Response to community outbreak of MenW: lessons learnt

Symposium: Controlling meningococcal disease in 2017, Sydney, NSW

7 April 2017

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Department of Health, Western Australia
Outline

• Epidemiology meningococcal disease in WA
  – emergence of MenW

• Kalgoorlie cluster of MenW
  – community outbreak?
  – operational aspects

• Lessons learnt
Epidemiology of meningococcal disease in WA
Meningococcal disease notification rate by year – WA & Australia

**MenCC Vaccine**
Meningococcal disease notifications by age – WA, 1990-2013
Meningococcal disease notification rates by Aboriginality & year – WA

Overall adjusted Relative Risk = 3.2

Age-standardised
Average age-specific meningococcal disease notification rate by Aboriginality – WA, 1990-2013

84% of all Aboriginal cases aged 0-9 years (69% aged 0-4 yrs)
Emergence of serogroup W meningococcal disease (MenW)
Meningococcal disease: number of cases notified by year & serogroup - WA

![Graph showing the number of meningococcal disease cases notified by year and serogroup in Western Australia. The graph highlights a significant drop in cases post-MenCC Vaccine introduction.](image-url)
Meningococcal disease: number of cases notified by year & serogroup - WA

MenCC Vaccine
Meningococcal disease case fatality by year - WA, 1990-2013

Overall case fatality = 6.1%
- 1997-2013 = 4.3%
- 2013-2016 = 9.9%
Epidemiology – key points

- Serogroup W clonal complex 11 strains emerging in WA and nationally:
  - more likely to present atypically
  - case fatality rate about double that of MenB
  - All age groups at risk, though biggest risk in young Aboriginal children.
Community outbreak of MenW in the Kalgoorlie region
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CASE 1
- non-Aborig young adult.
- BC +ve

CASE 2
- Aboriginal child
- BC +ve

CASE 3
- Aboriginal child
- BC +ve

CASE 4
- 1yo F; Aboriginal
- fever/poor feeding
- BC +ve

CASE 5
- non-Aborig. older teen
- LP +ve (PCR only)
Decision making

- Formed WA expert advisory group
  - Clinical
  - Laboratory
  - Public health

- After 5th case, rate was 11/100 000 population
  (accepted trigger is ≥3 cases at a rate of ≥ 10/100 000 over 3 month period)

- Target age groups: 2mth to 4 years; 15-19 years
Goldfields meningococcal outbreak: Free vaccinations offered in bid to avoid crisis

Updated 8 Dec 2016, 1:36pm

A large-scale but targeted vaccination program to protect young children and teenagers from an outbreak of the potentially lethal W strain of meningococcal is set to be rolled out in Western Australia's Goldfields.

There have been five confirmed cases of the W strain at Kalgoorlie-Boulder and neighbouring towns over the past two months, prompting health authorities to take the unprecedented step of offering free vaccinations in the area.

"This is the first time anything like this has been done on this scale in Australia, I'm advised," WA Health Minister John Day.

PHOTO: Health Minister John Day encouraged all families to take advantage of the free vaccinations.
(ABC News: Andrew O'Connor)
Governance

- Managed using Incident Control System principles
  - Central coordination, vaccine procurement, written resources, statewide media
  - Operations aspects, local comm’s – Goldfields PHU
  - Logistics - DPMU
  - WebEOC (incident management tool) set up
  - Daily (initially) briefings/sitreps
Operational aspects

• Utilised school-based vaccination program

• Public clinics
  – Population health clinic
  – Large purpose-built clinic at hospital (crowd control important)
  – Aboriginal Medical Service

• General Practitioners
Engagement with service providers

- Good relationship with local AMS and GPs
- Early, and ongoing, meetings with all GP practices
- GP liaison officer assigned - daily contact
- Service providers felt supported and keen to be involved
Communications and engagement with community

- **healthdirect** hotline number set up
  - comprehensive Q&A sheet critical ('living' document)
- Assigned single, authoritative person as the ‘face’ of the outbreak/response
- Lot of local media undertaken
  - paper, radio, TV, facebook
- Social media – multiple functions:
  - To inform public, gauge public response, keep an eye on public sentiment (eg. vaccine objectors).
Jab need for disease spike

Laura Meachim and Dylan Caporn

State health officials are moving fast to vaccinate 5000 Goldfields children after a community outbreak of the meningococcal W strain.

Five cases of meningococcal have been identified in two months, far more than the region’s average of just one per year.

The targeted free vaccination program starts on Monday and will be available to children under four and teenagers aged 15-19 in Kalgoorlie-Boulder, Coolgardie and Kambalda.

It is expected to cost about $600,000.

Health Minister John Day yesterday said the number of diagnosed cases meant the disease was classified as a community outbreak but it was not at crisis levels yet.

“We want to ensure it doesn’t become like (a crisis situation) and the number of cases has reached a threshold for the number of people in the Kalgoorlie and surrounding community, above which it is recommended that a community vaccination program be put in place,” he said.

“This is the first time anything like this has been done on this scale in Australia.

“Meningococcal disease, although it doesn’t affect a large number of people, when it does, it can have potentially very serious consequences and they’ve been well publicised.

“I would strongly encourage all people and their families in the target age group to take advantage of this free vaccination program.”

Health Department communicable diseases director Dr Paul Armstrong said there was a high risk of contracting the disease compared to other areas. “Meningococcal disease lives in the back of up to 20 per cent of people’s throats, and for whatever reason in the Kalgoorlie area there seems to be a higher rate of that happening and therefore a higher transmission of those germs to people who are susceptible and that’s why we’ve got a high rate of disease there,” he said.

Kalgoorlie-Boulder Population Health’s Dr Clare Huppatz said by targeting the at-risk age groups in the population, doctors should be able to reduce the amount of cases of the disease.

“It is more frequently carried in the 15-19-year-old age group, so by targeting that age group we will actually reduce the carriage in the population and that will help protect everyone in the population,” she said.

Kalgoorlie-Boulder Dr Malcolm Hodsdon said parents should definitely take the opportunity to prevent their children from contracting the life-threatening disease.

“It impairs immunity to the children, and as we all know, the meningococcal infection is potentially fatal and can have catastrophic consequences if not detected early,” he said.

“Prevention is always better than a cure so I think parents should take the opportunity to get their kids vaccinated.”

Dr Hodsdon and other Kalgoorlie-Boulder GPs will be offering the vaccinations free to those eligible, along with clinics at schools that are still open, the Bega Carngarri Health Service and community health clinics.

Of the five recent cases of the disease, three were Aboriginal children and were two non-Aboriginal young adults.

All have either made or are expected to make a full recovery.

For more information on clinic days and times, parents can call 1800 131 231.

Free jabs to curb meningococcal

Dylan Caporn

A community outbreak of the meningococcal W strain in the Goldfields has prompted the State Government to offer a free vaccine to about 5000 young children and teenagers from Monday.

The targeted vaccination program will be available to children under four and teenagers aged between 15 and 19 in the Kalgoorlie, Boulder, Coolgardie and Kambalda areas after five cases of meningococcal were diagnosed in the region over the past two months. The program will cost about $400,000.

Health Minister John Day said the number of diagnosed cases meant the disease was now classified as a community outbreak, but it was not at crisis levels yet.

“We want to ensure it doesn’t become like (a crisis situation). The number of cases has reached a threshold for the number of people in the Kalgoorlie and surrounding community, above which it is recommended that a community vaccination program be put in place,” he said.

“This is the first time anything like this has been done on this scale in Australia.”
Recording/capturing adverse events

• Two-pronged approach:
  – ‘Enhanced, passive’ surveillance system - regular promptings of ED and GPs to report adverse events.
  – SMS system – vaccinees asked if had had any reaction

• 80% response rate to SMS messages
Results

• 3,847 vaccines given = 69.7% coverage
  – 0 – 4 yo – 78.4%
  – 15 – 19 yo - 57.4%
  – Progressive decrease in coverage rate as the adolescent group got older (30% in 19yos)
  – Good uptake in Aboriginal population

• No new cases since start of program

• Adverse events:
  – Overall, 14 adverse events reported, none severe
Triumphs and challenges

- **Triumphs**
  - Good support from politicians, the media, service providers, and the public
  - WGS is a powerful tool to guide such interventions
  - Local PHU team well-versed in outbreak management
  - Managing incident using emergency management principles
  - Using *healthdirect* took pressure off front line staff
  - Good coverage rates achieved, including in Aboriginal population
Triumphs and challenges

• Challenges
  – 2016 was the first time WA had conducted community vaccination campaigns – starting from scratch (previous simulation exercises would have helped)
  – Remoteness – governance process important
  – Managing expectations of surrounding towns
  – Temporary nation-wide vaccine shortage ensued
  – Carriage studies expensive and difficult to run without prior planning
  – Achieving high coverage rates in adolescents difficult
  – Resource intensive - opportunity costs
Acknowledgements

• Outbreak Response team
  – Goldfields PHU
  – WA Country Health Service
  – Communicable Disease Control Directorate (CDCD)
  – Disaster Planning and Management Unit

• Dr Gary Dowse – CDCD

• Dr Charlene Kahler – University WA (WGS)

• Dr David Speers – PathWest
QUESTIONS?