INCREASE IN VACCINE-PREVENTABLE DISEASES ACROSS THE KIMBERLEY

Key points:

- Recent increase in notifications of **pertussis** in Kununurra and other regions. Young infants are the most at risk of severe disease and may not present with the typical inspiratory whoop. Have a low threshold for testing patients with cough, especially in contacts. Treat cases and high risk contacts to minimize transmission.
- **Chickenpox** clusters notified among school students. Perform varicella PCR of vesicles. Testing is particularly important for vaccinated children. Complete a notification form.
- Unusually high **influenza** activity continues in the West-Kimberley.

Pertussis

Since 1st January 2019 12 confirmed cases of pertussis have been notified to the Kimberley Population Health Unit. The majority of these cases are residents of the Kununurra area. Four of these cases have been notified within the past week, including 2 children aged <4 years.

Pertussis (whooping cough) is a prolonged coughing illness caused by the bacillus *Bordetella pertussis*. Transmission is by droplet spread or direct contact with infectious respiratory mucous secretions. Adults and adolescents are often a source of infection for young infants. An initial catarrhal phase is characterised by runny nose, sneezing, absent or low-grade fever, and a mild occasional cough. Cases are infectious from the onset of these catarrhal symptoms. The cough becomes paroxysmal (after 1 to 2 weeks), and may end in vomiting, cyanosis and/or a characteristic high-pitched inspiratory 'whoop'. Infants are less likely to have the inspiratory whoop and a significant catarrhal stage and are more likely to present with gagging, gasping, cyanosis, apnoea or non-specific signs such as poor feeding or seizures.

Infants <6 months of age account for the vast majority of pertussis hospitalisations and deaths. Pertussis is a high public health priority for this reason. The objective of the public health response is to prevent pertussis in infants <6 months of age with consideration given to exposures in household, child care and health care settings.

Case definition

Both **confirmed** cases and **probable** cases should be notified. For details click here. A confirmed case requires either:

a) Laboratory definitive evidence OR
b) Laboratory suggestive evidence AND clinical evidence

A probable case requires clinical evidence AND epidemiological evidence

Laboratory definitive evidence

1. Isolation of Bordetella pertussis OR
2. Detection of B. pertussis by nucleic acid testing/PCR (preferred)

Clinical evidence

1. A coughing illness lasting two or more weeks OR
2. Paroxysms of coughing OR inspiratory whoop OR post-tussive vomiting.

Epidemiological evidence

Contact between two people involving a plausible mode of transmission at a time when:

a) One of them is likely to be infectious (from the catarrhal stage, approximately 1 week before, to 3 weeks after onset of cough) AND
b) The other has an illness which starts within 6 to 20 days after this contact AND
c) At least 1 case in the chain of epidemiologically linked cases (which may involve many cases) is a confirmed case.

Nucleic acid testing (NAT)/PCR

- PCR is the diagnostic method of choice, unless presentation is delayed until 4 weeks after any cough onset or 3 weeks after paroxysmal cough onset, after which time serology may be preferred
- Nasopharyngeal swabs with a dry orange top PCR swab are optimal.

Case management

It is the responsibility of the treating doctor to treat infectious cases and to identify contacts at high risk of disease. All cases presenting within 21 days of symptom onset should be treated with antibiotics to reduce communicability. Azithromycin prescribed as per eTG is suitable for most patients. Advise infectious cases against mixing with vulnerable contacts. Exclude infectious cases from work, school, preschool and childcare until a full **5 days** of antibiotic therapy is completed. Complete a notification form.

Contact management

The aim of identifying contacts is to:

- Alert them to the possibility that they could develop disease, and
- Recommend antibiotic prophylaxis for contacts who are infants <6 months of age or people who may transmit pertussis to these infants (i.e. high risk contacts).

Close contacts are people with face-to-face exposure (within 1 metre) to an infectious case for a single period of at least one hour. The period of communicability is less when a neonate is involved. High risk contacts include expectant parents, households with a child <6 months, health care staff working with infants <6 months and women in the last month of pregnancy. Antibiotic prophylaxis should be provided to high risk contacts within 14 days of first contact with an infectious case. Further information available here.

Vaccination

Ensure the immunisation status of children, adolescents and pregnant women in your area are up to date. Healthcare workers should check their immunisation status. For more information see the Australian Immunisation Handbook.

Varicella (chickenpox)

Several clusters of clinically diagnosed chickenpox have been notified among school students in the Broome region in recent weeks. Chickenpox is highly infectious and transmission occurs via airborne droplets or direct contact with nasopharyngeal secretions or lesions of an infected person. In healthy children, chickenpox is usually a mild disease of short duration. However, complications occur in approximately 1% of cases. It is more severe in adults and can cause serious and even fatal illness in immunosuppressed subjects of any age. Congenital varicella syndrome has been reported after varicella infection in the first and second trimesters of pregnancy and may result in foetal skin scarring, limb defects, ocular anomalies and neurologic malformations.

Case definition

Both **confirmed cases** and **probable cases** should be notified. For further details click here. A confirmed case requires either:

1. Laboratory definitive evidence AND clinical evidence OR
2. Clinical evidence AND epidemiological evidence.

Laboratory definitive evidence

1. Isolation of varicella-zoster virus from a skin or lesion swab OR
2. Detection of varicella-zoster virus from a skin or lesion swab by nucleic acid testing/PCR (preferred).

Clinical evidence

Acute onset of a diffuse maculopapular rash developing into vesicles within 24 to 48 hours and forming crusts (or crusting over) within 5 days.

Epidemiological evidence

1. Contact between 2 people involving a plausible mode of transmission at a time when:
   a. 1 of them is likely to be infectious AND
   b. the other has illness 10 to 21 days after contact AND
2. At least 1 case in the chain of epidemiologically-linked cases is laboratory confirmed.

Case management

Complete a notification form. **Testing** is **strongly** recommended for vaccinated cases. If positive, samples can be referred for identification as a vaccine or wild type strain. Cases should be excluded from childcare, school or work until all the vesicles have dried and crusted- usually by the 5th day of the rash, often earlier for vaccinated children with breakthrough varicella.

Contact management

Significant exposure is defined as living in the same household as a case, or direct face-to-face contact with a case for at least 5 minutes, or being in the same room for at least 1 hour. The period of infectivity is from 48 hours before the onset of rash until crusting of all lesions has occurred.

High risk contacts include:

- pregnant women who are, or are presumed to be, susceptible
- neonates whose mothers develop varicella between 7 days prior to and 1 month after delivery
- neonates exposed to varicella in the first month of life, if their mother is seronegative
- premature infants (born <28 weeks gestation or birthweight < 1000g) exposed in hospital, regardless of maternal history of varicella
- immunosuppressed individuals, particularly if known to lack detectable antibodies to varicella

Zoster immunoglobulin (**ZIG**) **must** be given IM as early as possible to neonates whose mothers develop varicella between 7 days prior to and 2 days after delivery. Neonatal mortality without ZIG is 30%.

Other high risk contacts should be given ZIG IM within 96 hours of significant exposure to either chickenpox or shingles. Immunocompetent high risk contacts (other than neonates) should be tested for antibodies if practicable, as long as this does not delay ZIG administration for greater than 96 hours from their first significant exposure. Phone KPHU to facilitate urgent ZIG delivery.

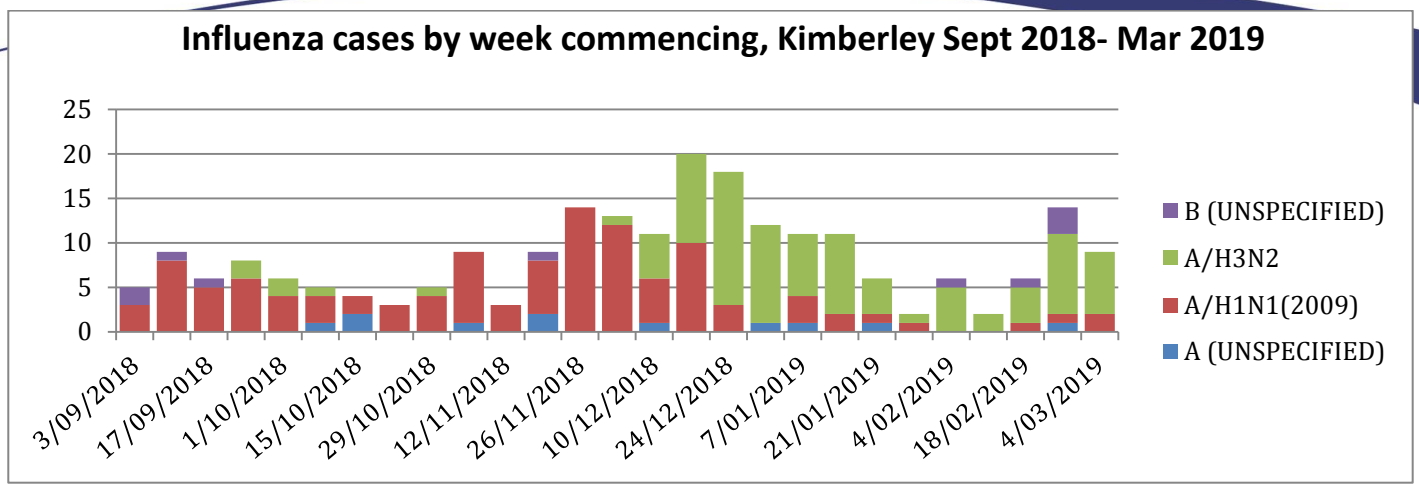
Vaccination

The National Immunisation Program (NIP) provides a combined measles, mumps, rubella and varicella (MMRV) vaccine free of charge to all children aged 18 months. Prior chickenpox infection is not a contraindication to receiving MMRV. While current evidence indicates that 2 doses of varicella-containing vaccine increases protection and minimises the risk of breakthrough varicella, routine administration of 2 doses for children up to 13 years of age is not included on the NIP. Families wishing to obtain a second vaccine may see their health clinic for a private prescription.

Influenza

The high influenza activity commencing late last year continues, particularly in the Broome region. There have been 77 confirmed influenza cases notified to KPHU since 1 January 2019, 66% of which have been among residents of the Broome postcode including remote communities. The majority of confirmed influenza cases in 2019 have been influenza A/H3N2.

Year to date, Aboriginal people and those aged over 45 years have been the predominant groups affected. Less than 20% of confirmed cases received the influenza vaccine in 2018.



As the 2019 influenza vaccination is not yet available, clinicians should practice the following in the prevention and management of influenza:

- Use antivirals (Oseltamivir) within 48 hours of onset of influenza like illness symptoms in people from high risk groups*, and/or patients who are moderately to severely unwell or rapidly deteriorating
- Prevent transmission of influenza by promoting cough etiquette, hand hygiene and isolating at home.

*High risk groups include:

- All children 6 months to < 5 years
- Aboriginal people ≥15 years
- Adults ≥65 years of age
- Pregnant women (in any trimester)
- All people aged over 6 months with risk factors for severe disease. These include:
    - Cardiac disease, chronic respiratory conditions, neurological conditions, renal, hepatic or haematologic disease, diabetes or other metabolic conditions
    - People with impaired immunity
    - Children <11 years on long-term aspirin therapy
    - Morbidly obese people (i.e. BMI 40+)
    - Residents of nursing homes.

Vaccination

Annual vaccination is the most important measure to prevent influenza and its complications. All 2018 influenza vaccine stocks have now expired. In 2019 all Aboriginal people aged ≥6 months will be eligible for free influenza vaccine on the NIP. Influenza virus strains included in the 2019 seasonal influenza vaccines are:

- A/H1N1: an A/Michigan/45/2015 (H1N1)pdm09 like virus
- A/H3N2: an A/Switzerland/8060/2017 (H3N2) like virus (**New in 2019**)
- B: a B/Colorado/06/2017 like virus (**New in 2019**)
- B: a B/Phuket/3073/2013 like virus

The 2019 influenza vaccines will be available through the NIP from April, subject to local vaccine supply. Anyone receiving 2018 vaccine this year should be encouraged to receive the 2019 vaccine when it becomes available due to the change in composition. Health care workers should ensure they are vaccinated when the 2019 vaccine becomes available.

Please contact the Kimberley Population Health Unit for further advice on **(08) 91941630.**