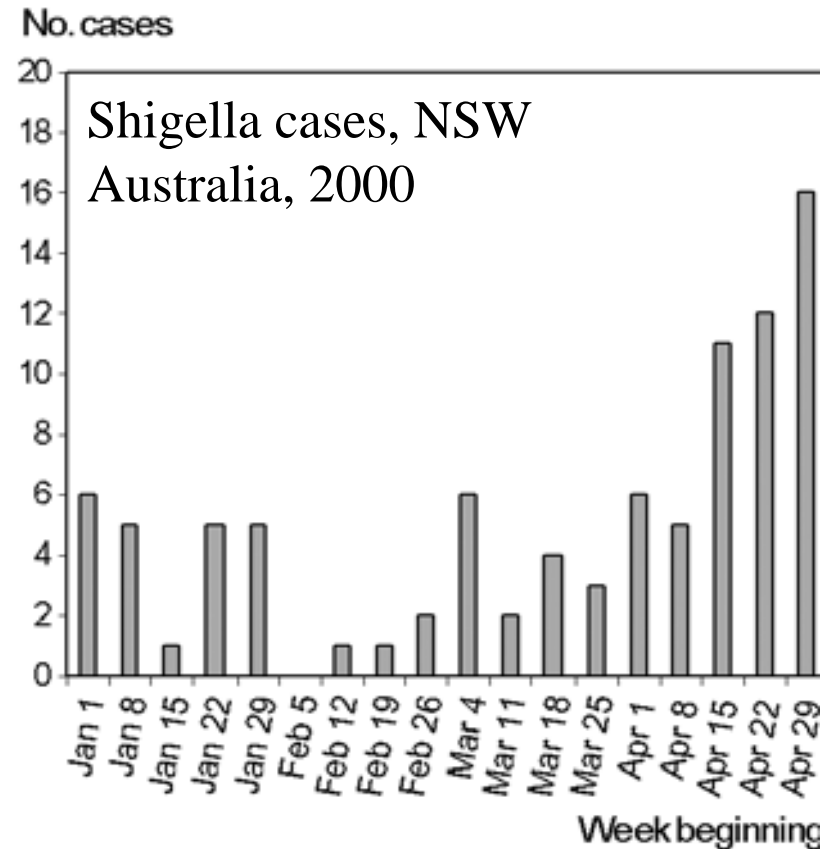
Example

Shigella outbreak in Sydney

90% Men (20-40s)

Focalised in SE&Central Sydney

???what would you do next??



Step 2: identify source and /or transmission

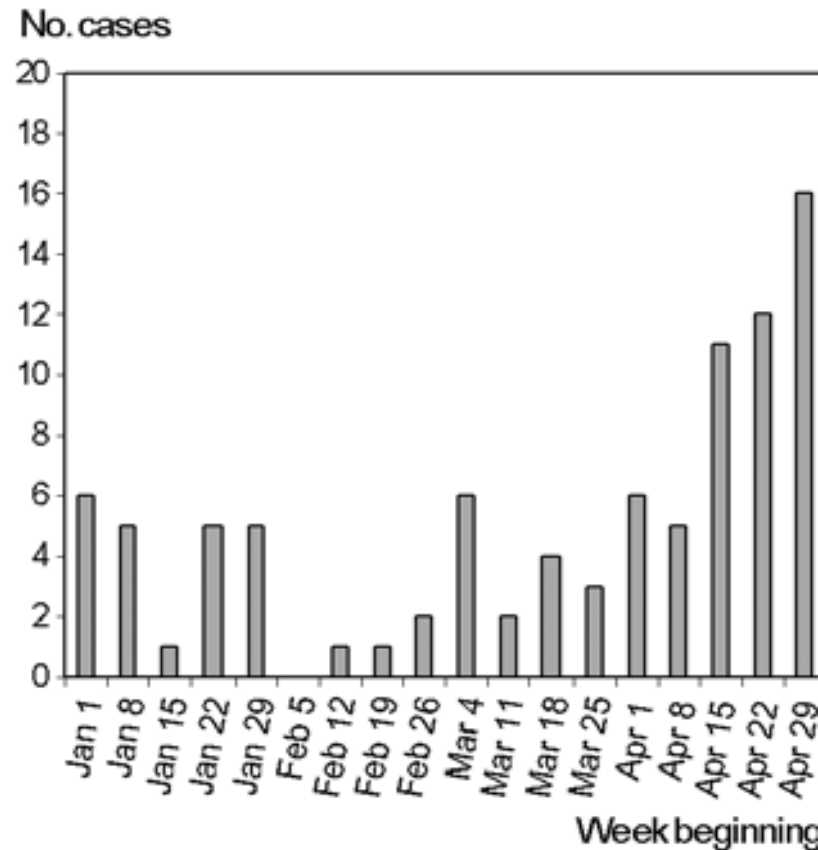
Inspection (food & env)

- Questionnaire on risk factor
- Conduct study
 - cohort
 - case control

Eg: Shigella outbreak in Sydney

Most were S..Sonnei type B

MSM ??type of investigation



Step 3: Stop/ control/ prevent further transmission

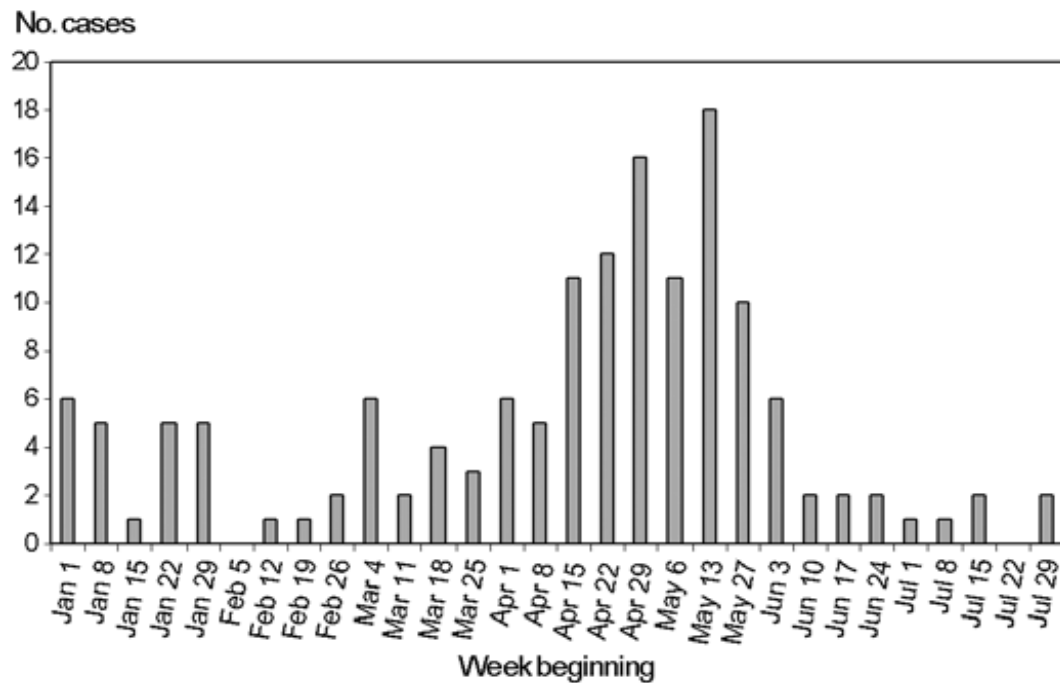


Figure. *Shigella sonnei* biotype G laboratory reports, by date of specimen collection, New South Wales, January 1–July 31, 2000.

Eg: Shigella outbreak

- Inspection of Sex Premises
- Shut down venues until cleaned
- Guidelines of cleanliness for Sex Venues
- Training of cleaners and staff and safer sex etc..
- Patient and community education
- ‘wash your hands’

Step 4: document lessons learnt, pass on the wisdom!

EMERGING INFECTIOUS DISEASES

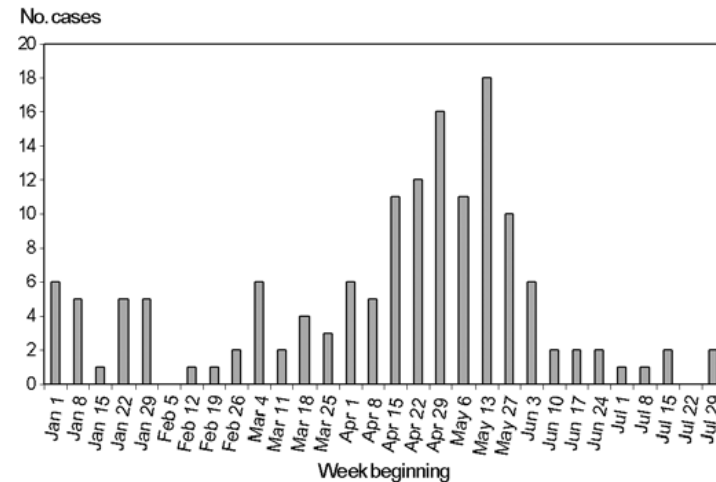
Shigellosis Linked to Sex Venues, Australia

Belinda O'Sullivan,* Valerie Delpech,*
Giulietta Pontivivo,† Thomas Karagiannis,‡
Debbie Marriott,‡ John Harkness,‡
and Jeremy M. McAnulty*

From January 1 to July 31, 2000, 148 cases of *Shigella* infection were reported in New South Wales, Australia, compared with an annual average of 95 cases. Of reported cases, 83% were confirmed as *Shigella sonnei* biotype G infections; 80% were in homosexual men. Visiting a sex venue in the 2 weeks before onset of illness was the only factor significantly associated with shigellosis.



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Step 5: ..and anticipate the future...

24 October 2008

NSW Health investigates possible Shigella outbreak

NSW Health is investigating an increase in cases of Shigella, an infection that causes diarrhoea, sometimes with mucus and even blood, as well as fever, nausea and feeling generally unwell. There have been 12 confirmed cases since mid-September, principally amongst men who have sex with men (MSM) living in inner Sydney.

It coincides with recent Shigella cases amongst MSM in Victoria.

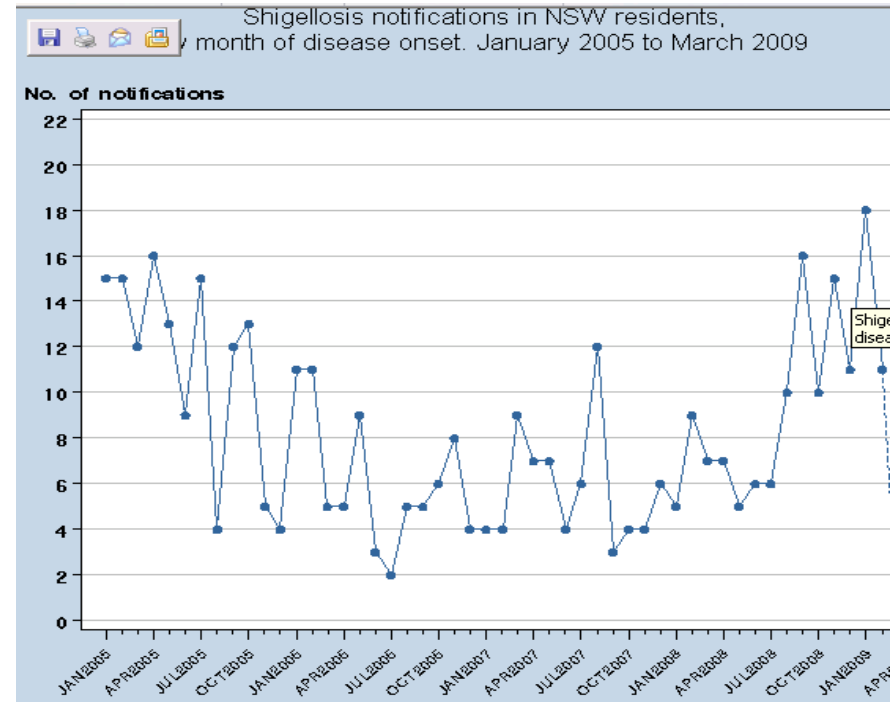
While the disease is generally short-lived, it can be worse in anyone with a poor immune system.

Director of NSW Health Communicable Diseases Branch Dr Mitchell Smith said "anyone who has severe diarrhoea should see their GP, so they can be assessed".

Their doctor may order a faecal test and prescribe medication.

The exact mode of spread has not yet been identified in this outbreak; however the illness is very easily spread, with only a small dose of germs needed to cause disease. Infection is usually caused by close contact with someone else with Shigella or consuming food or drink contaminated with the bacteria.

Prevention is by maintaining good general hygiene including thorough hand washing especially after sex, after going to the toilet, and before eating.



Summary



- Expect the unexpected
- Stay connected...
- *Think locally and globally, Act locally (and globally)*



Thank you !

Your input, suggestions and collaboration are always very welcome.....

A salmonellosis outbreak linked to internally contaminated pork meat

Valerie Delpech , Jeremy McAnulty Keira Morgan

South Eastern Sydney Public Health Unit, Kogarah, New South Wales

ABSTRACT

In August 1995, we investigated an outbreak of salmonellosis among patrons who attended a church camp in southern Sydney. Of the 73 attendees interviewed, 22 reported a gastroenteritis illness within two days of the conclusion of the camp, with one attendee hospitalised. Two stool specimens, one from each of two attendees, were both positive for *Salmonella typhimurium* phage type 9. A cohort study of 68 attendees established a statistically significant association between illness and the consumption of de-boned roast pork (estimated relative risk infinite, $p=0.03$) and between illness and the degree of cooking of the pork meat (x2 for trend 5.8, $p<0.02$). The outbreak was most likely caused by consumption of roast pork that had been internally contaminated during the de-boning process. Meat and meat products that may be internally contaminated, such as de-boned meats, should be thoroughly cooked. Guidelines about minimum cooking temperatures of meats liable to internal contamination should be developed for commercial food handlers in Australia

The logo for Nova Scotia, featuring a stylized blue and white crest above the text "NOVA SCOTIA" in blue capital letters.

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Table. Characteristics of shigellosis patients and controls, New South Wales, Australia, April 1– July 31, 2000

	Patients N=42 (%)	Controls N=65 (%)	Crude odds ratio (95% CI ^a)
Casual sex partners in the last 3 months	37 (88)	46 (71)	3.1 (1.0 to 9.0) ^b
Visited a sex venue in the last 3 months	31 (74)	28 (43)	3.6 (1.6 to 8.5) ^b
Visited a sex venue in the last 2 weeks	24 (57)	14 (22)	4.8 (2.1 to 11.4) ^b
More than one sex partner in the last 2 weeks	21 (50)	21 (32)	3.1 (1.3 to 7.5) ^b
Any sex in the 2 weeks before onset of illness ^c	37 (88)	52 (80)	Incalc ^d
Oral receptive sex in the last 2 weeks ^d	35 (83)	48 (74)	1.8 (0.7 to 4.7)
Anal insertive sex in the last 2 weeks ^d	26 (62)	32 (49)	1.7 (0.8 to 3.7)
Anal receptive sex in the last 2 weeks ^d	25 (60)	28 (43)	1.9 (0.9 to 4.3)
Oral-anal insertive sex in the last 2 weeks ^d	13 (31)	22 (34)	0.9 (0.4 to 2.0)
Digital insertive sex in the last 2 weeks ^d	26 (62)	31 (48)	1.8 (0.8 to 3.9)
Not always washing hands after sex in the last 2 weeks	16 (38)	19 (29)	1.4 (0.6 to 3.2)
Dined out at a commercial food outlet ^c in the last 3 days before onset of illness	25 (60)	27 (42)	2.5 (1.1 to 5.8) ^b
Traveled overseas in the last 3 months	9 (24)	12 (18)	1.3 (0.5 to 3.4)
HIV positive	22 (52)	31 (48)	1.2 (0.6 to 2.6)

^a95% CI, 95% confidence intervals.

^bSignificant at $p < 0.05$

^cFor controls, this question was asked in relation to previous 2 weeks rather than the 2 weeks before onset of illness.

^dMissing values were excluded from the analysis except for sexual activity variables (e.g., oral insertive sex), for which participants were asked to indicate “yes” if they did the specified activity. As such, failure to answer these questions was considered a “no” response.