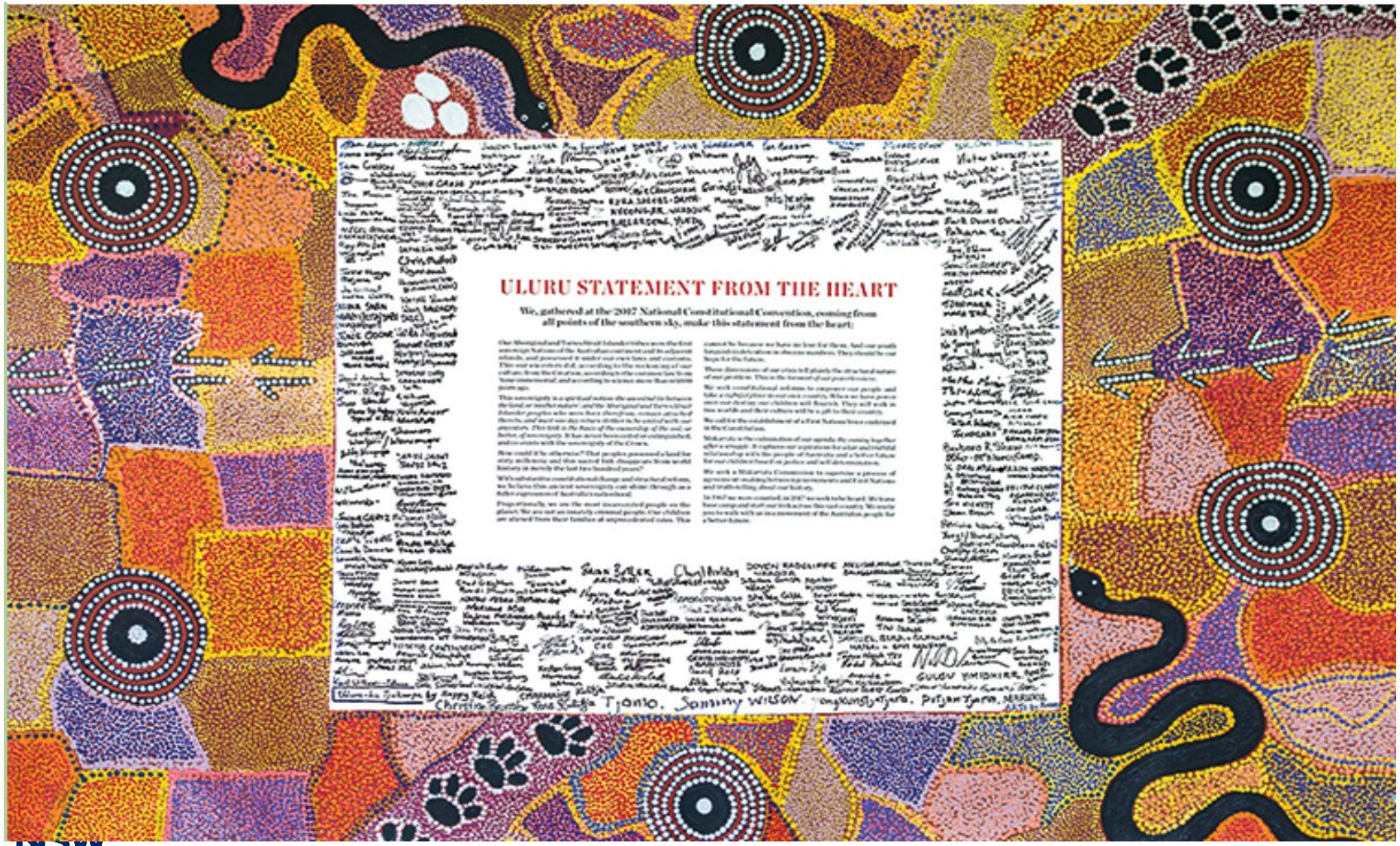
HNE Immunisation update 2020

“In 1967 we were counted, in 2017 we seek to be heard”



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Welcome

- HNE self- reporting professional development Annual Update for PN & LHD Authorised Immunisers
- Authorised Immunisers not up date currently keep record attended this session then up to date for for 2020.
- Other LHD's consult with local PHU / Immunisation Coordinator
- Thanks to PHN, Colleen & Donna @ CC PHU

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Authority to Immunise

NSW MINISTRY OF HEALTH
POISONS AND THERAPEUTIC GOODS ACT 1966
Authorisation to Supply Poisons and Restricted Substances

Under the provisions of clauses 170 and 171 of the Poisons and Therapeutic Goods Regulation 2008, I, Judith Mackson, Chief Pharmacist, a duly appointed delegate of the Director-General of NSW Health, do hereby issue AUTHORITY to registered nurses and midwives, hereby specified as a class of persons, to supply those poisons and restricted substances listed in the Schedule hereunder either singly or in combination, pursuant to clauses 17 and 53 of the Regulation, subject to the following conditions:

(1) The registered nurse/midwife is employed in connection with a vaccination program, and

(2) The registered nurse/midwife administers a vaccine only in connection with that vaccination program, and

(3) The registered nurse/midwife has successfully completed;

  a) The Department of Health Immunisation Accreditation Program for Registered Nurses, or

  b) The immunisation education program administered by the Australian College of Nursing or its predecessors, or

  c) An interstate or overseas immunisation education program that conforms to the National Guidelines for Immunisation Education for Registered Nurses, as approved by the Australian College of Nursing.

(4) The secure storage, pre and post-vaccination assessment and administration of each vaccine is undertaken in accordance with the procedures specified in the current edition of the National Health and Medical Research Council's *The Australian Immunisation Handbook*, and

(5) The poisons and restricted substances are stored at the temperature stated on the respective manufacturer's pack, and

(6) During each vaccination clinic the registered nurse/midwife carries adrenaline for use in the treatment of anaphylaxis, and

(7) The registered nurse/midwife ensures that procedures for the administration of adrenaline comply with the procedures specified in the current edition of *The Australian Immunisation Handbook*, and

(8) The registered nurse/midwife reports each adverse event following immunisation to the local Public Health Unit, and

(9) The registered nurse/midwife ensures that a medical officer is contactable for medical advice during the vaccination clinic, and

(10) To maintain authority to immunise, the registered nurse/midwife annually reviews best practice policy for immunisation. This may be, but is not limited to, attendance at seminars on current practices. An annual statement of proficiency in cardio-pulmonary resuscitation must also be obtained, and

Annually reviews best practice for immunisation

How to maintain your authority to immunise as an RN or RM

It is your responsibility to keep your practice current.

- The registered nurse/midwife must annually review best practice policy for immunisation.
- Annual CPR

Activities that would assist in fulfilling these requirements include:

- Reading To the Point and other newsletters
- Completing the cold chain online module 'Vaccine Storage and Cold Chain Management' available as follows:
- HNE employees, through My Health Learning
- For non-HNE nurses via the NSW Health website:
- http://www.health.nsw.gov.au/immunisation/coldchain/story_flash.html
- Education Updates—**these are not mandatory**
- Journal articles, media releases, online resources, livestream presentations, podcasts etc.

How can I document that I have maintained my currency in immunisation?

- Online apps, eg. Ausmed CPD
- Journalise your learning, eg with the APHRA Self Directed Evidence Record. (google this)

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Adrenaline Shortage

RE: Shortage of Adrenaline 1:1,000 (1 mg/1 mL) ampoules and alternative supply arrangement under Section 19A of the *Therapeutic Goods Act*.

PO Box 718
Mona Vale
NSW 1660
Australia
www.clinigengroup.com
+61 2 8401 9777
+61 2 8401 9788
info@linkhealthcare.com.au

Dear Healthcare Professional,

This notification is sent by LINK to inform your organisation that due to the shortage of Australian registered **ADRENALINE-LINK 1:1,000 1mg/mL adrenaline (epinephrine) acid tartrate injection BP ampoule (AUST R 10248)**, LINK has arranged the supply of an alternative product. LINK can supply **ADRENALINE RENAUDIN, adrenaline 1mg/mL solution for injection ampoule,** registered and marketed in France.

ADRENALINE RENAUDIN 1mg/mL ampoules are NOT registered in Australia and supply is authorised under an exemption granted by the Therapeutic Goods Administration (TGA) under Section 19A of the *Therapeutic Goods Act, 1989* until **30 April 2020.**

ADRENALINE RENAUDIN 1mg/mL ampoules are indicated for the treatment of anaphylactic shock.

A comparison table of the indications and dosage for the Australian registered product and the French product is given below. As the concentration of adrenaline in the French Product is the same as in the Australian registered product i.e. both contain 1 mg adrenaline per mL in a glass ampoule, the dosage and instructions in the Australia Product Information are also considered applicable to the use of the French product. Please refer to the respective Product Information for more detailed information.

	ADRENALINE-LINK 1:1,000 1mg/1mL injection ampoule - ARTG 12048	**S19A ADRENALINE RENAUDIN adrenaline 1 mg/mL solution for injection, 1mL ampoule**
Presentation	Clear glass ampoule containing 1mg/mL of adrenaline	Clear glass ampoule containing 1mg/mL of adrenaline
Indication	Adrenaline 1:1,000 is the drug of choice in the emergency treatment of acute severe anaphylactic reactions due to insect bites, drugs and other allergens. It may also be used for the symptomatic relief of respiratory distress due to bronchospasm.	• Treatment of cardiovascular arrest. • Treatment of anaphylactic shock. • Treatment of cardio-circulatory distress with states of anaphylactic, haemorrhagic, traumatic, infectious or secondary to cardiac surgery shocks. In life threatening situations adrenaline may be used even in sulphite sensitive patients.
Dosage	**Severe anaphylaxis or asthma:** *Adults:* The usual initial dose is 100 to 500 microgram (0.1 to 0.5 mL of the 1:1,000 solution) SC or IM. SC doses may be repeated at 20 minute to 4 hour intervals depending on the response of the patient and the severity of the condition. In severe anaphylactic shock, slow and cautious IV administration may be necessary to ensure absorption of the	**Treatment of established anaphylactic shock:** • Dilute a one mL ampoule in 10 mL 0.9 % sodium chloride and administer IV bolus of one mL of the obtained dilution, i.e. 0.1 mg adrenaline. Bolus are renewed until hemodynamic state restoration. A close monitoring will be established. • Or administer via subcutaneous route 0.3 mL of undiluted solution i.e. 0.3 mg adrenaline. Improvement generally

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FAQ

- Do I need to restart a course of vaccines again – NO
- Can I give a live vaccine with an inactivated vaccine – YES
- Eg. Can I give influenza and pneumococcal vaccine on the same day – YES
- Can I give an MMR or flu vaccine to someone with an egg allergy – YES

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NSW Pharmacist Vaccination Standards

An authorised pharmacist in NSW may administer the following vaccines to the specified age ranges:

- Influenza vaccine: Individuals aged 10 years and over
- Measles – mumps – rubella combination vaccine (MMR): Individuals aged 16 years and over
- Diphtheria – tetanus – pertussis combination vaccine (dTpa): Individuals aged 16 years and over

A registered pharmacist initiating and administering a vaccine under his/her own authority in a NSW retail pharmacy must comply with the following three components of clause 48A of the NSW *Poisons and Therapeutic Goods Regulation 2008* (available at http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+392+2008+cd+0+N) which prescribes rules for: -

A. Completing an accredited vaccination training course,
B. Recording each vaccination, and
C. Conducting vaccinations under approved practice standards

3.3. During pre-vaccination assessment, the pharmacist must advise all individuals who are identified as eligible for funded vaccines of their eligibility, and of how to access funded vaccines.

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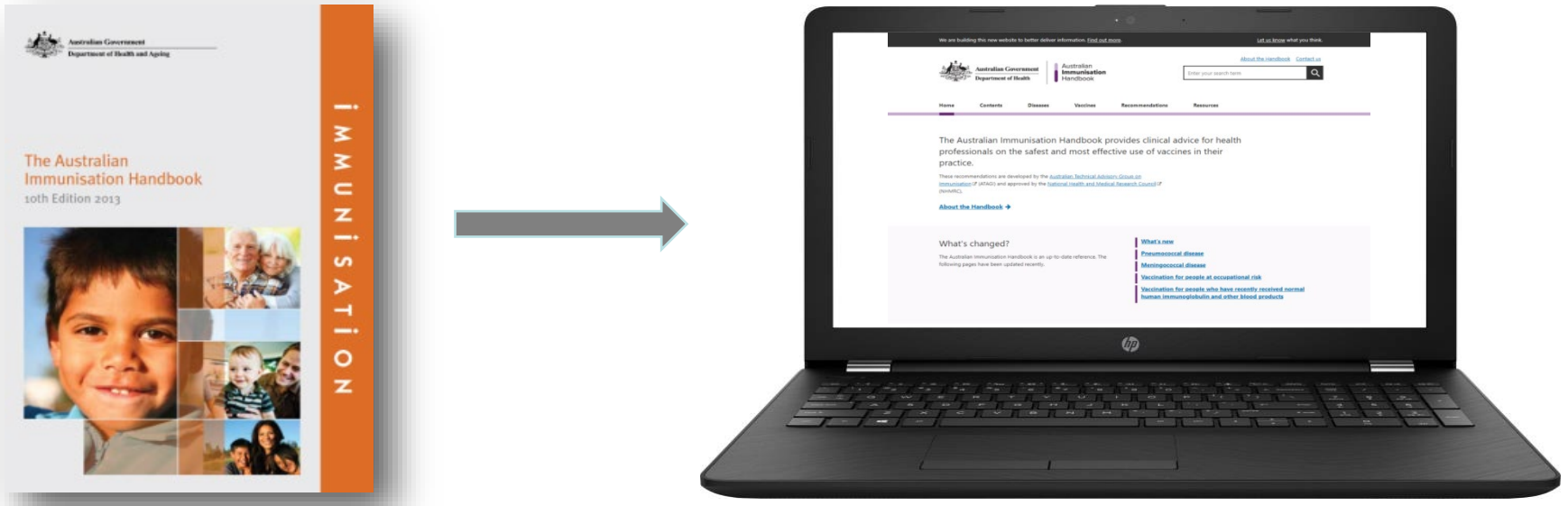
The digital Handbook



The Australian Immunisation Handbook provides clinical advice for health professionals on the safest and most effective use of vaccines in their practice.

These recommendations are developed by the Australian Technical Advisory Group on Immunisation (ATAGI) and approved by the National Health and Medical Research Council (NHMRC).

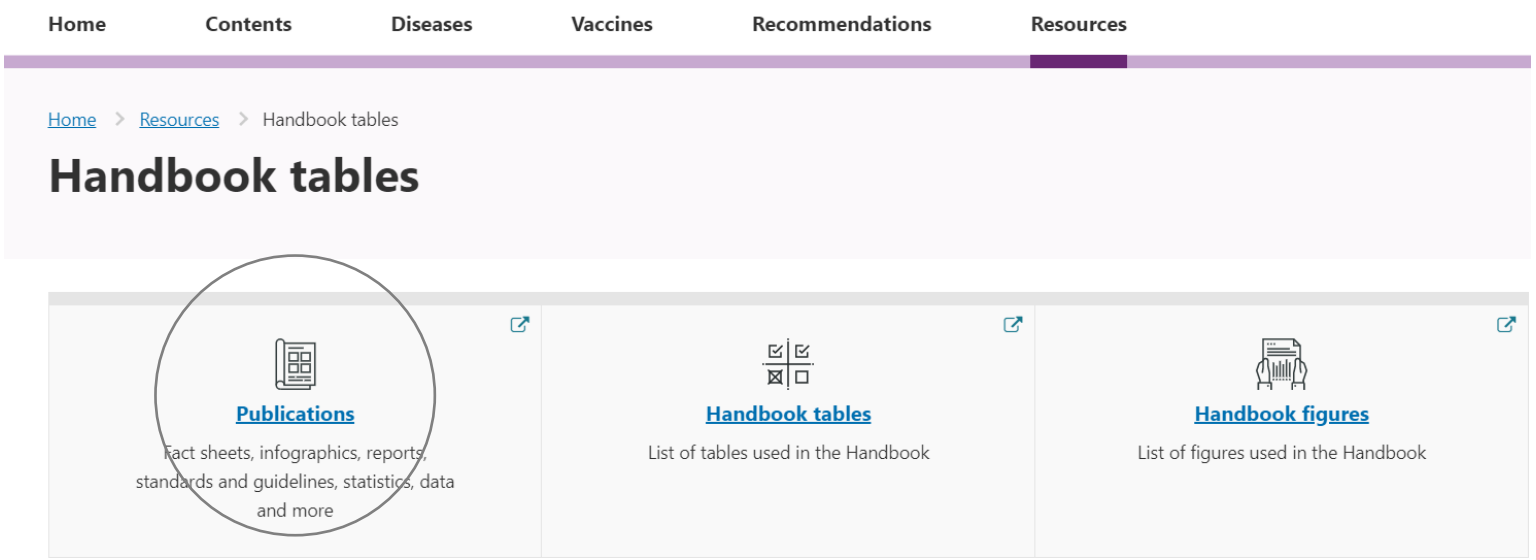
About the Handbook →

What's changed?

- **Pertussis (whooping cough)**
- **Rubella**

Resources

- All table and figures in the Handbook
- Publications icon - infographics
  - summaries of Handbook information in a printable sheet



Australian Government Department of Health | Australian Immunisation Handbook

Vaccination for people who have regular contact with animals

Check the immunisation history for anyone handling animals and give any missed vaccines.

People working in the veterinary industry

These workers can come into contact with a range of animals, which can carry different zoonotic diseases. Only some are vaccine preventable.

Give **Q fever**, **influenza** and **rabies vaccines** to:

- veterinarians
- veterinary nurses
- veterinary students

People working with poultry or swine

These workers are in contact with chickens, ducks and pigs, which can carry avian or swine influenza virus.

Give **influenza vaccine** during an outbreak of avian or swine influenza to:

- poultry workers
- those handling or culling poultry
- swine industry workers

People exposed to animals or products at risk of carrying Q fever

These workers are in contact with high-risk animals, such as sheep, cattle, goats, kangaroos and camels, which can carry Q fever.

Give **Q fever vaccine** to:

- those working with high-risk animals or their products, including agricultural college staff and students aged >15 years
- wildlife and zoo workers who are in contact with high-risk animals
- laboratory personnel who work with veterinary specimens or with Q fever organism (*Coxiella burnetii*)

People working with bats or lyssaviruses

These workers are in contact with flying foxes and microbats, or their tissues, which can carry Australian bat lyssavirus.

Give **rabies vaccine** to:

- bat handlers
- bat scientists
- wildlife officers
- zoo curators
- laboratory personnel who work with bat samples or tissues, or lyssaviruses

See the Australian Immunisation Handbook for more details.

Australian Government Department of Health | Australian Immunisation Handbook

Catch-up vaccination for children <10 years old

Catch-up vaccination aims to provide the best protection against disease as quickly as possible by completing a child's recommended vaccination schedule.

1 Confirm the child's vaccination history

- ✓ Review the child's vaccination history to determine whether they are up to date.
- ✗ If you cannot confirm previous vaccination, assume the child has not received that vaccine. Children can safely receive most vaccines as additional doses.
- ? If you are not sure how to plan the catch-up schedule, or if the catch-up is complicated, seek further advice from your state or territory health authority.

2 Plan a catch-up schedule

Consider laboratory testing for immunity to some diseases

✓ Consider laboratory testing to guide catch-up vaccination for:
- hepatitis A and B
- MMR
- varicella

✗
- Do not use laboratory testing for any other diseases.
- Do not use past infection to guide the catch-up schedule.

Consider valid doses

✓ Check that any previous doses were received at the correct age and dosing intervals.

✗ In almost all cases, do not repeat valid doses — count them as part of the schedule.

Refer to catch-up resources

✓ Use the catch-up resources in the Australian Immunisation Handbook to help plan a catch-up schedule.

3 Start the catch-up schedule

✓ Discuss the catch-up schedule with the parent or carer before starting.

See the Australian Immunisation Handbook for more details.

Australian Government Department of Health | Australian Immunisation Handbook

Avoiding shoulder injury related to vaccine administration

Shoulder injury related to vaccine administration (SIRVA) is a rare complication of incorrect vaccine administration, when the vaccine is given too high into the shoulder joint. This can cause shoulder pain and restricted range of movement. Diagnoses include bursitis, tendinitis and rotator cuff tears. Bursitis is the most commonly reported diagnosis on ultrasound. Symptoms often begin at the time of injection and can last from weeks to years.

Correct injection technique and positioning will avoid SIRVA.

1 Choose the correct size needle

Use an appropriate needle length to improve vaccine delivery and reduce pain.

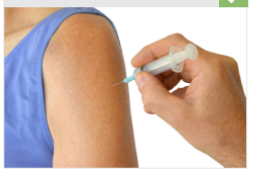
Age or size of person	Needle type
Child or adult – note that the deltoid muscle is not recommended for vaccination of infants less than 12 months of age	22–25 gauge, 25 mm long
Very large or obese person	22–25 gauge, 38 mm long

2 Expose the entire upper arm

Injection too high ✗

Injection too low ✗

Correct site for injection ✓



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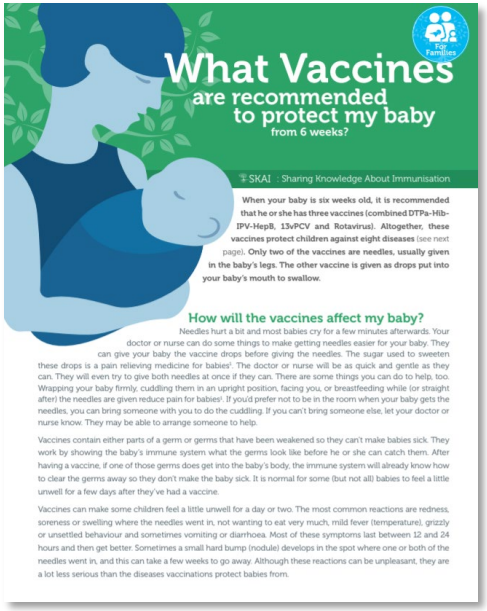
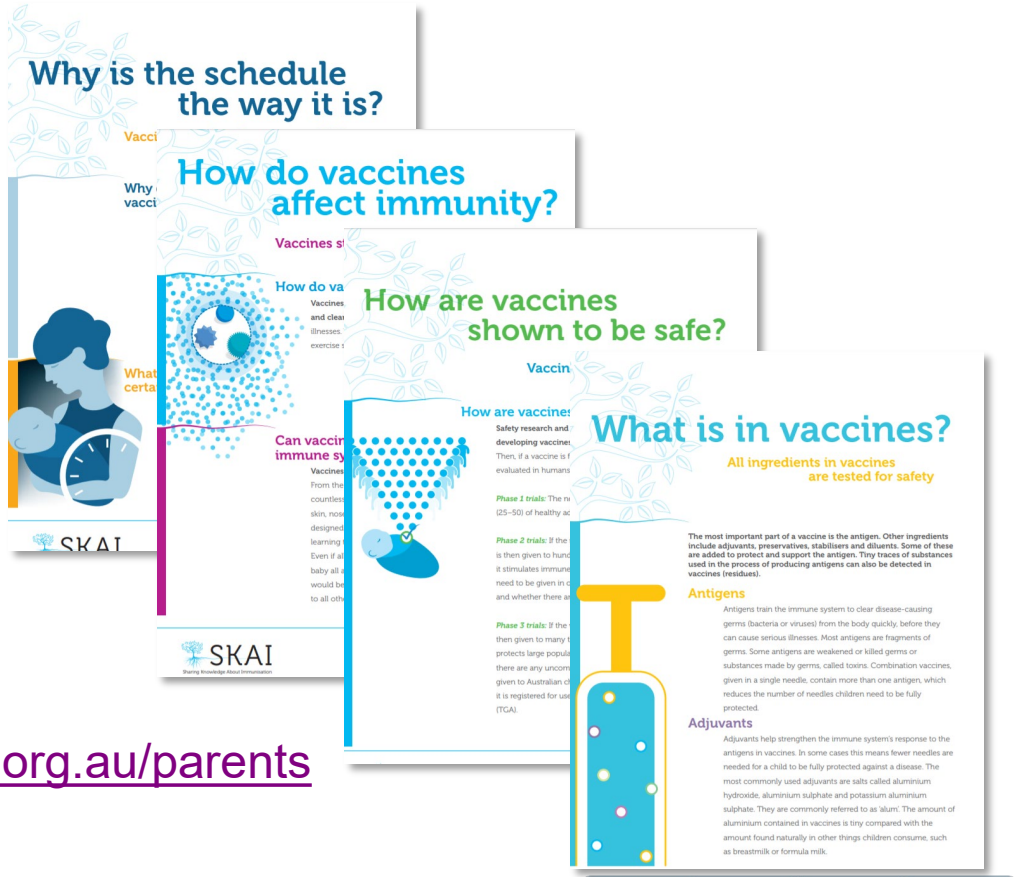
Links to existing Sharing Knowledge About Immunisation (SKAI) resources about childhood vaccination





http://www.talkingaboutimmunisation.org.au/parents

Time of the Nurse & AHW

2020
INTERNATIONAL YEAR
OF THE NURSE AND
THE MIDWIFE

Chorus

G B

So let's build immunity – (let's build immunity)

Pro tect all from disease – (protect all from disease)

Call the immuniser, I need a vaccine

D

I need a vaccine

G G7

I need a vaccine (vaccine)

G D G

To protect the whole world we need a vaccine

.

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Wash hands and prepare for a vaccine

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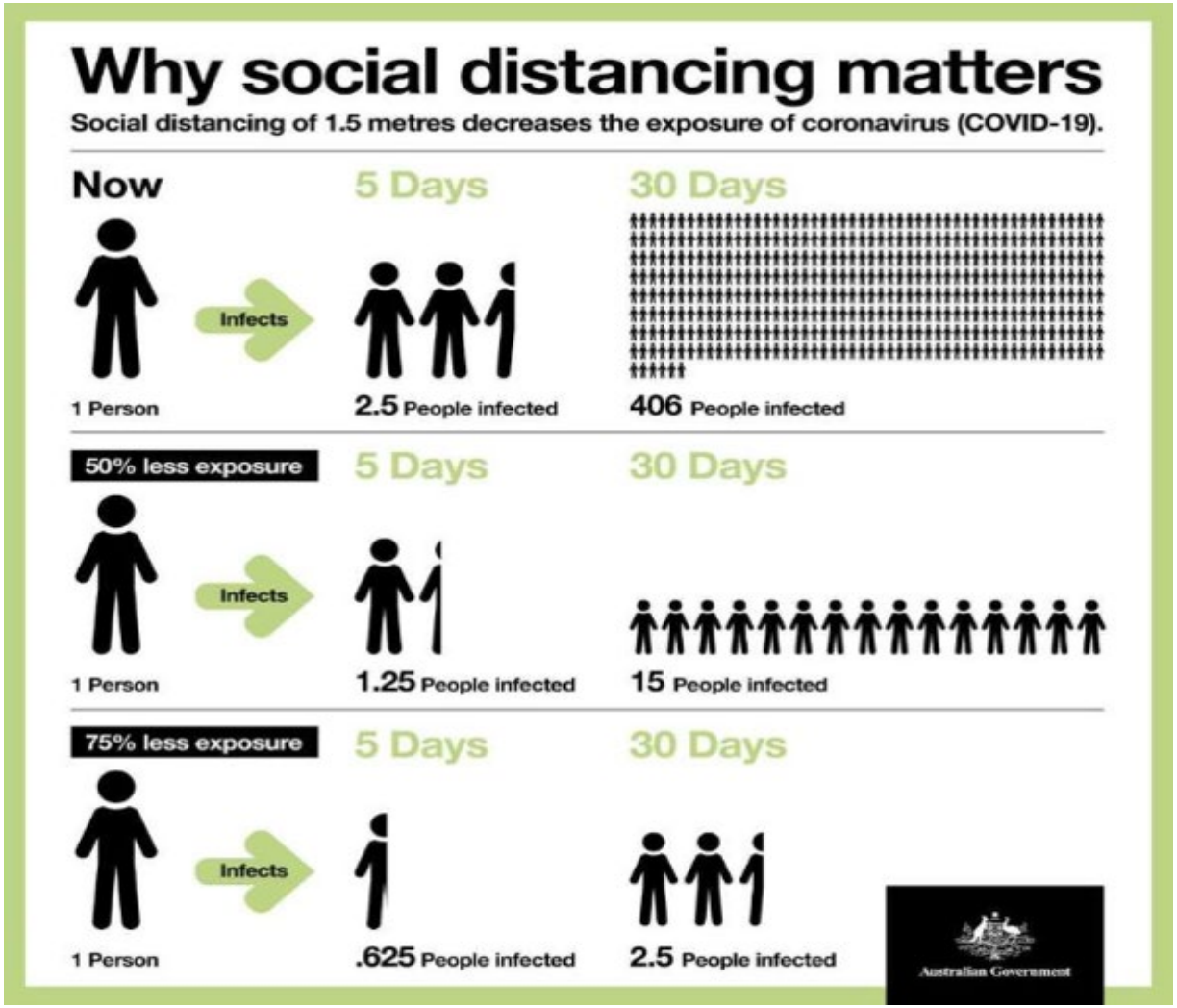
Disease control without a vaccine



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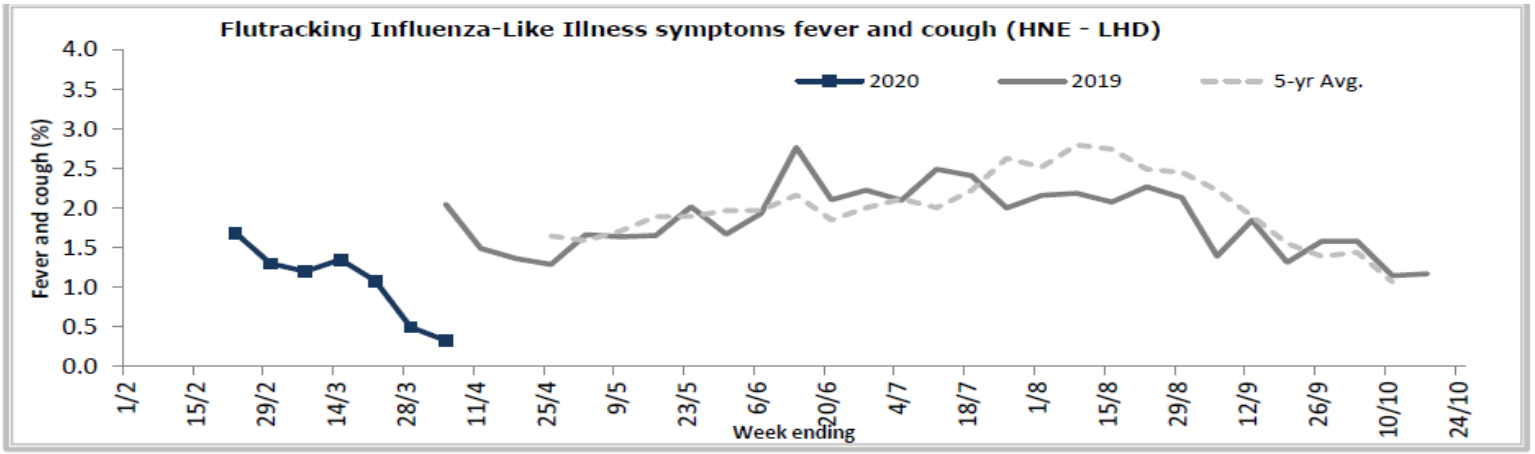
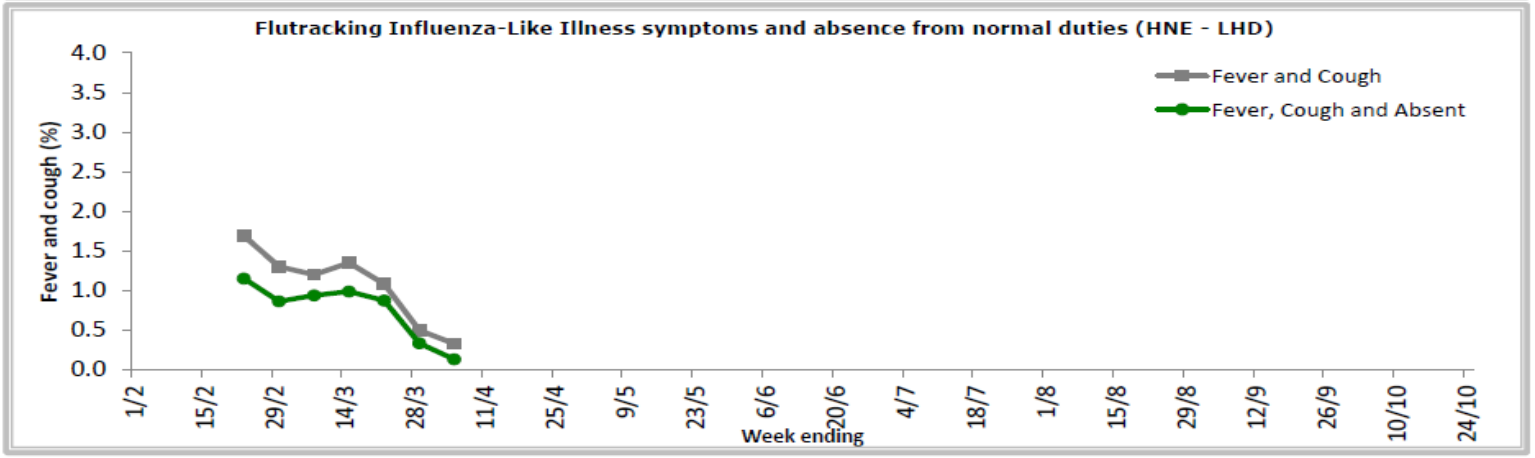
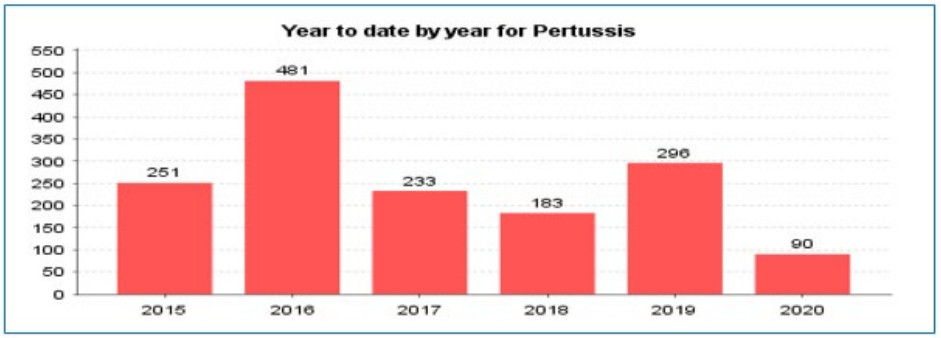
HNE Weekly Interim Report

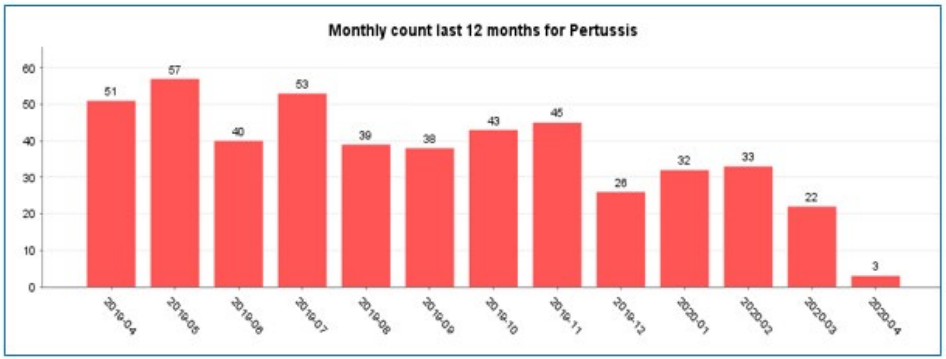
Week ending 05 April 2020

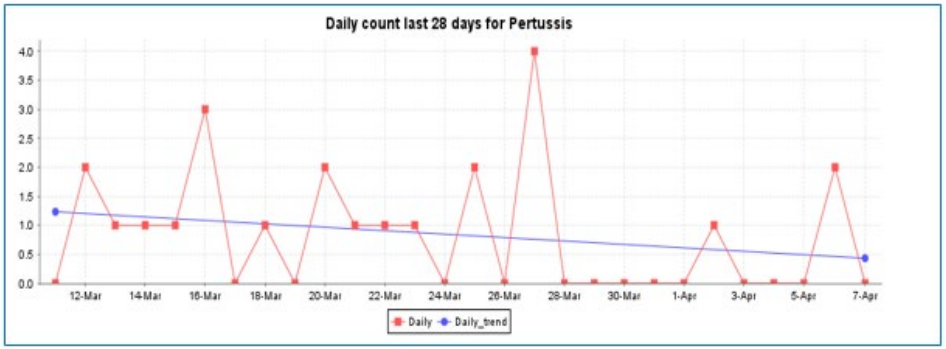




Pertussis







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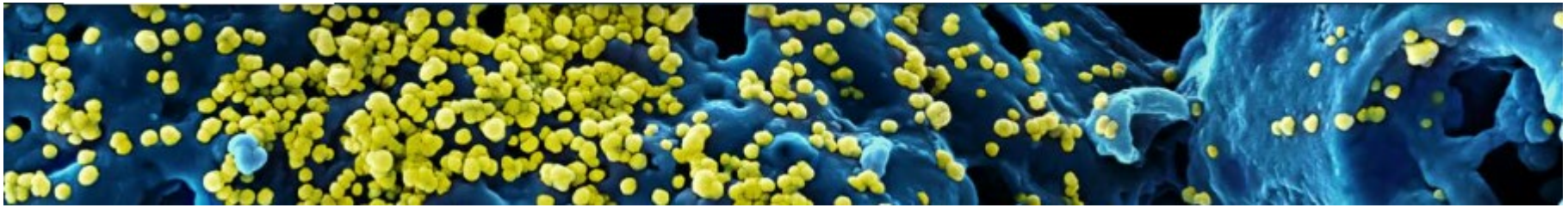
Coronaviruses



- Hundreds of corona viruses – animals
- Jump to humans – spillover
- 7 corona viruses cause human disease
- 4 mild disease 229E, OC43, NL63 and HKU1
- SARS (severe acute respiratory syndrome)
- MERS (Middle East respiratory syndrome
- SARS-CoV-2 causes Covid-19

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R14 many respiratory viruses have no vaccine

Respiratory Nucleic Acid Detection — Location No: JH20M44586
Specimen: Swab

Specimen Source	Swab
Rapid Influenza A RNA	Not Detected
Rapid Influenza B RNA	Not Detected
Rapid RSV RNA	Not Detected
Influenza A RNA PCR	Not Detected
Influenza B RNA PCR	Not Detected
RSV RNA PCR	Not Detected
Picornavirus RNA PCR	Not Detected
Enterovirus RNA PCR	Not Detected
Parechovirus RNA PCR	Not Detected
Parainfluenza 1 RNA PCR	Not Detected
Parainfluenza 2 RNA PCR	Not Detected
Parainfluenza 3 RNA PCR	Not Detected
Adenovirus DNA PCR	Not Detected
Metapneumovirus RNA PCR	Not Detected
B.pertussis DNA PCR	Not Detected
M.pneumoniae DNA PCR	Not Detected
Human Coronavirus RNA	DETECTED
SARS-CoV-2 RNA	Not Detected

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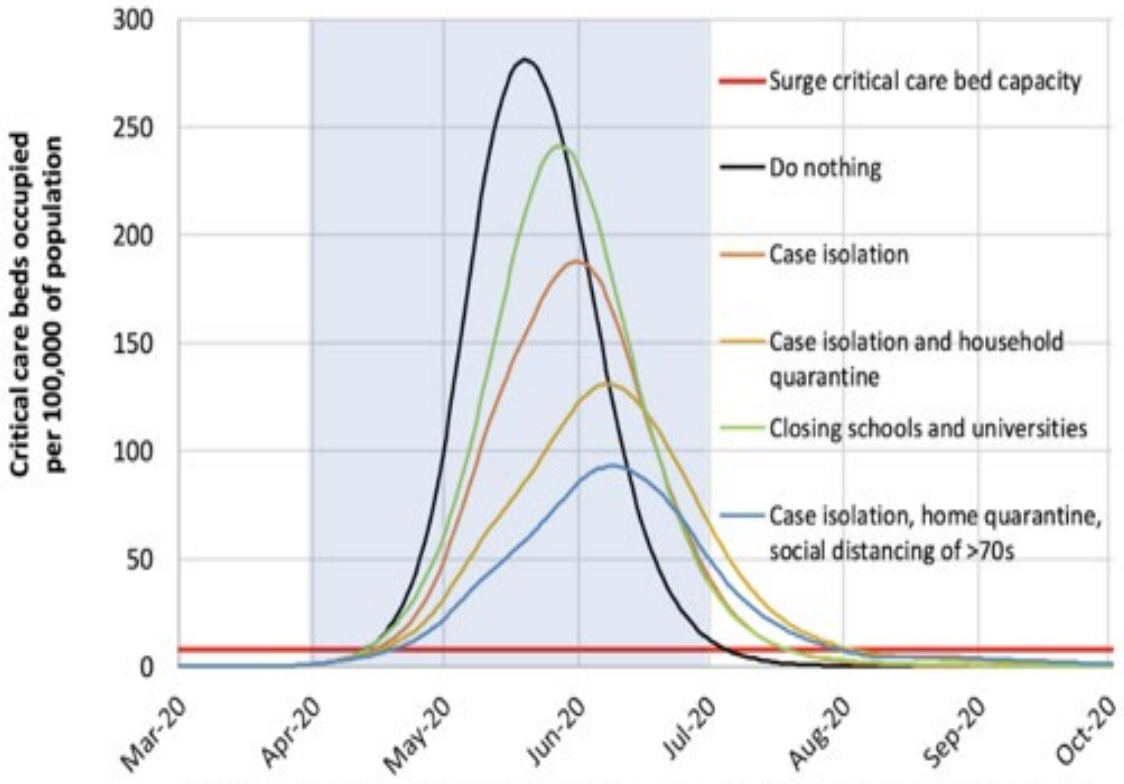
How much social intervention is enough?



Source: Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand, Neil Ferguson et. al, Imperial College

3 month mitigation (blue), UK setting

No action: ICU bed capa city exceeded x 30

Combination of CI, HQ, SD70 reduces deaths by 50%, ICU bed capacity exceeded x 8

16 March 2020 *Imperial College COVID-19 Response Team*

Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand

Neil M Ferguson, Daniel Laydon, Gemma Nedjati-Gilani, Natsuko Imai, Kylie Ainslie, Marc Baguelin,

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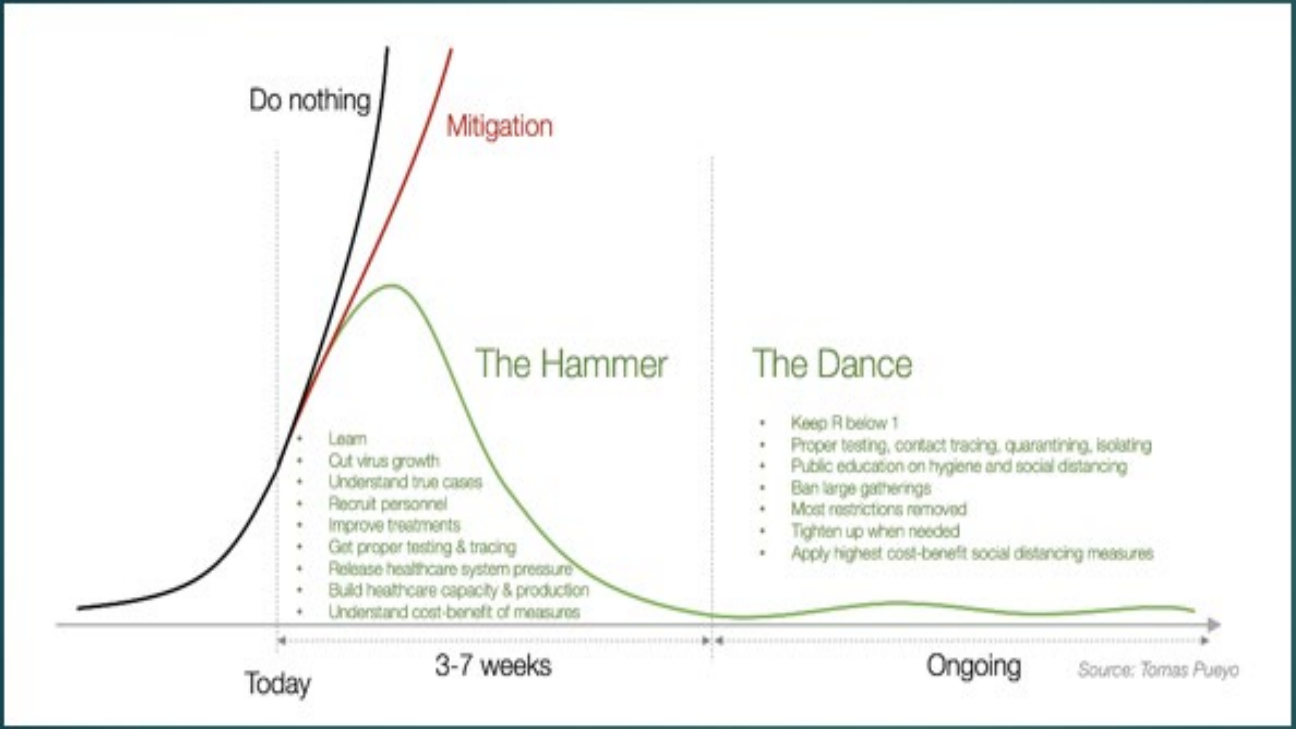
The Hammer and the Dance



Critical to intervene early:

Wuhan went into lockdown with 400 reported cases

Tomas Pueyo, Medium

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Public Health action plan

1. Identify cases
2. Isolate case to stop transmission
3. Trace contacts
4. Repeat
5. Social distancing

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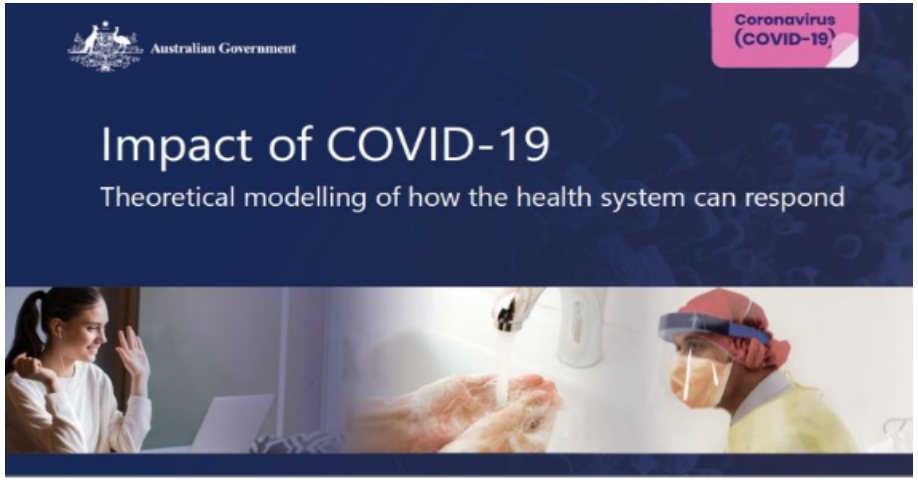
Yesterday Australian modelling



The Australian Government has released modelling on the impact of COVID-19 in Australia.

If we continue with our strategy of isolation, quarantine and social isolation, we expect that our health system will cope with the projected peak in cases.

The Australian Government is boosting our intensive care unit (ICU) bed capacity to around 7,000 beds.

The modelling compares the **peak daily ICU bed demand** under 3 different scenarios:

- uncontrolled spread – 35,000
- isolation and quarantine – 17,000
- isolation, quarantine and social isolation – below 5000

Australia will continue using the tools we have to control the disease:

- social distancing
- isolating people who have contracted the virus
- tracing and quarantining their contacts
- practising good hygiene

Prof Jodie McVernon

https://www.doherty.edu.au/uploads/content_doc/McVernon_Modelling_COVID-19_07Apr1_with_appendix.pdf

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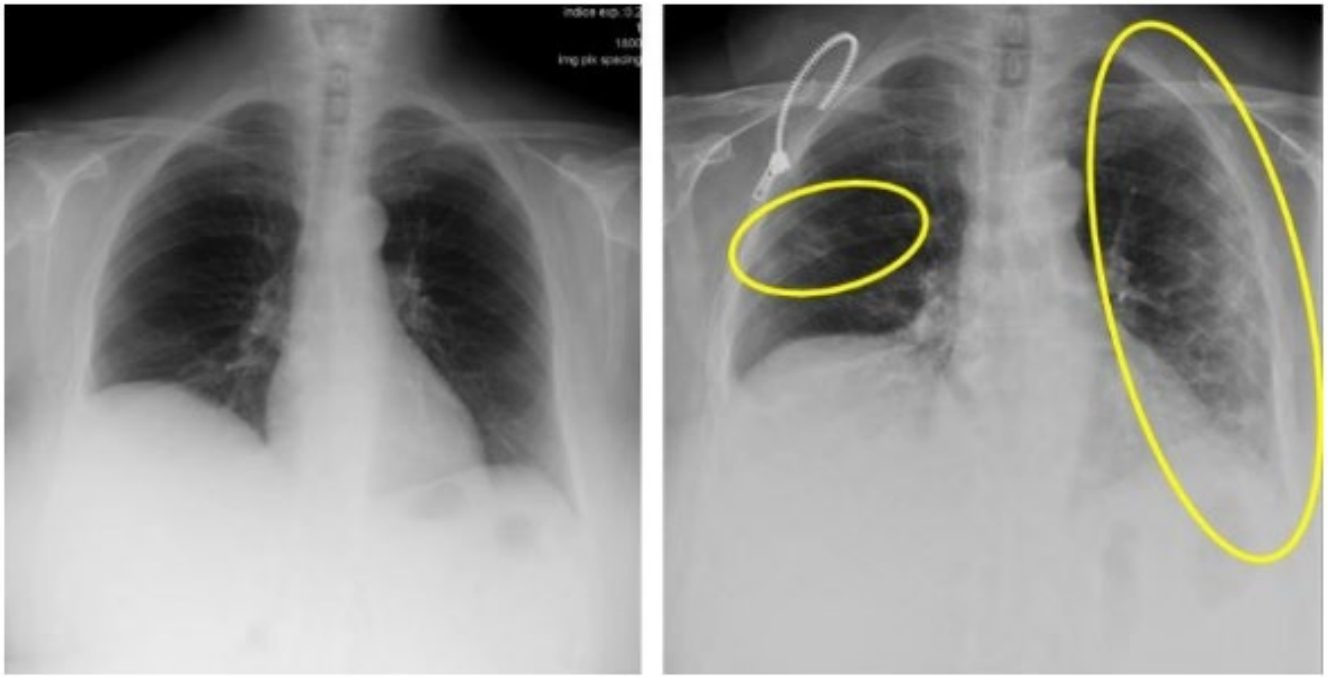
Ground Glass CXR



These two X-ray images are from a 72-year-old woman who has a cough and respiratory distress from last year (left) and now. The yellow circle and ovoid indicate the typical subpleural peripheral opacities

https://healthcare-in-europe.com/en/news/imaging-the-coronavirus-disease-covid-19.html

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ELSEVIER

American Journal of Obstetrics and Gynecology

Available online 24 February 2020

In Press, Journal Pre-proof

Expert Review

Coronavirus Disease 2019 (COVID-19) and Pregnancy: What obstetricians need to know

Sonja A. Rasmussen MD, MS [1,2], John C. Smulian MD, MPH [3], John A. Lednicky PhD [4], Tony S. Wen MD [3], Denise J. Jamieson MD, MPH [5]

Show more

https://doi.org/10.1016/j.ajog.2020.02.017

- https://www.sciencedirect.com/science/article/pii/S0002937820301976?via%3Dihub

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The NEW ENGLAND JOURNAL of MEDICINE

CORRESPONDENCE COVID-19 CASES

An Uncomplicated Delivery in a Patient with Covid-19 in the United States

At 39 weeks of gestation, a 34-year-old woman (gravida 7, para 5) presented to the labor and delivery unit with a 3-day history of fever, chills, dry cough, and myalgia. She reported decreased fetal movements during the past day. She worked as a waitress and reported that she had not traveled recently. Her husband had had similar symptoms for the past 24 hours.

April 1, 2020
DOI: 10.1056/NEJMc2007605
Metrics

https://www.nejm.org/doi/full/10.1056/NEJMc2007605?query=featured_coronavirus

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PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Epidemiological Characteristics of 2143 Pediatric Patients With 2019 Coronavirus Disease in China

Yuanyuan Dong, Xi Mo, Yabin Hu, Xin Qi, Fang Jiang, Zhongyi Jiang and Shilu Tong

Pediatrics originally published online March 16, 2020;

Table 2 Different Severity of Illness by Age Group

Age group*	Asymptomatic	Mild	Moderate	Severe	Critical	Total
<1	7(7.4)	205(18.8)	127(15.3)	33(29.5)	7(53.8)	379(17.7)
1-5	15(16.0)	245(22.5)	197(23.7)	34(30.4)	2(15.4)	493(23.0)
6-10	30(31.9)	278(25.5)	191(23.0)	22(19.6)	0(0)	521(24.3)
11-15	27(28.7)	199(18.2)	170(20.5)	14(12.5)	3(23.1)	413(19.3)
>15	15(16.0)	164(15.0)	146(17.5)	9(8.0)	1(7.7)	335(15.7)
Total	94	1091	831	112	13	2141(100)

Data were presented with number and percent (%);*Two cases had missing values.

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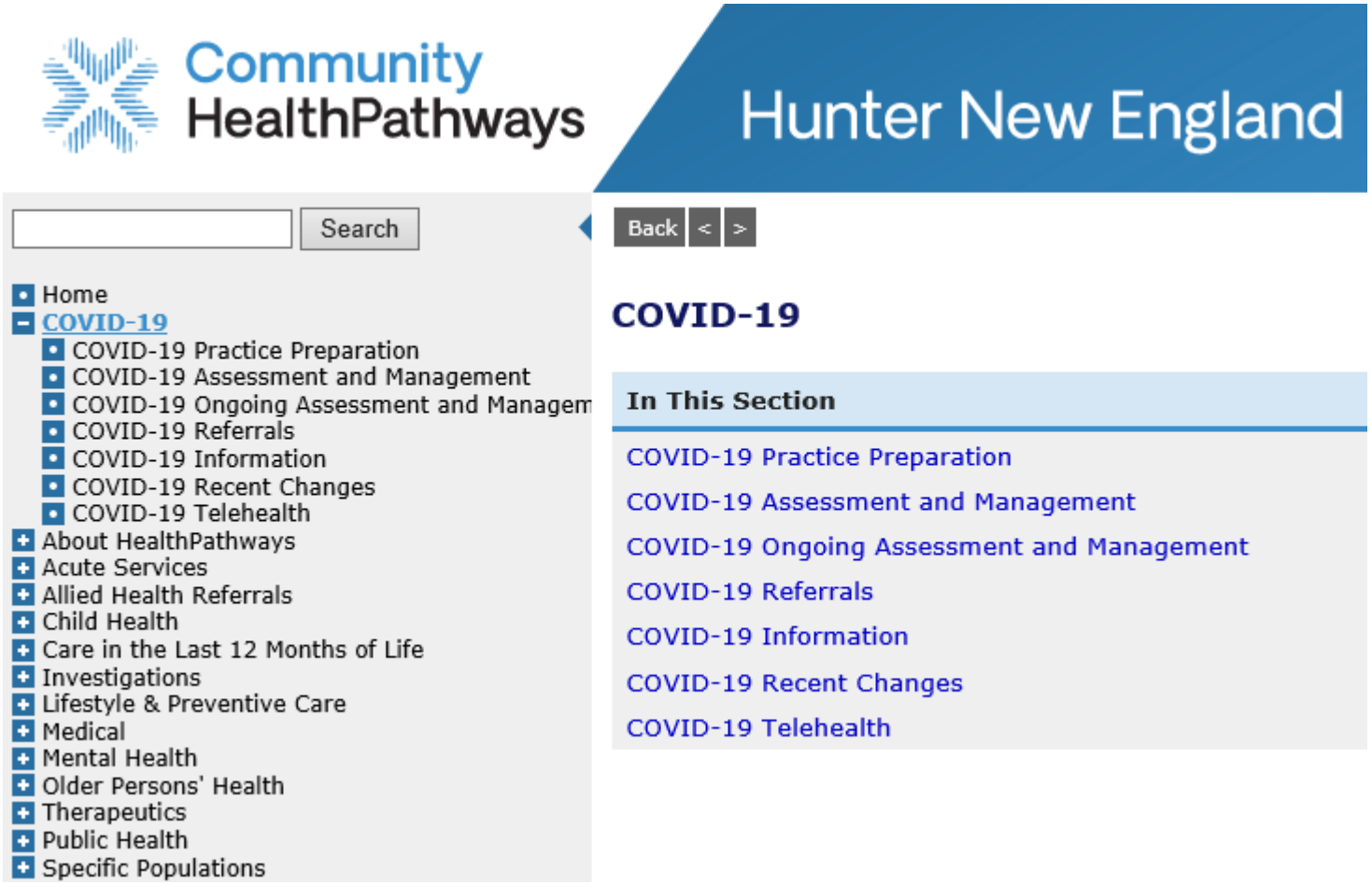
COVID-19 Pathways

https://hneclassic.communityhealthpathways.org/index.htm?725753.htm



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Influenza versus COVID-19 (SARS-CoV2)

	COVID-19 (SARS-CoV2)	Seasonal Influenza (Influenza virus)
Incubation period	2-14 days Median onset 5 days	1-4 days Median 2 days
R_0 (number of secondary cases resulting from single case in non-immune population)	~2-3	~1.3
Mortality rate	? 1-2% overall 15% in 80+ years	0.01-0.1 %
Highest Risk groups	Older adults Chronic medical conditions Children – low attack rates, less severe	All ages Attack rates highest in children Mortality highest in elderly and those with chronic medical conditions
Prevention and management	No population immunity No vaccine/specific treatment	Partial immunity Vaccination Anti-virals

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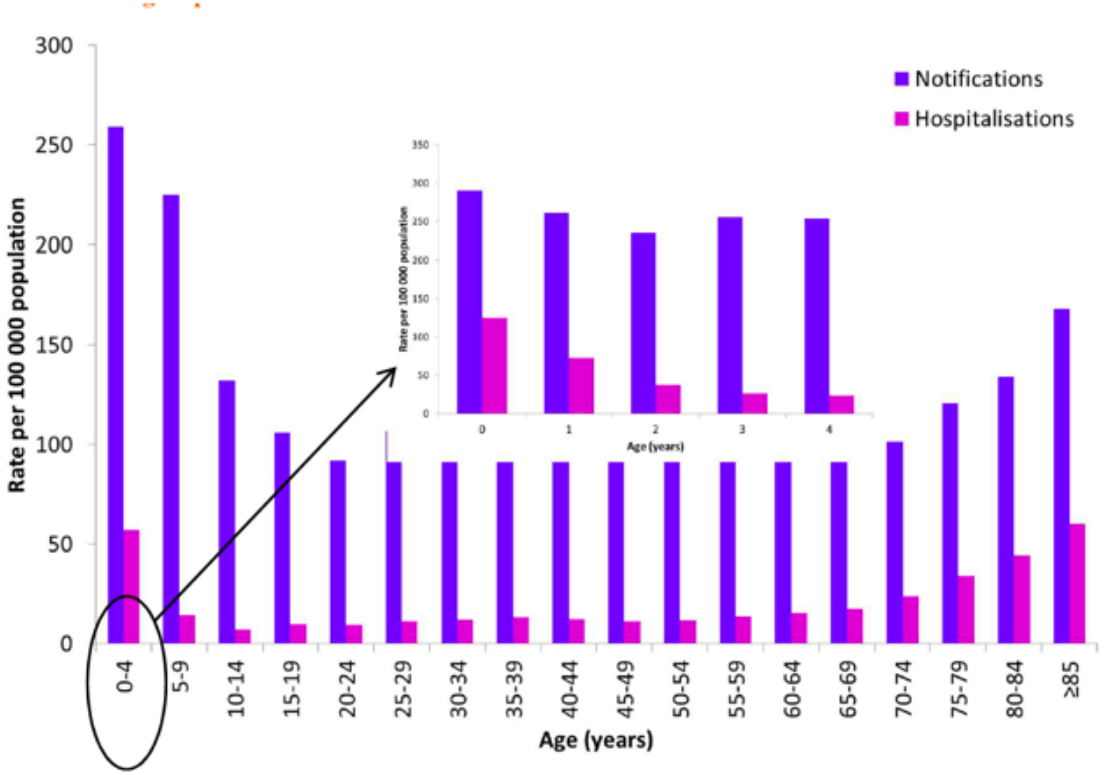
Kids get sick from influenza

Average annual influenza notification and hospitalization rates in Australia (2010-2013)



The Australian Immunisation Handbook, 10th ed

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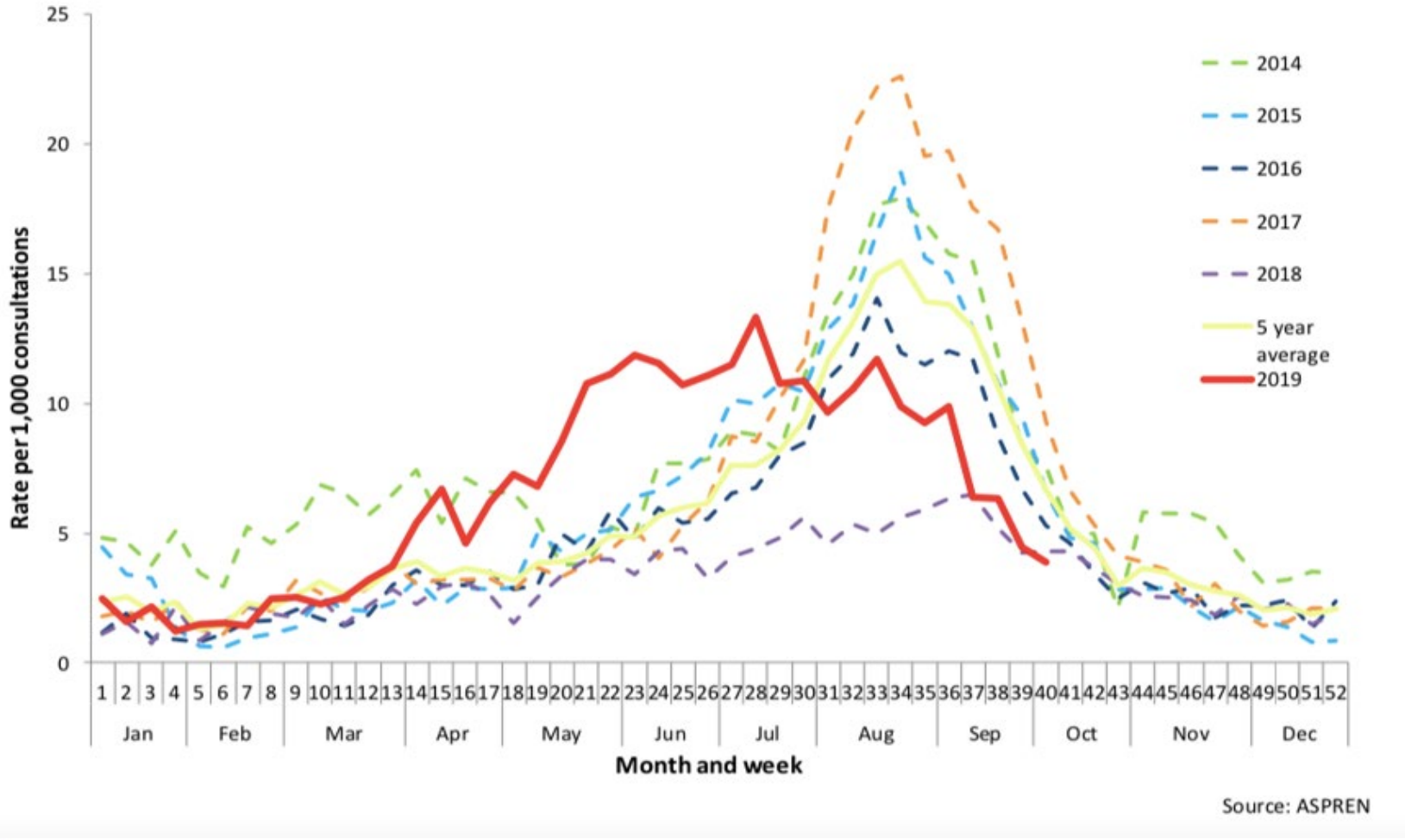
Influenza-like illness (ILI) 2014-2019



Source: ASPREN

NSW GOVERNMENT

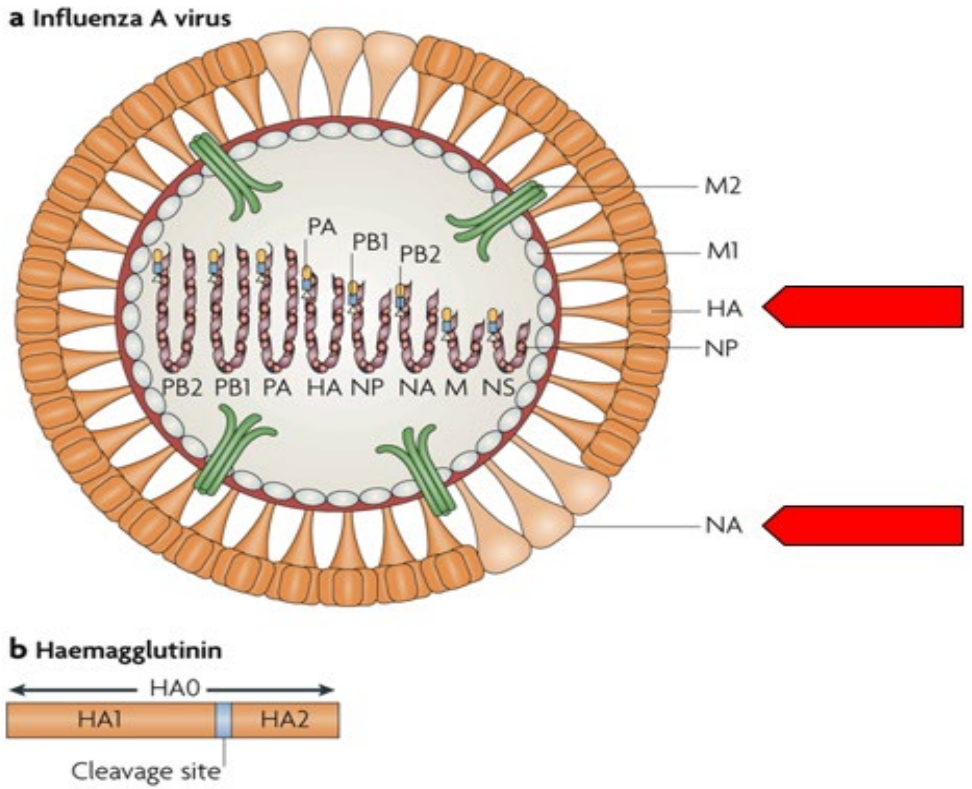
2019 season in Australia

- On average, each year influenza causes ~
  - 3,500 deaths
  - 18,000 hospitalisations
  - 300,000 GP consultations

- Characteristics of season
  - Australia had mainly A(H3N2), followed by A(H1N1)pdm, some B's
  - FluCan data
    - High number of hospital admissions 3915 (April 1-Oct 6) (725 2018, 3969 2017)
    - 6.3% admitted directly to ICU (8.1% 2018, 8.9% 2017; 7% 2015, 11% 2014)
    - Most hospitalizations due to A(H3N2), then B, small number of A(H1N1)pdm
  - Influenza deaths (NNDSS); 902 med. 86y (<1-106y)

NSW GOVERNMENT

The haemagglutinin and neuraminidase are the main targets of the protective antibody response

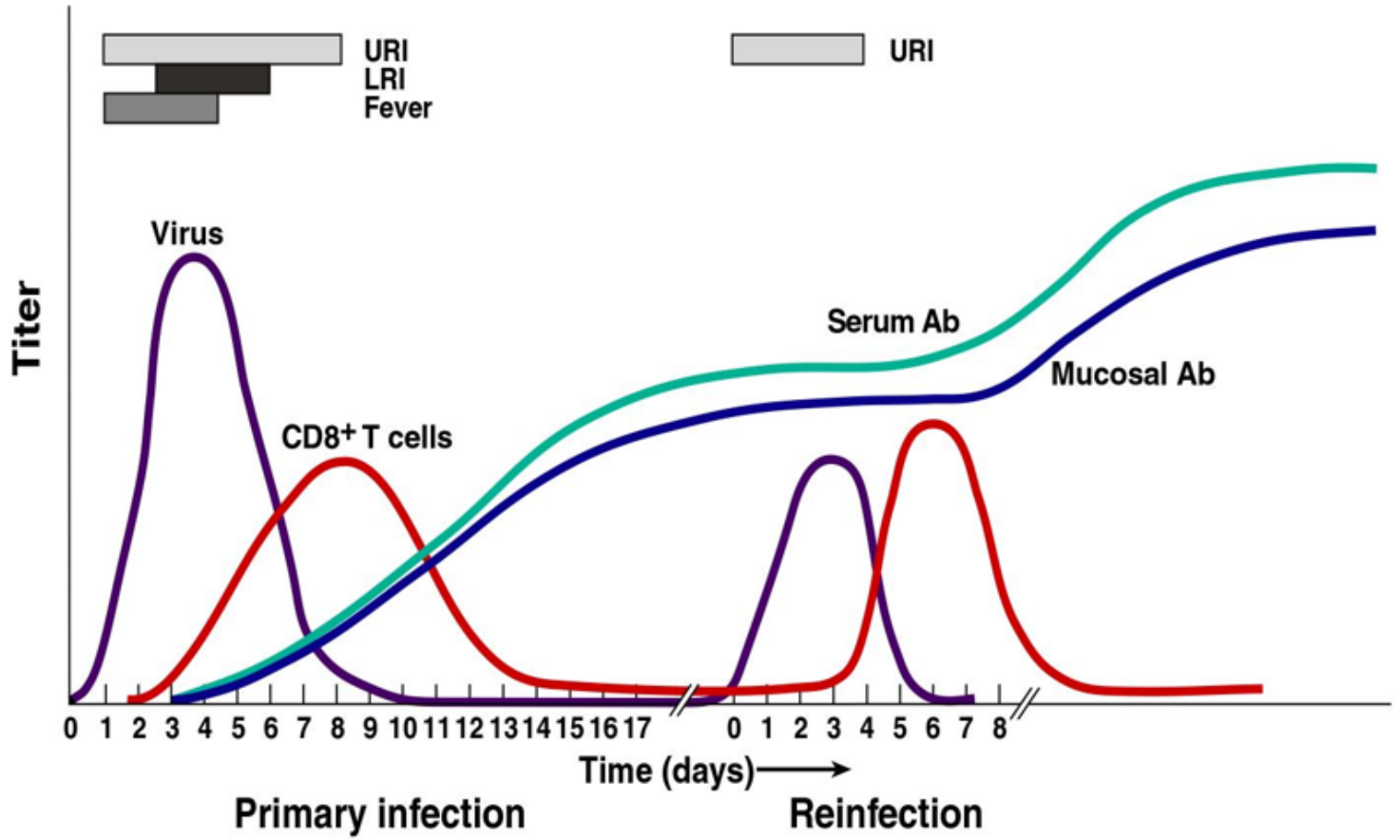


Nature Reviews | Immunology

nature REVIEWS IMMUNOLOGY

NSW GOVERNMENT

Course of Immune response during influenza infection

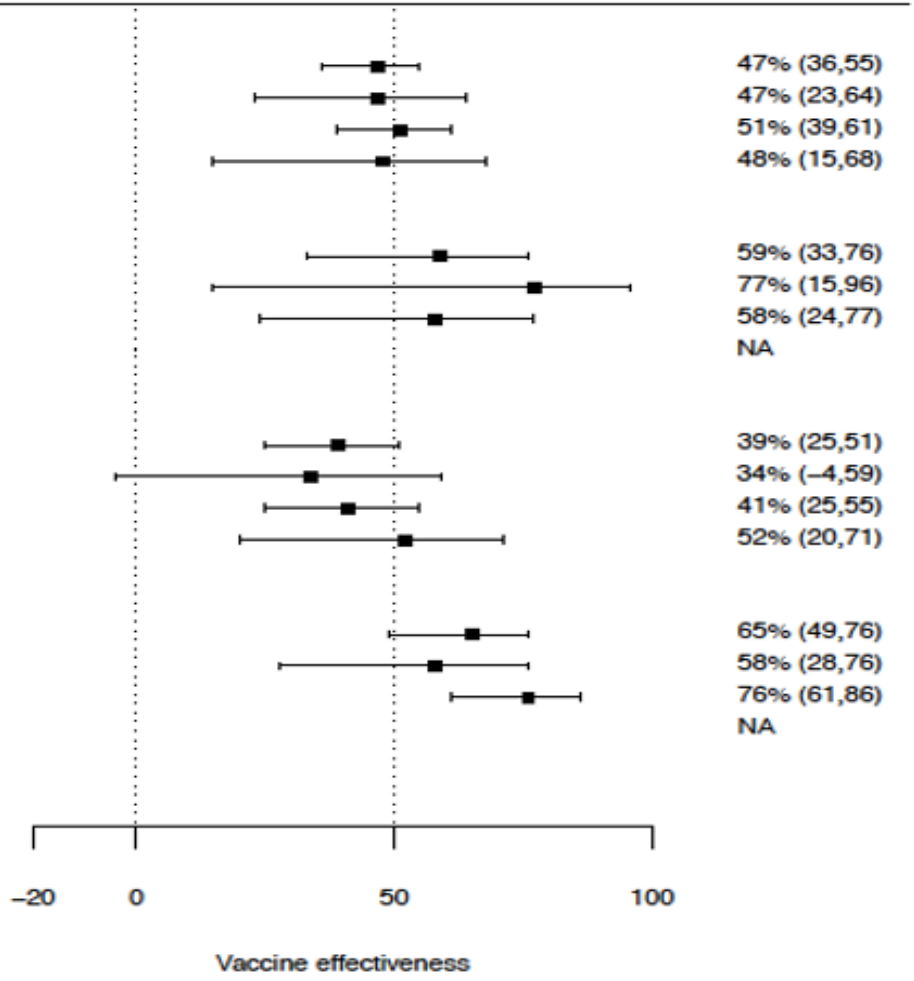


Source: Subbarao et al. *Immunity* 24, 5-9 (2006)

NSW GOVERNMENT

VE for Influenza vaccines used in Australia in 2019

Influenza virus and age group	Flu+ V	Flu+ UV	Flu− V	Flu− UV	VE (95% CI)
A or B					
All ages	341	698	1024	1021	47% (36,55)
Children <18y	59	278	93	239	47% (23,64)
Adults 18–64y	174	374	622	691	51% (39,61)
Elderly 65y+	104	40	295	75	48% (15,68)
A/H1					
All ages	27	64	1024	1021	59% (33,76)
Children <18y	2	19	93	239	77% (15,96)
Adults 18–64y	16	43	622	691	58% (24,77)
Elderly 65y+	9	1	295	75	NA
A/H3					
All ages	247	408	1024	1021	39% (25,51)
Children <18y	34	138	93	239	34% (−4,59)
Adults 18–64y	124	232	622	691	41% (25,55)
Elderly 65y+	86	36	295	75	52% (20,71)
B					
All ages	40	185	1024	1021	65% (49,76)
Children <18y	19	104	93	239	58% (28,76)
Adults 18–64y	19	76	622	691	76% (61,86)
Elderly 65y+	2	3	295	75	NA



Based on ASPREN & VicSPN GP data, estimates by WHO CC

NSW GOVERNMENT

Adjuvant improve immune response

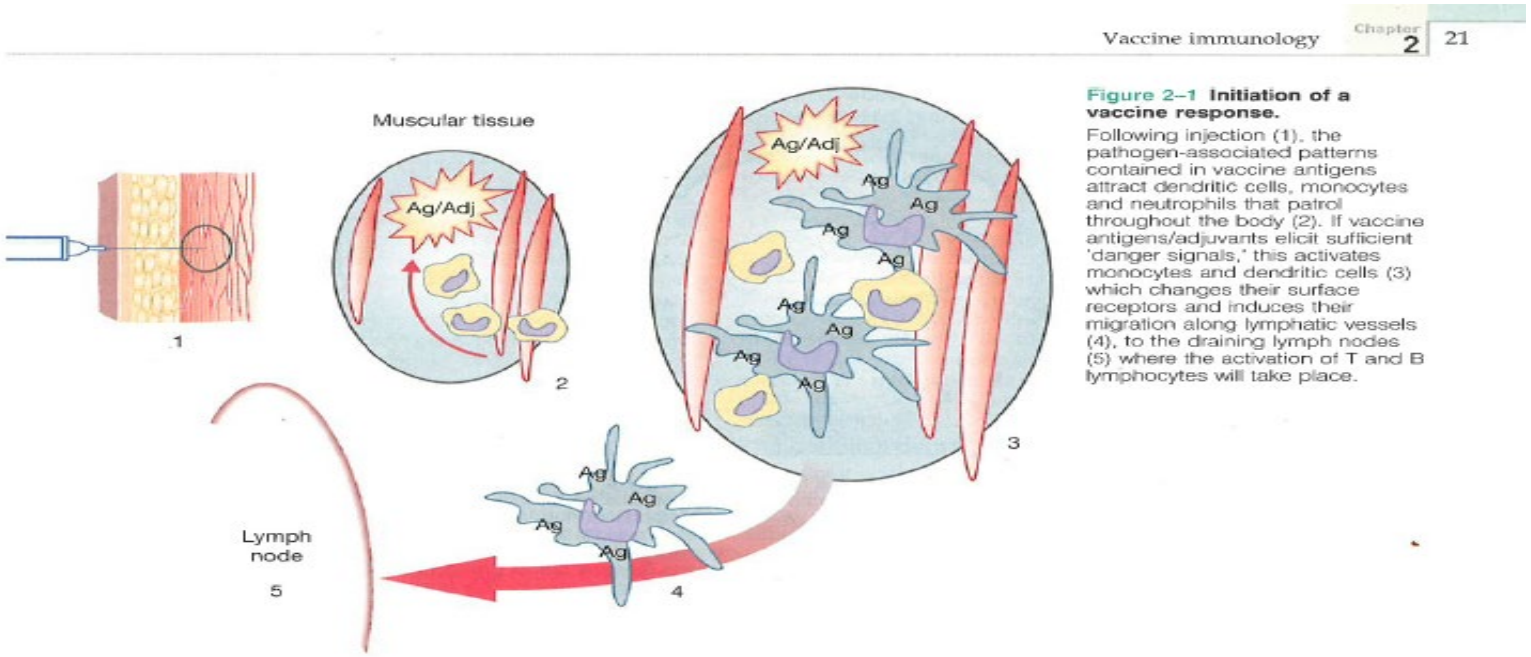


Figure 2–1 Initiation of a vaccine response.
Following injection (1), the pathogen-associated patterns contained in vaccine antigens attract dendritic cells, monocytes and neutrophils that patrol throughout the body (2). If vaccine antigens/adjuvants elicit sufficient 'danger signals,' this activates monocytes and dendritic cells (3) which changes their surface receptors and induces their migration along lymphatic vessels (4), to the draining lymph nodes (5) where the activation of T and B lymphocytes will take place.

2020 Fluad Quad contains MF59C.1, an adjuvant. MF59C.1 adjuvant is a squalene based oil-in-water emulsion.
Squalene is a normal component in the human body and is easily metabolized and excreted.

Flu AD
Flu -Adjuvant

NSW GOVERNMENT

2020 Influenza vaccines

Table 1. Seasonal influenza vaccines registered and available for use in Australia in 2020, by age

Vaccine / Registered age group	FluQuadri 0.50 mL (Sanofi)	Vaxigrip Tetra 0.50 mL (Sanofi)	Fluarix Tetra 0.50 mL (GSK)	Afluria Quad 0.50 mL (Seqirus)	Influvac Tetra 0.50 mL (Mylan)	Fluad Quad 0.50 mL (Seqirus)
6 to 35 months (<3 years)	✓	✓	✓*	x	x	x
≥3 to <5 years	✓	✓	✓*	x	✓	x
≥5 to <65 years	✓*	✓*	✓*	✓*	✓	x
≥65 years	✓	✓	✓	✓	✓	✓†

Ticks indicate age at which a vaccine is registered and available. Shaded boxes represent funding under the NIP.

* Funding only for Aboriginal and Torres Strait Islander people, pregnant women and people who have certain medical conditions.

† Adjuvanted QIV preferred over standard QIVs.

- *Vaxigrip Tetra * can be used for people from 6 months of age but should be prioritised for the universal 6 month to 5 year program.*
- *FluQuadri and Fluarix Tetra can be given from 6 months of age and should be prioritised for NIP eligible medically at risk patients.*

NSW GOVERNMENT

Furious

2020 Influenza vaccines funded in NSW

Influenza vaccines funded in NSW in 2020 (this differs from the ATAGI table as these are the vaccines provided free in NSW).

	Vaxigrip Tetra (0.5mL)	FluQuadri (0.5mL)	Fluarix Tetra (0.5mL)	Afluria Quad (0.5mL)	Fluad Quad# (0.5mL)
6 months to <5 years	✓	✓	✓*	✗	✗
5 years to 64 years	✓*	✓*	✓*	✓*	✗
65 years and older	✓	✓	✓	✓	✓#

Please note the appropriate age indications for each vaccine.

- *Ticks indicate the age at which a vaccine is registered and available. Shading represents funding under the NIP*
- ** = Funded only for Aboriginal people, pregnant women and people with certain medical conditions*
- *# = Note the higher immunogenicity vaccine for adults aged 65 years and older is now a QIV and is preferred over the standard QIVs.*

NSW GOVERNMENT

2020 influenza vaccine presentations and eligibility

NSW GOVERNMENT

6 MONTHS TO LESS THAN 5 YEARS OF AGE

Vaxigrip Tetra®

Registered for use in people aged 6 months and over:

- Prioritise for universal 6 months to <5 years influenza vaccination program
- Give two doses one month apart if first year of receiving flu vaccine
- Available in 10 packs
- Children should receive a full dose (i.e. not a half dose)
- Does NOT contain latex

Pack dimensions
Ten packs: 9.7 cm (L) x 1.2 cm (W) x 4.5 cm (H)

5 TO 64 YEARS

Afluria Quad®

Registered for use in people aged 5 years and over and should be prioritised for use in:

- People 5 to 64 years of age with medical risk factors predisposing to severe influenza
- All Aboriginal persons 5 to 64 years of age
- Pregnant women
- Available in 10 packs
- Give two doses one month apart for children aged 5 to less than 9 years if first year of receiving flu vaccine.
- Do not use for children less than 5 years of age
- Does NOT contain latex

Pack dimensions
Ten packs: 15.3 cm (L) x 12.5 cm (W) x 4 cm (H)

6 MONTHS TO 64 YEARS

Fluarix Tetra® and FluQuadri®

Registered for use in people aged 6 months and over and should be prioritised for:

- People with medical risk factors predisposing to severe influenza
- All Aboriginal persons 6 months to 64 years of age
- Pregnant women
- Give two doses one month apart for children aged 6 months to less than 9 years if first year of receiving flu vaccine
- Fluarix Tetra available in single and 10 packs and FluQuadri in 5 packs
- Children should receive a full dose (i.e. not a half dose)
- Do NOT contain latex in the presentations available in Australia

Pack dimensions
Fluarix Tetra Singles: 1.3 cm (L) x 4.2 cm (W) x 24 cm (H)
Fluarix Tetra Ten packs: 1.8 cm (L) x 1.0 cm (W) x 4.1 cm (H)

FluQuadri Five packs: 8.9 cm (L) x 10.4 cm (W) x 2.3 cm (H)

Please refer to the NSW Health 2020 Influenza Toolkit for useful information to support the implementation of your 2020 influenza vaccination program. Access the toolkit at health.nsw.gov.au/flu-provider-toolkit.pdf

65 YEARS AND OVER (only)

Fluad Quad ®

- New adjuvanted quadrivalent vaccine
- All persons aged 65 years and over
- Milky-white suspension
- Available in 10 packs
- Does NOT contain latex in the presentation available in Australia
- Do not use in pregnant women or children

Pack dimensions
Ten packs: 13 cm (L) x 15.4 cm (W) x 2.3 cm (H)

For more information visit health.nsw.gov.au/flu

NSW GOVERNMENT

NIP Eligibility

All people ≥6 months of age are strongly recommended to receive annual influenza vaccine.

NIP funded groups:

- All people aged 6 months to less than 5 years (newly NIP eligible in 2020)
- All Aboriginal and Torres Strait Islander people aged 6 months and over
- Pregnant women (during any stage of pregnancy)
- All people aged 65 years and over
- People aged 6 months and over with medical conditions which increase the risk of influenza disease complications

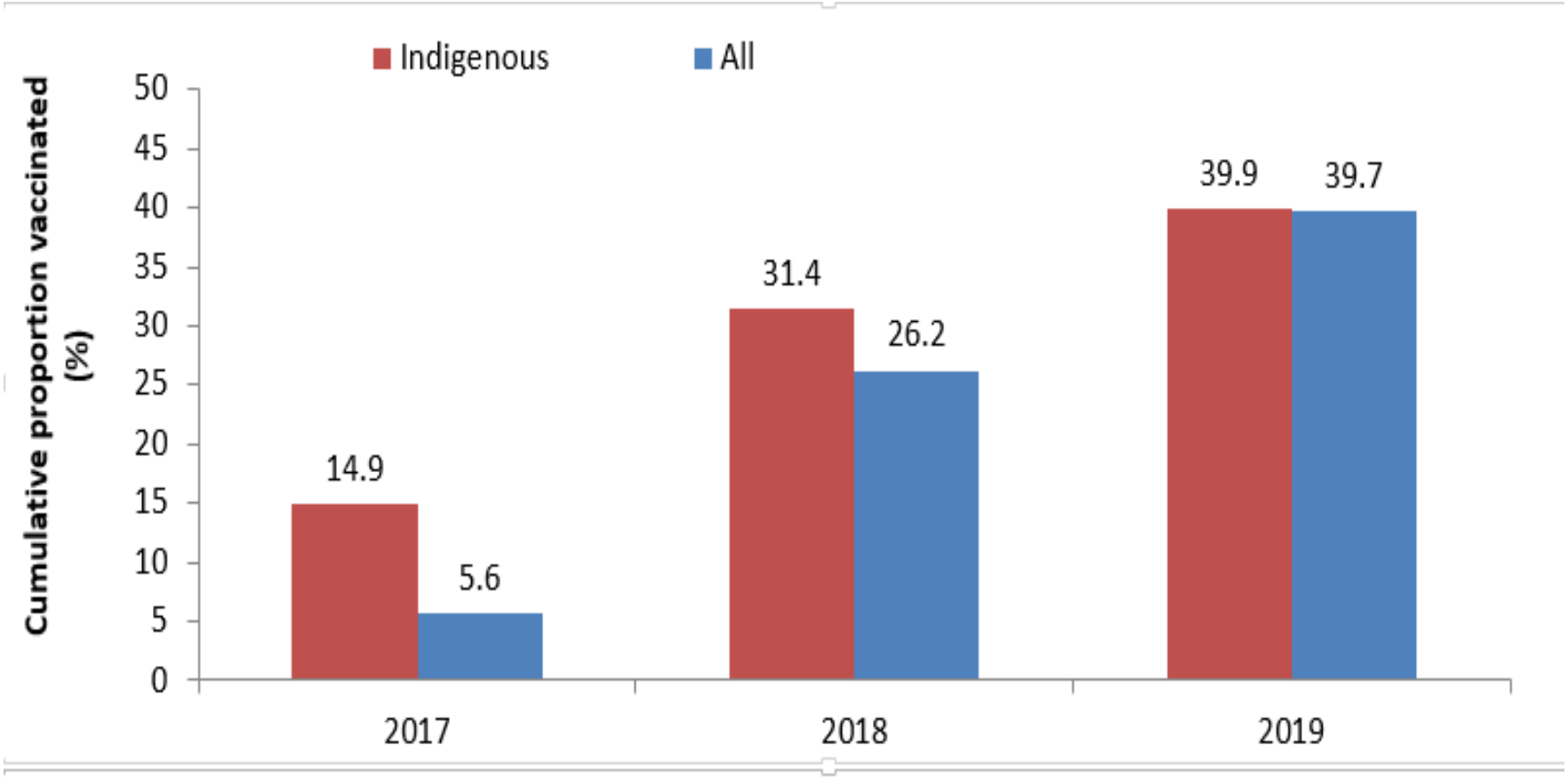
NSW GOVERNMENT

Influenza vaccination in pregnancy

- Influenza vaccine is recommended in every pregnancy and at any stage of pregnancy
- Influenza vaccine can safely be given at the same time as pertussis vaccine
- For women who received an influenza vaccine in 2019, revaccinate if the 2020 influenza vaccine becomes available before the end of pregnancy
- For women who receive an influenza vaccine before becoming pregnant, revaccinate during pregnancy to protect the unborn infant

NSW GOVERNMENT

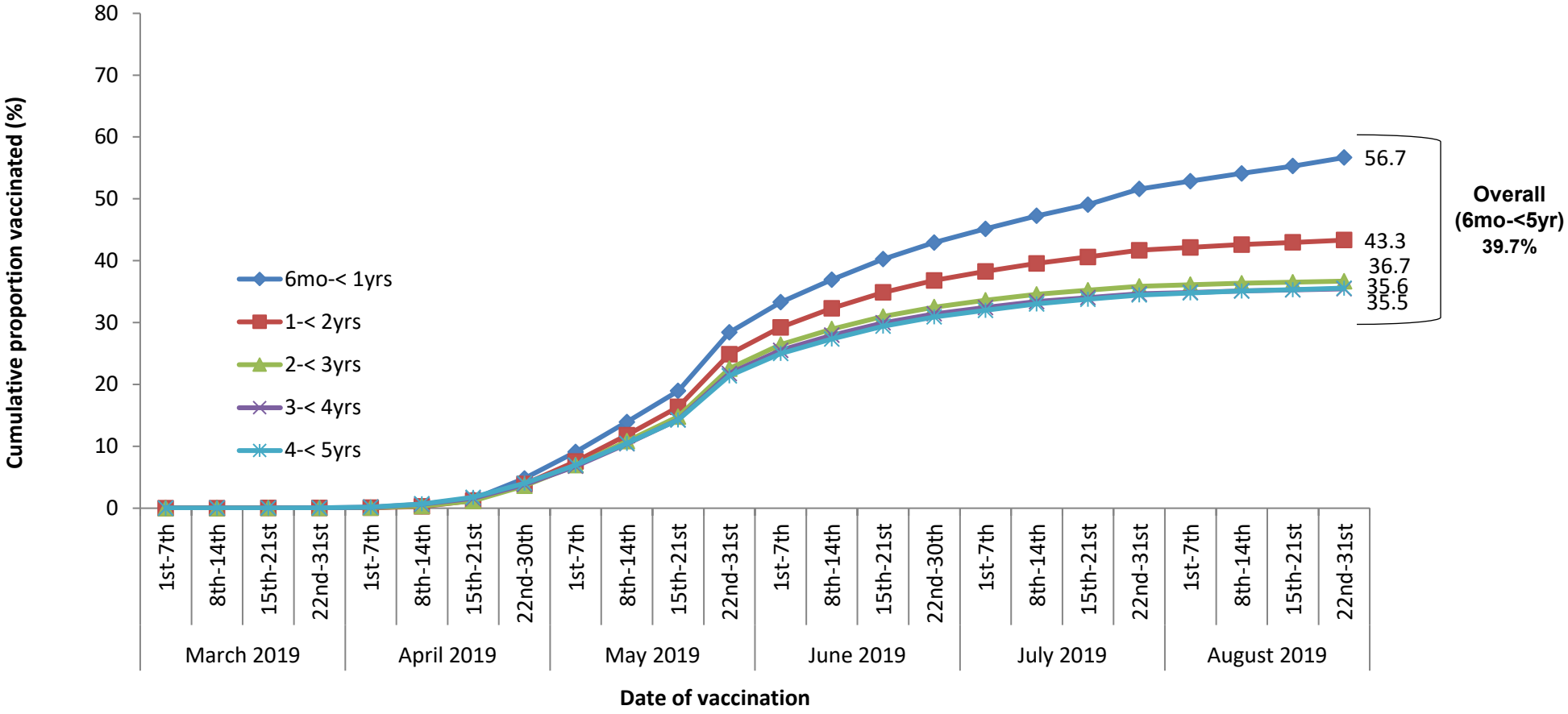
Influenza vaccine uptake in children aged 6 months - <5 years Indigenous versus all children, 2017 - 2019



Unpublished data from AIR, courtesy of Alex Hendry, NCIRS (submitted for publication)

NSW GOVERNMENT

Influenza vaccine uptake in all Australian children aged 6 months - < 5 years by age group, 2019



Source: Australian Immunisation Register; unpublished data analysed by Alex Hendry NCIRS

When is a second dose of influenza recommended?

- **A single annual dose of influenza vaccine is recommended**

- 2 doses at least 4 weeks apart are only recommended for:
  - children aged 6 months to <9 years receiving influenza vaccine for the first time
  - people of any age receiving influenza vaccine for the first time after haematopoietic stem cell or solid organ transplant

- However, receipt of 2 separate doses in the same season is not contraindicated
  - may benefit some individuals due to personal circumstances, such as travel or if pregnancy spans vaccination seasons

NSW GOVERNMENT

Vaccine
Volume 37, Issue 18, 24 April 2019, Pages 2427-2429

Short communication

Participant centred safety surveillance of health care workers receiving influenza vaccination

P. Cashman [a], S. Moberley [a], K. Chee [b], J. Stephenson [a], S. Chaverot [b], J. Martinelli [a], T. Gadsden [c], C. Bateman-Steel [b, d], L. Redwood [b], Z. Howard [e], M.J. Ferson [b, f], D.N. Durrheim [e]

Show more

https://doi.org/10.1016/j.vaccine.2019.02.082

Abstract

Following the introduction of mandatory influenza vaccination for staff working in high risk clinical areas in 2018, we conducted active surveillance for adverse events following immunisation utilising an automated online survey to vaccine recipients at three and 42 days post immunisation. Most participants 2285 (92%) agreed to participate; 515 (32%) staff reported any symptom and eight (1.6%) sought medical attention. The odds of having a reaction decreased with age by approximately 2% per year. The system was acceptable to staff, and the data demonstrated rates of reported symptoms within expected rates for influenza vaccines from clinical trials. Rates of medical attendance were similar to previous surveillance. Participant centred real-time safety surveillance proved useful in this staff influenza vaccination context, providing reassurance with expected rates and profile of common adverse events following staff influenza vaccination.

AusVaxSafety: the how

Vaccination

A few days after vaccination

SMS asking about AEFI

AEFI

No AEFI

Survey of details

Attended GP or ED

(Medical attendance)

Flag to clinic for follow up & reporting

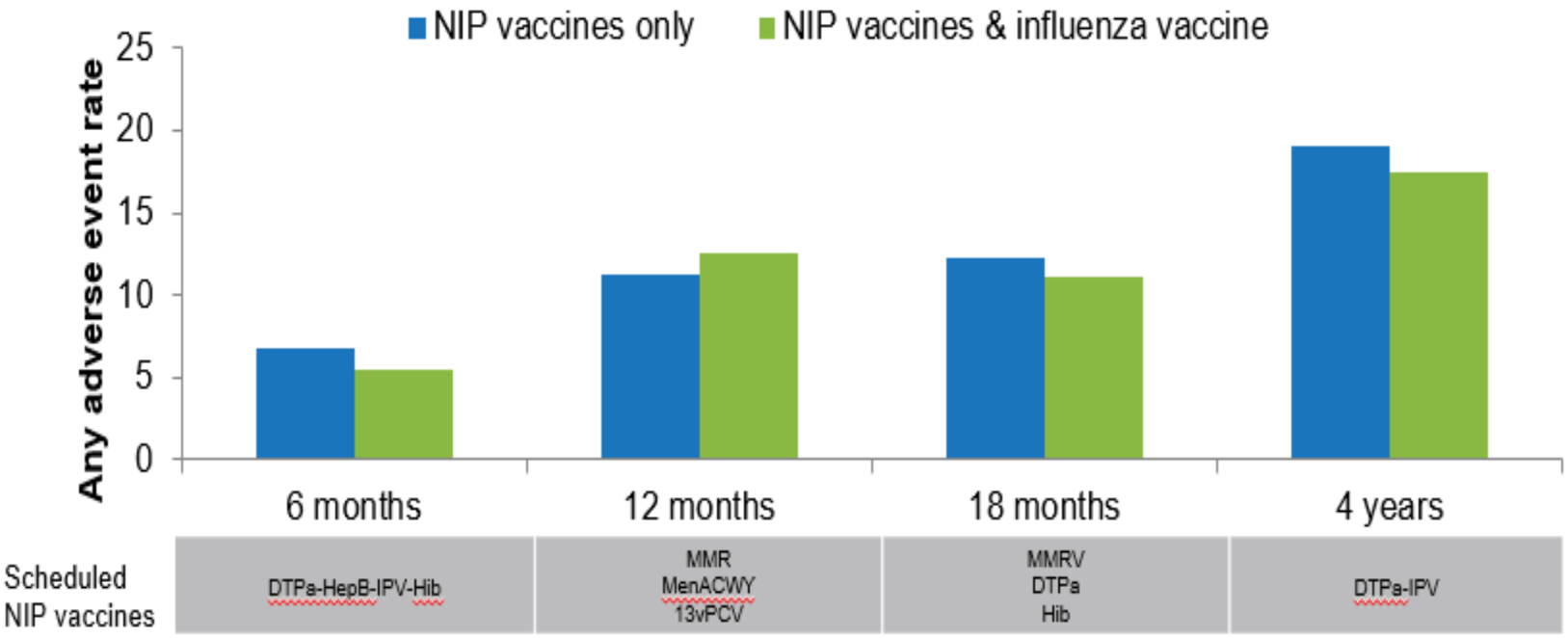
De-identified responses monitored

Results shared with Australian Government & on website

AEFI: Adverse event following immunisation
GP: General practice
ED: Emergency department

AEFI after NIP and influenza vaccines (2019) in children

No difference in AEFI when influenza vaccines given with scheduled NIP vaccines



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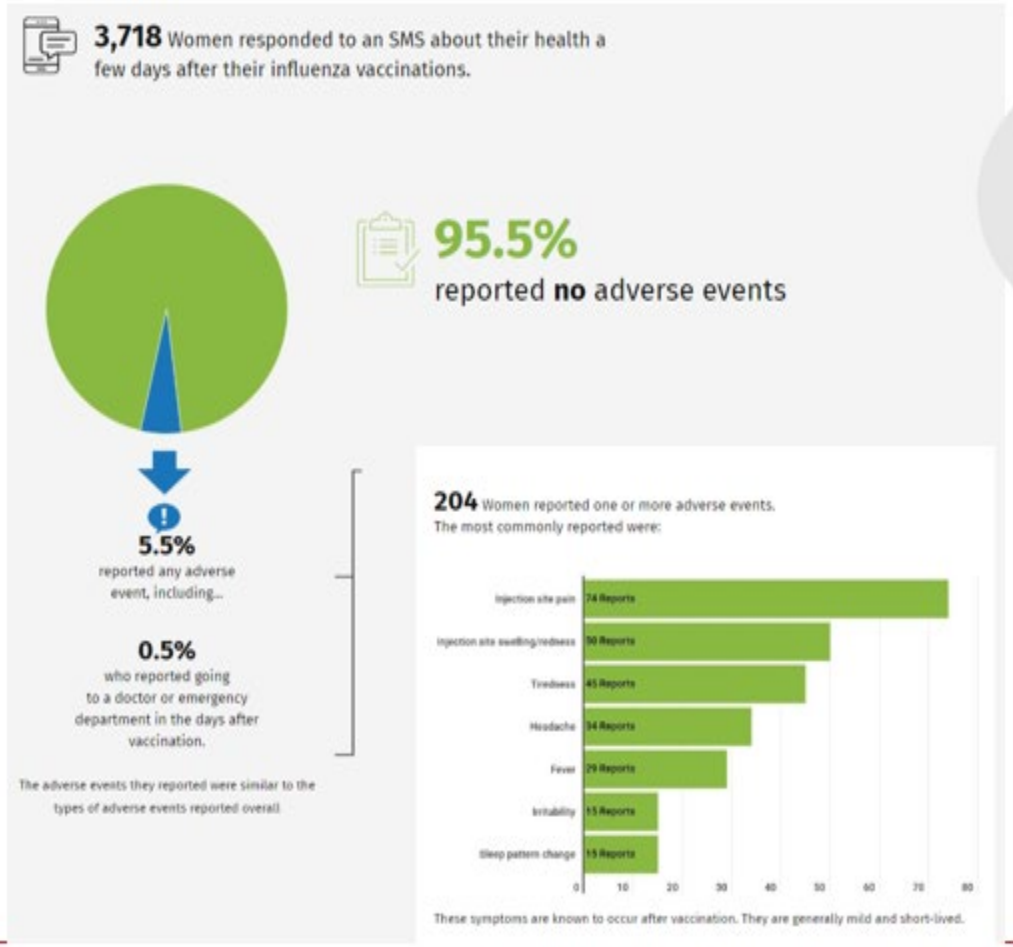
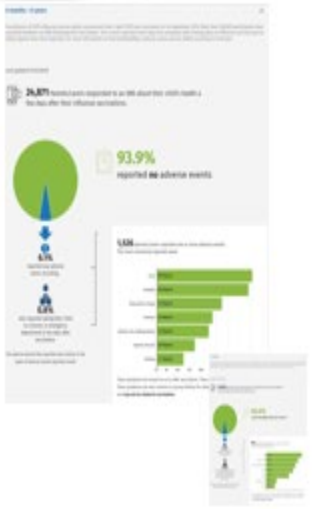
Pregnant women (2019)



Visit our website
Ausvaxsafety.org.au
for weekly updates!



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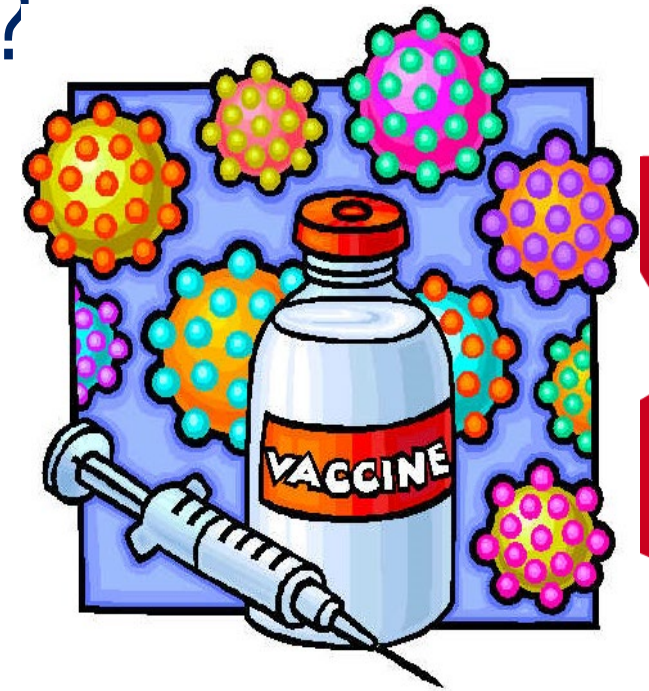
What reactions should we be looking out for with this years influenza vaccines?



Vaxigrip TETRA (for 6mo to <5years FULL DOSE)

Table 1 - Frequency of unsolicited adverse reactions within 7 days after vaccination with Vaxigrip Tetra in adults (18 to 60 years of age) and elderly (> 60 years of age)

	Adults (18 to 60 years) (N=3040)		Elderly (> 60 years) (N=1392)	
Subjects experiencing at least one:	**%**	**Frequency**	**%**	**Frequency**
General disorders and administration site conditions				
Local reactions				
Injection site pain	52.8	Very Common	25.8	Very Common
Injection site erythema	7.6	Common	7	Common
Injection site swelling	5.9	Common	3.5	Common
Injection site induration	5.7	Common	3	Common
Injection site ecchymosis	0.9	Uncommon	0.4	Uncommon
Systemic reactions				
Malaise	19.2	Very Common	9.3	Common
Shivering	6.2	Common	4.3	Common
Fever	1.3	Common	0.9	Uncommon
Nervous system disorders				
Headache	27.8	Very Common	15.6	Very Common
Musculoskeletal and connective tissue disorders				
Myalgia	23	Very Common	13.9	Very Common

NSW GOVERNMENT

FLUQUADRI (6months to 64 years of age)

- In children, injection site reaction, irritability, appetite loss and fever

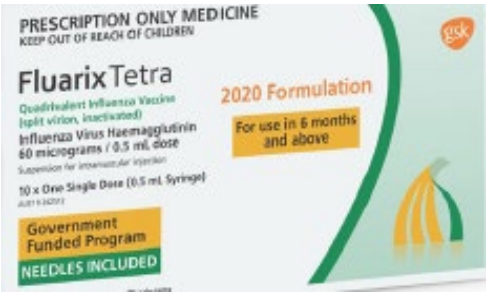
- In adults- pain at injection site

Fluarix Tetra (for 6mo to 64 year old)

Table 1: FLUARIX TETRA: Incidence of adverse reactions per dose in subjects ≥18 years of age

System Organ Class	Frequency	Adverse Reactions
Nervous system disorders	Common	Headache
	Uncommon	Dizziness[1]
Gastrointestinal disorders	Common	Gastrointestinal symptoms (including nausea, vomiting, diarrhoea and/or abdominal pain)
Skin and subcutaneous tissue disorders	Common	Sweating[2]
Musculoskeletal and connective tissue disorders	Very common	Myalgia
	Common	Arthralgia
General disorders and administration site conditions	Very common	Injection site pain, fatigue
	Common	Injection site redness, injection site swelling, shivering, fever, injection site induration[2]
	Uncommon	Injection site hematoma[1], injection site pruritus[1]

[1] Reported as unsolicited adverse reaction



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Afluria Quad (5 – 64 years of age)

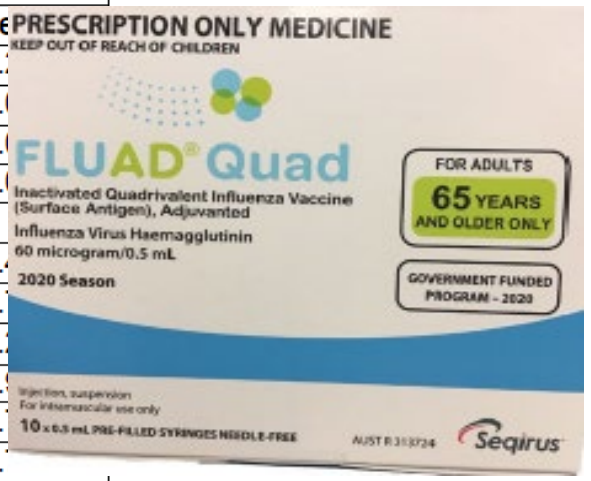
	Afluria® Quad vaccine N=854 [b]	
	Any	Gr 3
Local Adverse Reactions[c]		
Pain	47.9	0.7
Swelling/Lump	3.7	0.1
Redness	2.9	0
Systemic Adverse Events[d]		
Myalgia (muscle ache)	25.5	1.9
Headache	21.7	1.7
Malaise	8.9	0.7
Nausea	6.9	0.6
Chills	4.8	0.6
Vomiting	1.5	0.4
Fever	1.1	0.4

NSW GOVERNMENT

FLUAD Quad (for 65 years & over only)

Table 1: Incidence of Solicited Local and Systemic Adverse Events[a] in the Solicited Safety Population[b] Reported within 7 Days After Dosing (Study V118_20)

	Percentage (%) of Subjects Reporting a Solicited Event					
	Fluad® Quad N=883		Fluad® N=439		aTIV-2 N=438	
Local (Injection site) Reactions						
	Any[c]	Severe[d]	Any[c]	Severe[d]	Any[c]	Seve
Injection site pain	31.9	0.0	29.1	0.9	25.7	0.
Erythema	7.6	0.0	7.4	0.3	8.6	0.
Induration	7.0	0.0	5.4	0.0	5.3	0.
Ecchymosis	2.5	0.1	1.5	0.0	1.5	0.
Systemic Reactions						
Fatigue	16.0	0.7	15.4	0.7	11.5	1.
Headache	12.0	0.5	10.6	0.7	11.3	0.
Arthralgia	9.1	0.3	8.5	0.0	7.1	1.
Myalgia	8.1	0.5	7.8	0.0	6.9	0.
Diarrhoea	5.5	0.6	5.5	0.5	6.9	0.
Chills	4.7	0.2	3.4	0.5	4.4	0.
Nausea	4.0	0.2	4.1	0.0	4.6	0.9
Loss of appetite	3.2	0.2	4.8	0.0	3.7	0.5
Vomiting	0.8	0.1	0.5	0.0	2.1	0.7
Fever	0.5	0.1	0.2	0.0	0.5	0.0



NSW GOVERNMENT

Adverse Event Following Immunisation

- An Adverse Event Following Immunisation (AEFI) can be any unexpected or serious outcome that happens following administration of a vaccine.
- It may be related to the vaccine itself, handling of the vaccine or its administration.
- An AEFI can be coincidentally associated with the timing of immunisation without necessarily being caused by the vaccine or immunisation process
- National reporting form – note in NSW the form is to send to your PHU not TGA

NSW GOVERNMENT

Recommendations and dosing

- All influenza vaccine to be administered IM at 90 deg

- Individuals from 9 years of age: one injection of 0.5 mL dose. (except for…)
- Children from 6 months to 8 years of age:

  - If the child has not previously been vaccinated: two 0.5 ml injections at least one month apart.
  - If the child has been previously vaccinated: a single 0.5 ml injection.

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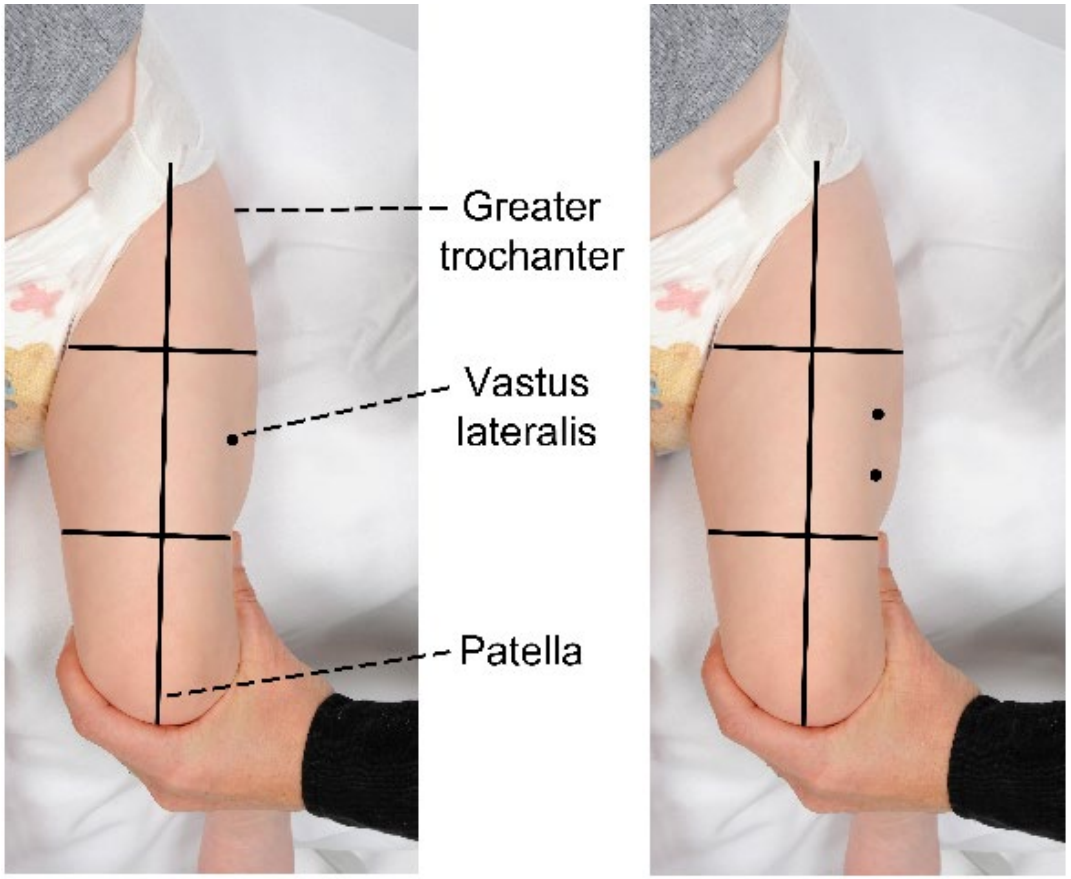
Recommended injection sites by age

Infants < 12-months



Do not inject into the anterior aspect of the thigh as underlying structures may be damaged.

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Implications of incorrect injection technique

- **Injection site reactions –**

more likely if vaccine inadvertently given into subcutaneous tissue

- Shoulder injury related to vaccine administration (SIRVA)

NSW GOVERNMENT

Some good questions

Q. Anaphylaxis to previous influenza vaccine or components – A. should not have vaccine

Q. Egg allergy – A. good to have vaccine

Q. When is it too late in the season? –A. offer all season

Q. I've had influenza this season do I need the vaccine? A. well yes, yes you should

Q. Latex allergy and influenza vaccine – A. nil latex

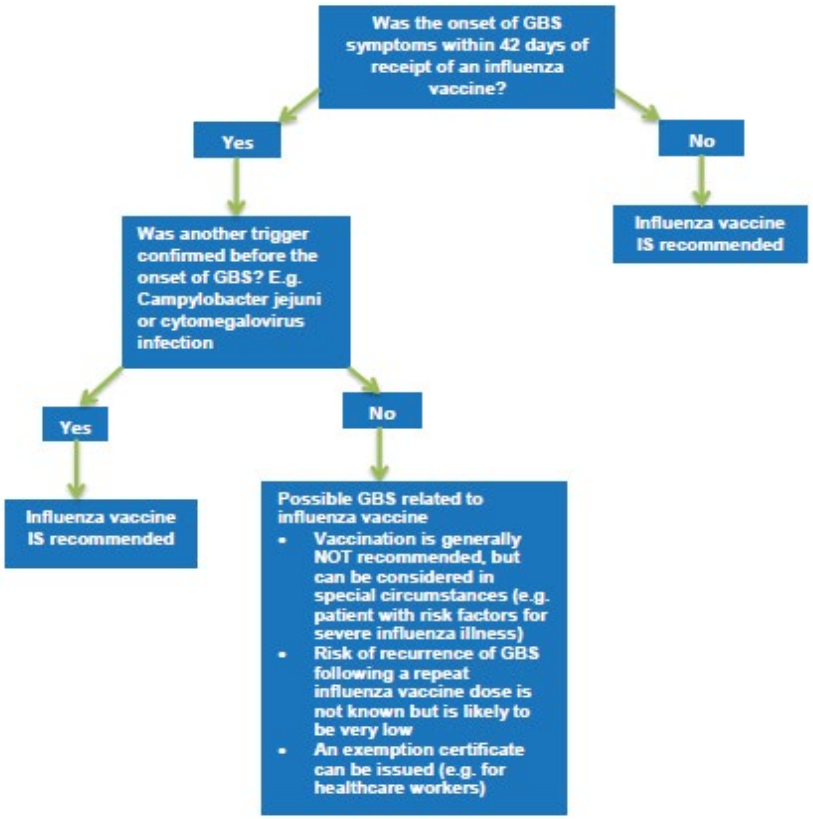
Q. Hx of GBS should I vaccinate– A. Well depends

NSW GOVERNMENT

Influenza vaccine and patients with a history of GBS

AusVaxSafety
An NCIRS led collaboration

APPROACH TO INFLUENZA VACCINATION IN PATIENTS WITH A HISTORY OF GUILLAIN–BARRÉ SYNDROME



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Excellent Resources

Immunisation information for:

Health Professionals

The Public

NSW School
Vaccination Program

Influenza Vaccination Provider Toolkit

Updated 1 March 2020

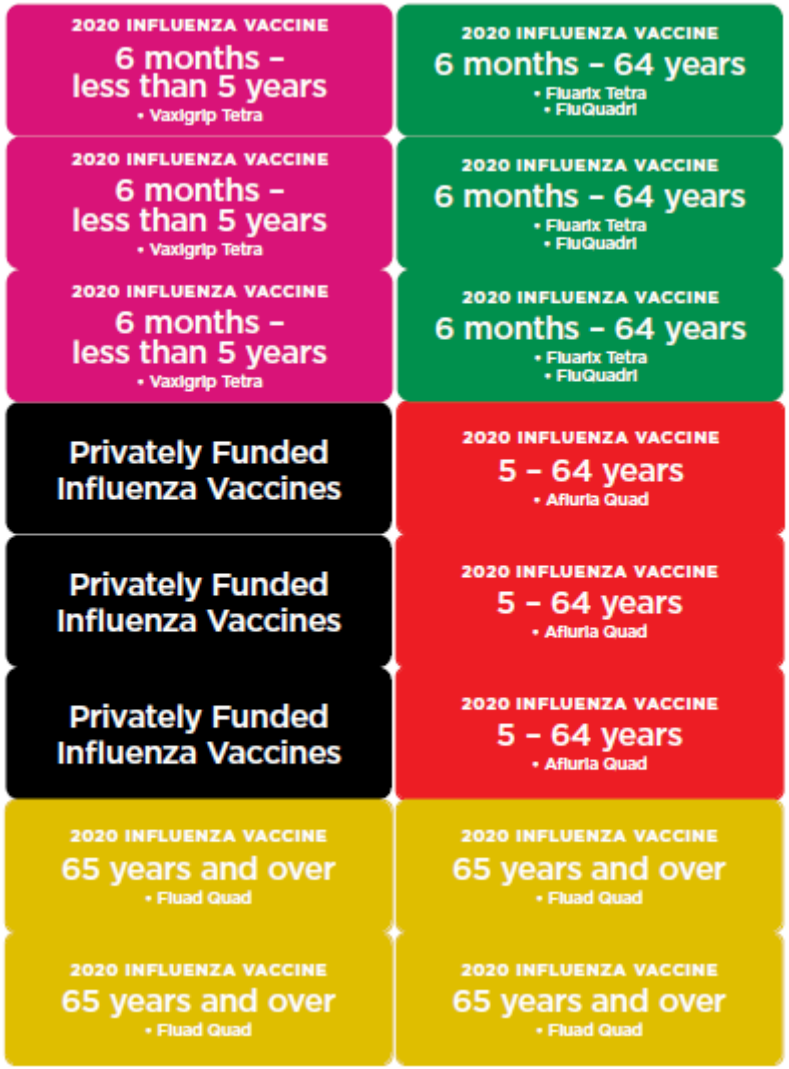
NCIRS National Centre for Immunisation Research and Surveillance

Melbourne VACCINE EDUCATION Centre

NSW GOVERNMENT

Influenza Vaccination Provider Toolkit

Updated 1 March 2020



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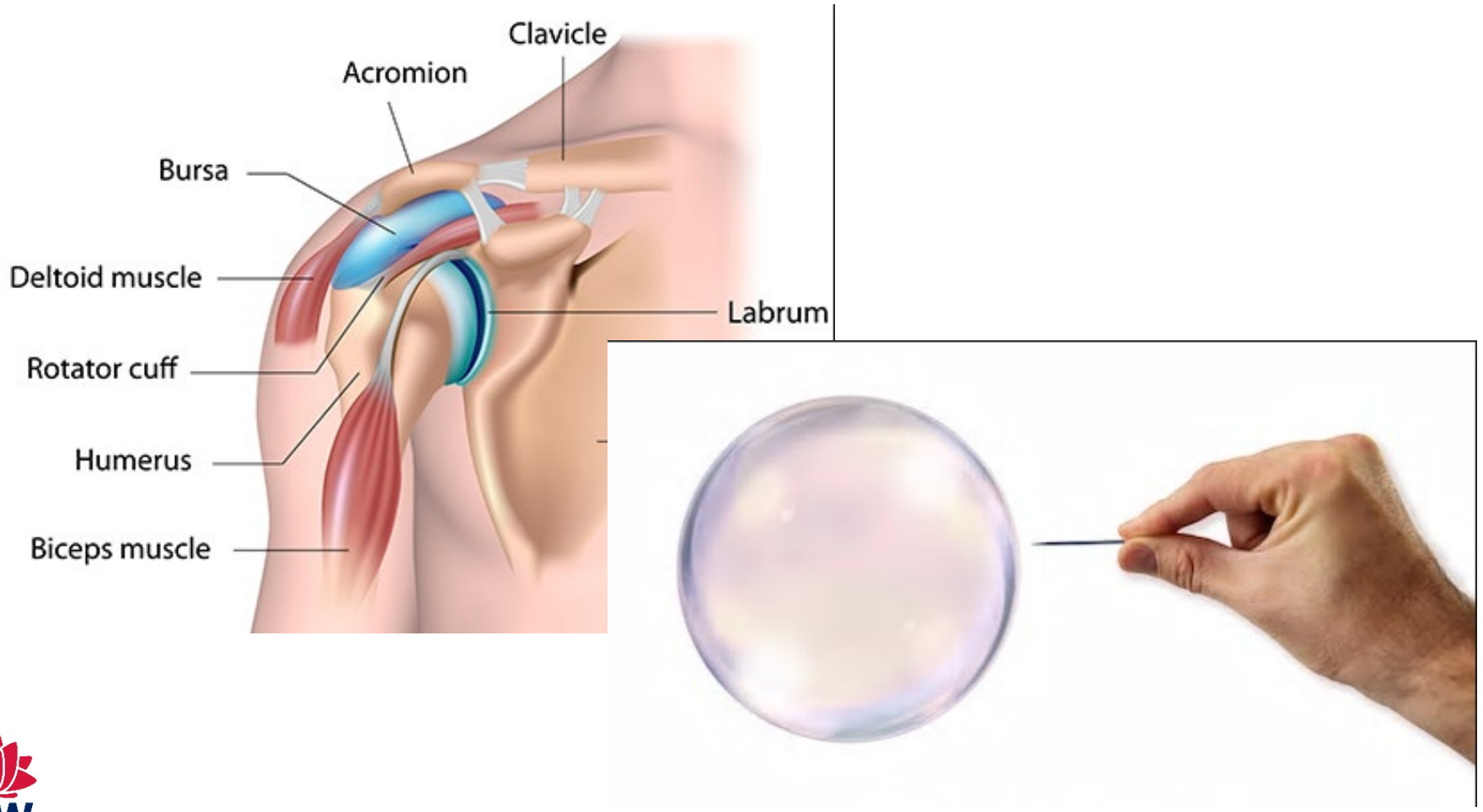
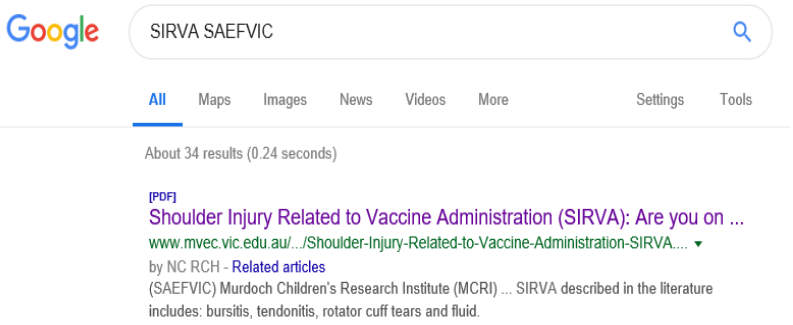
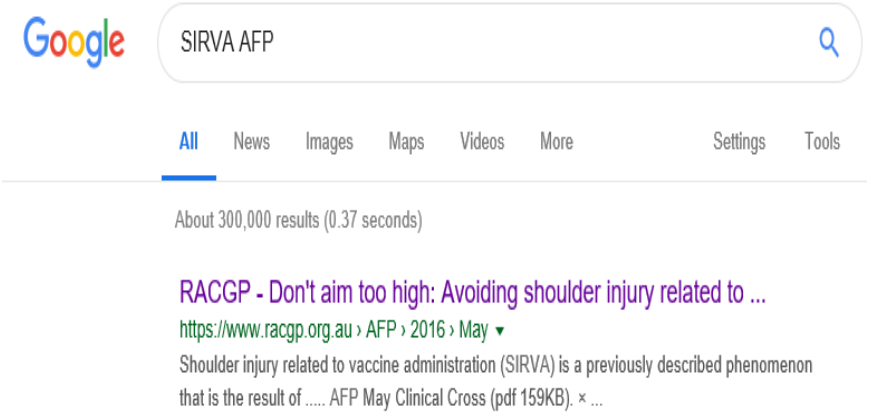
Shoulder injury related to vaccine administration (SIRVA)



NSW GOVERNMENT

References





Melbourne VACCINE EDUCATION Centre

Shoulder Injury Related to Vaccine Administration (SIRVA): Are you on Target? – A SAEFVIC Case Series

Department of Health Newsletter: October 2017

Author: Mel Addison Surveillance of Adverse Events Following Vaccination in the Community (SAEFVIC) Murdoch Children's Research Institute (MCRI)

Acknowledgements: Georgina Lewis (SAEFVIC), Alissa McMinn (SAEFVIC), Dr Jim Buttery (MMC) & Dr Nigel Crawford (RCH)

NSW GOVERNMENT

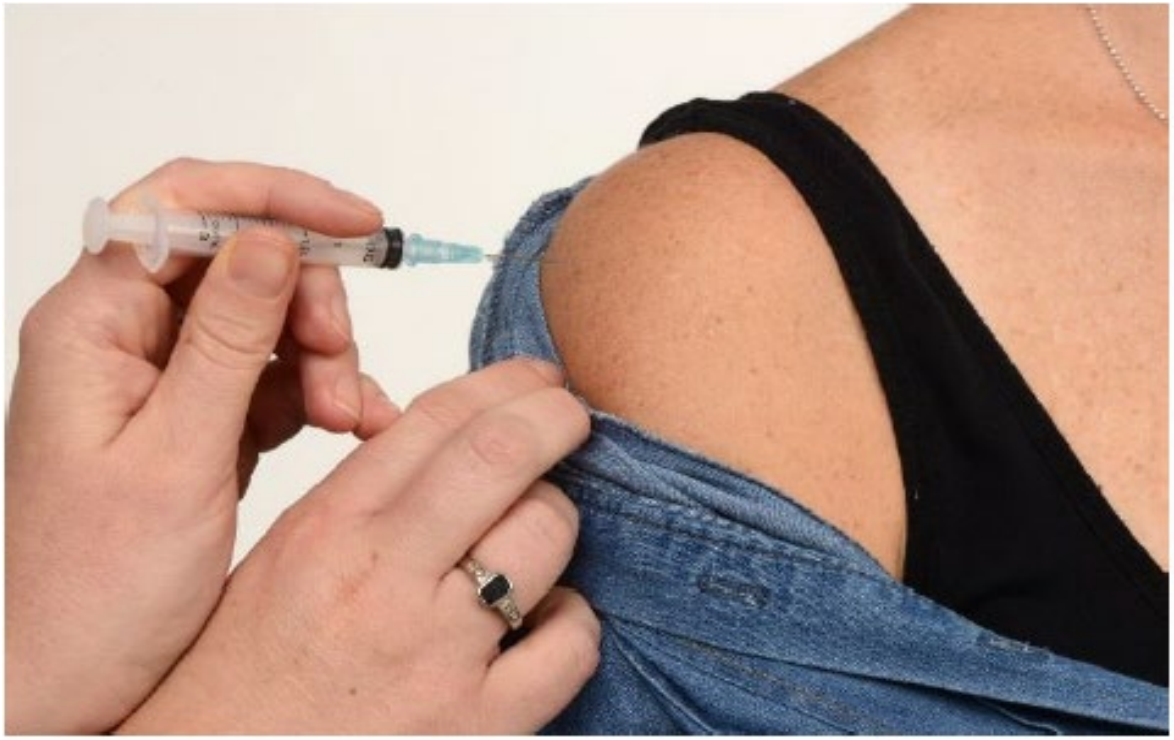
SIRVA case reports

Table 1. Previous reports of SIRVA

Ref	Age and sex	Vac	Onset	Imaging	Management	Outcome
1	n = 13 (11 female, 2 male), age range: 26–83	8 flu, 2 DT, 2 dTpa, 1 HPV	7 immediate, 5 within 24 hours, 1 at 4 days	MRI: bursitis, tendinitis, rotator cuff tears	NSAIDS, corticosteroid injection, physiotherapy	31% resolution, 69% improvement
3	22 female	Flu	2 hours	US/MRI: supraspinatus tear, bursitis, bony contusion	Physiotherapy	Improvement at 11 weeks
9	59 female	PPSV23	2 hours	MRI: supraspinatus tear, bursitis	Antibiotics initially, physiotherapy	Improvement at 12 weeks
7	36 female	Hepatitis A	Unknown	US: normal	Distension arthrography, physiotherapy	Improvement at 3 months
7	54 male	Flu	Unknown	US: bursitis	Distension arthrography, physiotherapy	Resolution at 3 months
7	73 female	Tetanus	Unknown	US: calcification of greater tubercle	Distension arthrography + physiotherapy	Resolution at 4 weeks
10	73 female	PPSV23	2 hours	Intraoperative: rotator cuff tear, biceps tendon rupture	Antibiotics initially, physiotherapy	Improvement at 2 weeks
2	71 female	PPSV23	2 days	Unknown	Lidocaine, corticosteroid injection, physiotherapy	Resolution at 6 months
2	89 male	Flu	2 days	Unknown	Lidocaine, corticosteroid injection, physiotherapy	Resolution at 3 months
14	76 male	Flu	Immediate	US: subacromial bursitis	Corticosteroid injection	Resolution at 1 month
4	n = 4 (2 female, 2 male), age range: 36–66	Flu	1 immediate, 1 within 3 hours, 1 within 6 hours, 1 at 2 days	MRI: subacromial bursitis, deltoid inflammation, bone marrow oedema	NSAIDS, physiotherapy	Resolution 1–6 months

NSW GOVERNMENT

Papa Bear



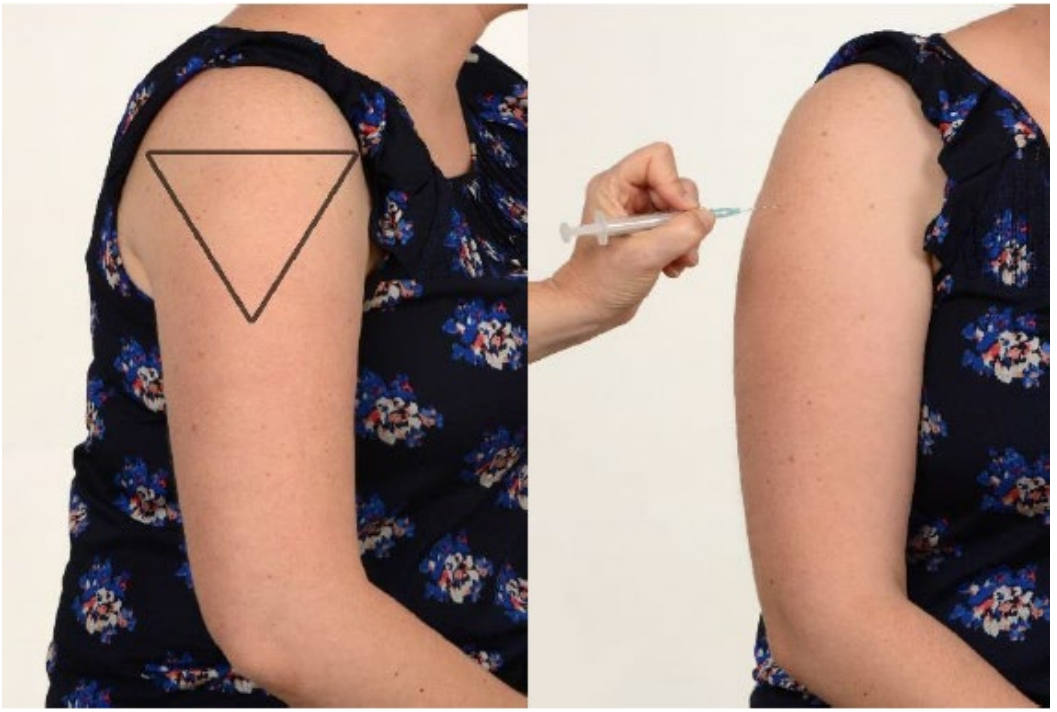
Injection technique: TOO HIGH

NSW GOVERNMENT

Mumma Bear

Injection technique: TOO LOW

Goldilocks



Injection technique: CORRECT!

NSW GOVERNMENT

Superhero


Vaccine Storage and Cold Chain Management
Menu
About
Resources
Help
Vaccine Storage and Cold Chain Management
This module contains audio, please make sure your speakers are turned on or your headphones are plugged in.
Click the Next > button to continue.
1 of 66

Vaccine storage and cold chain management – see NSW Health Website

https://www.health.nsw.gov.au/immunisation/Pages/cold-chain-management.aspx

In order to obtain funded vaccines from the NSW Government, immunisation providers make a declaration that they will do the following:

- Follow the new National Vaccine Storage Guidelines 'Strive for 5' (3rd edition) 2019
- At least one person in the facility must have undertaken Vaccine Storage and Cold Chain Management online training module. (it is recommended that all staff coming into contact with vaccine fridges complete this module). https://nswhealth.seertechsolutions.com.au/public_content/HETICP/HETI/CCMWebv3/story_html5.html
- **Only use a purpose built vaccine fridge to store vaccines**
- Have a computerised temperature data logger (logger) to continuously record fridge temps.
    - New thermostability data enables some vaccines to be kept even when exposed to temperatures outside 2 - 8 degrees. In order to do this, the time outside these temps is needed, the only accurate method is with a logger
- Download the logger weekly, review the data and store files so they can be retrieved when required
- Document twice daily manual logging on the Commonwealth temperature graph (next slide)
- Contact the HNELHD immunisation team if temperatures outside 2-8 degrees (except excursions of >8°C to up to 12°C for no longer than 15 minutes).
- Conduct annual self audit - Appendix 2 Strive for 5
- Educate ALL people who can come into contact with the vaccine fridge, the power supply or are responsible for ordering and receiving vaccines about vaccine storage management

NSW GOVERNMENT

Safe Vaccine Storage Checklist

Remember to follow the principles of safe vaccine storage management to ensure safe and effective vaccines are given to your patients. Strive for 5°C and report ALL cold chain breaches to your local public health unit on 1300 066 055.

Vaccine refrigerators

Purpose-built vaccine refrigerators (PBVR) are the only suitable option for vaccine storage.

- If your practice does not have a PBVR you will be required to order a new PBVR.
- Domestic fridges and bar fridges are not built to store vaccines and must not be used for vaccine storage.

Vaccine Storage

Vaccines MUST be stored in their original packaging

- Store vaccines in their original cardboard packaging as they are sensitive to UV light and temperature fluctuations.
- Vaccines must not touch the sides of the fridge
- Vaccines must not be stored on the floor of the fridge
- Annual vaccine storage self-audit completed and up to date.

Temperature monitoring

Vaccine fridge temperatures MUST be continuously monitored using a data logger

- Data loggers **MUST** be set at 5 minute intervals with a report downloaded weekly and when a potential cold chain breach has been identified.
- Current, minimum and maximum temperatures **MUST** be manually recorded twice daily, every day the practice is open. Thermometer to be reset after temperatures are recorded.
- Review temperature of fridge before removing vaccines for administration.

Vaccine expiry

Rotate stock and discard expired vaccines

- Check the vaccine expiry before administering vaccines.
- Regularly review stock and bring vaccines with the shortest dates to the front of the refrigerator so they are used first.

Staff education

Ensure ALL staff are trained in vaccine management

- Provide regular vaccine management orientation and education training sessions for all staff.
- Ensure one member of staff is responsible for vaccine management and a back up person.
- **The NSW Health** Vaccine Storage and Cold Chain Management online training module **may be used to train all staff that are responsible for vaccine storage and monitoring, visit** https://nswhealth.seertechsolutions.com.au/public_content/HETICP/HETI/CCMWebv3/story_flash.html

For more information visit https://www.health.nsw.gov.au/immunisation

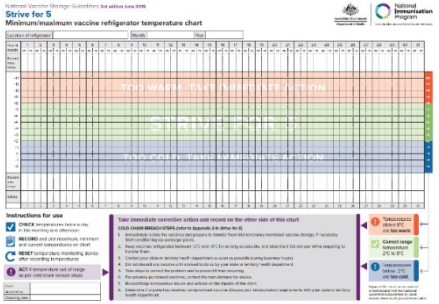
Vaccine ordering

- All non aged care facilities must order online
- https://nsw.tollhealthcare.com/
- After all facilities receive their first order, subsequent orders can be filled
- DO NOT overfill your fridge – use your order history on the vaccine centre website to monitor requirements.
- Notify any change of opening hours, there have been many returned deliveries.

NSW GOVERNMENT

Resources

https://www.health.gov.au/resources/publications/national-vaccine-storage-guidelines-strive-for-5-vaccine-fridge-temperature-chart-poster



Hunter New England Immunisation Website

Under Immunisation Information for Health Professionals

Cold Chain Breach

Click form **HERE** to report a cold chain breach.
(disregard temperatures < 12 degrees for < 15 mins)

http://www.hnehealth.nsw.gov.au/hneph/Immunisation/Pages/Cold-Chain-Breach.aspx

Vaccine Ordering and Management

If your facility is unable to order vaccines please contact us on 49246477 (eg. If there is a block on your account)

- Request for Vaccine Account Number for New Practice
- Vaccine Ordering
- To order new CCB labels (order extras)

Vaccine Cold Chain Resources

- NSW MoH Vaccine Storage and Cold chain Management Policy Directive (Mandatory)
- Strive for 5
- Temperature Graph

http://www.hnehealth.nsw.gov.au/hneph/Immunisation/Pages/Vaccine-Ordering-and-Management.aspx

NSW Health - Cold chain toolkit for immunisation providers

https://www.health.nsw.gov.au/immunisation/Documents/cold-chain-toolkit.pdf

NSW GOVERNMENT

Managing a cold chain breach

Immunisation providers must report all cold chain breaches to their local public health unit.

1. Isolate vaccines and place a **'DO NOT USE'** sign on the fridge.
2. Continue to store vaccines between +2°C to +8°C
3. **Do not discard** any vaccines.
4. Download and review the data logging report to assess the duration of the breach and temperature the refrigerator reached.

Cold Chain Breach

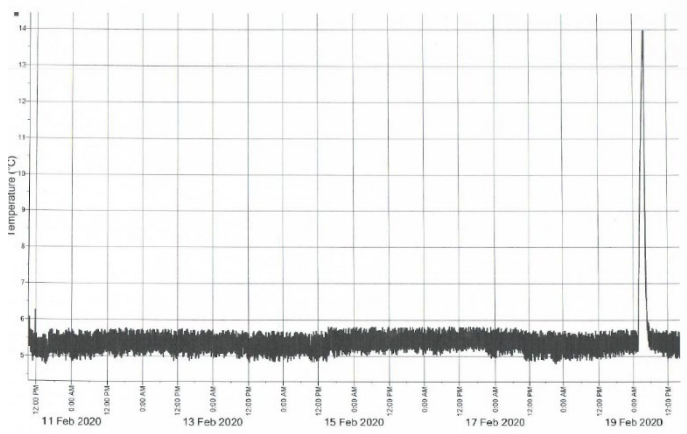
Click form **HERE** to report a cold chain breach.
(disregard temperatures < 12 degrees for < 15 mins)

NSW GOVERNMENT

Learn how to email logger file to the PHU

- Ensure more than one person knows how to use the logger
- This includes initiating, downloading, storing and emailing the file.

WHY
If you send a pdf, this is what we can see; We have no idea how long the fridge was above 8 degrees.

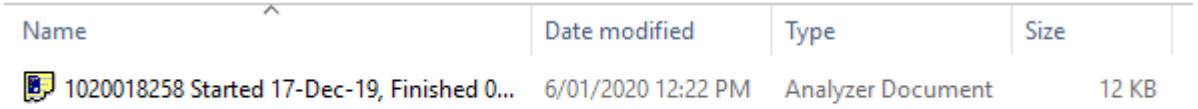


NSW GOVERNMENT

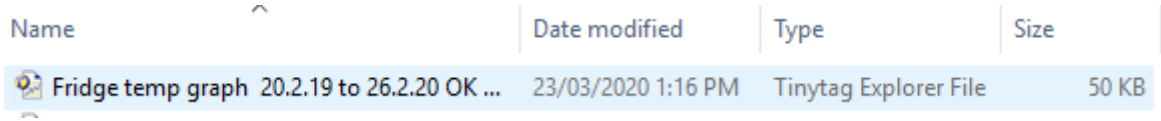
Learn how to email logger file to the PHU

- Locate where file is stored on your computer or server

LogTag

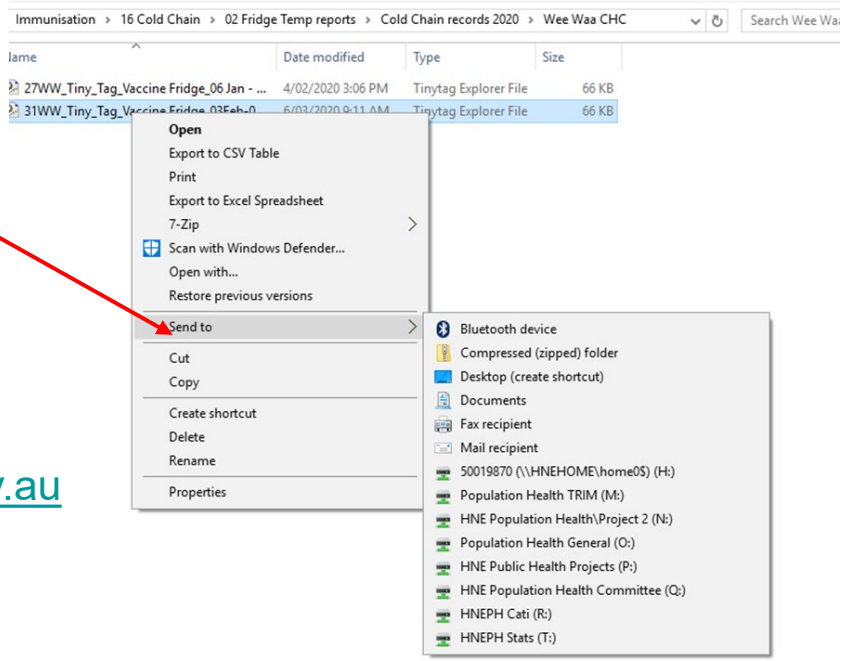


Tiny Tag



- Right click on the file
- Click on send to

There should be an option to send to mail recipient or similar. Click on this and add our email address and send.



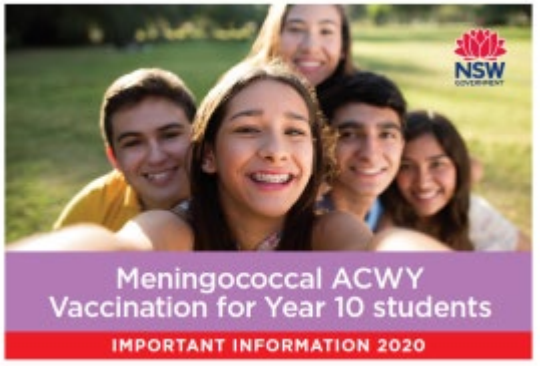
hnelhd-phimmunisation@health.nsw.gov.au

NSW GOVERNMENT

2020 NSW School Vaccination Program

Vaccines offered.

Year	Vaccine	Brand	Doses	Schedule
7	HPV	Gardasil 9	2	6 month gap
	dTpa	Boostrix	1	
10	Men ACWY	Nimenrix	1	



NSW GOVERNMENT

Catch up in School program

Catch up is available in schools into Year 8 and 11 as below.

Year	Vaccine	Brand	Doses	Schedule
8*	HPV	Gardasil 9	2	6 month gap
	dTpa	Boostrix	1	
11^	Men ACWY	Nimenrix	1	

* Where consent was given in Year 7
^ Where consent was given in Year 10

NSW GOVERNMENT

COVID-19 & School Program

- The school program has been suspended in NSW at present – recommencement for review in September 2020.
- There may be clinics held to offer Meningococcal ACWY to Year 10 students in term 2.
- Any student who has missed a vaccination at school will be caught up in the program during either 2020 or 2021.
- Practices should refer parents of these students back into the school program.
- Parents can be reassured that overdue school vaccines **DO NOT** incur income support penalties.

NSW GOVERNMENT

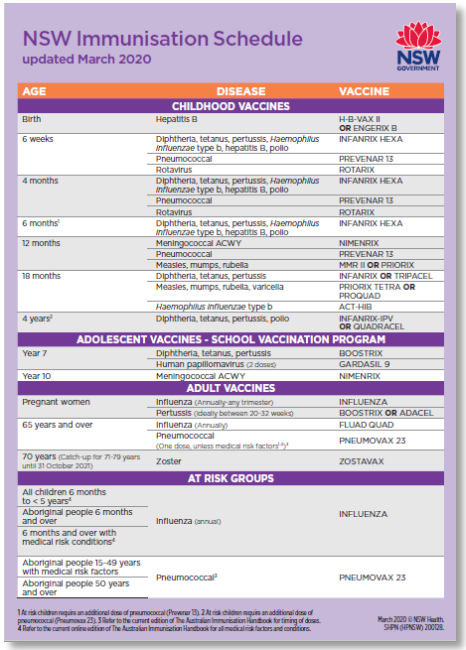
Immunisation services must continue!

Now more than ever, it is important to maintain high vaccination coverage levels to prevent outbreaks of vaccine preventable diseases in the community.

Providing vaccines recommended on the National Immunisation Program (NIP) is a priority.

Essential immunisation services should continue, in particular:

- Infant and early childhood
- Adolescent for catch up
- Winter influenza
- Adult and additional immunisations



NSW Immunisation Schedule
updated March 2020

AGE	DISEASE	VACCINE
CHILDHOOD VACCINES		
Birth	Hepatitis B	H-B-VAX II **OR** ENGERIX B
6 weeks	Diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, hepatitis B, polio	INFANRIX HEXA
	Pneumococcal	PREVENAR 13
	Rotavirus	ROTARIX
4 months	Diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, hepatitis B, polio	INFANRIX HEXA
	Pneumococcal	PREVENAR 13
	Rotavirus	ROTARIX
6 months[1]	Diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, hepatitis B, polio	INFANRIX HEXA
12 months	Meningococcal ACWY	NIMENRIX
	Pneumococcal	PREVENAR 13
	Measles, mumps, rubella	MMR II **OR** PRIORIX
18 months	Diphtheria, tetanus, pertussis	INFANRIX **OR** TRIPACEL
	Measles, mumps, rubella, varicella	PRIORIX TETRA **OR** PROQUAD
	Haemophilus influenzae type b	ACT-HIB
4 years[2]	Diphtheria, tetanus, pertussis, polio	INFANRIX-IPV **OR** QUADRACEL
ADOLESCENT VACCINES - SCHOOL VACCINATION PROGRAM		
Year 7	Diphtheria, tetanus, pertussis	BOOSTRIX
	Human papillomavirus (2 doses)	GARDASIL 9
Year 10	Meningococcal ACWY	NIMENRIX
ADULT VACCINES		
Pregnant women	Influenza (Annually-any trimester)	INFLUENZA
	Pertussis (Ideally between 20-32 weeks)	BOOSTRIX **OR** ADACEL
65 years and over	Influenza (Annually)	FLUAD QUAD
	Pneumococcal (One dose, unless medical risk factors[3,4])	PNEUMOVAX 23
70 years (Catch-up for 71-79 years until 31 October 2021)	Zoster	ZOSTAVAX
AT RISK GROUPS		
All children 6 months to < 5 years[2] Aboriginal people 6 months and over 6 months and over with medical risk conditions[4]	Influenza (annual)	INFLUENZA
Aboriginal people 15-49 years with medical risk factors Aboriginal people 50 years and over	Pneumococcal[3]	PNEUMOVAX 23

1 At risk children require an additional dose of pneumococcal (Prevenar 13). 2 At risk children require an additional dose of pneumococcal (Pneumovax 23). 3 Refer to the current edition of The Australian Immunisation Handbook for timing of doses. 4 Refer to the current online edition of The Australian Immunisation Handbook for all medical risk factors and conditions.

March 2020 © NSW Health. SHPN (HPNSW) 200128.

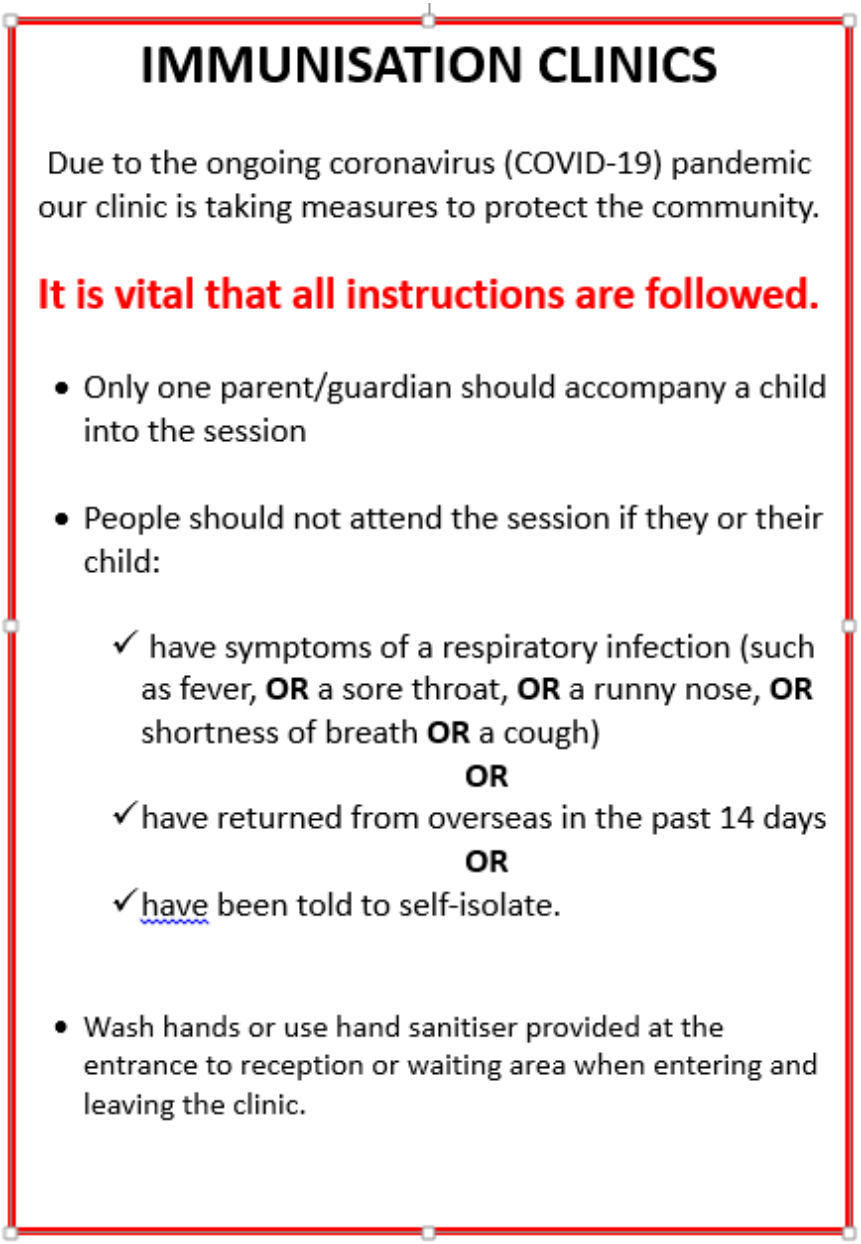
https://www.health.nsw.gov.au/immunisation/Publications/nsw-immunisation-schedule.pdf

NSW GOVERNMENT

Recommendations for venues

Signage should be displayed at the entrances of all vaccination clinics and include the following information:

Consideration should be given to the translation of all signage and messaging into other key community languages



IMMUNISATION CLINICS

Due to the ongoing coronavirus (COVID-19) pandemic our clinic is taking measures to protect the community.

It is vital that all instructions are followed.

- Only one parent/guardian should accompany a child into the session
- People should not attend the session if they or their child:
  - ✓ have symptoms of a respiratory infection (such as fever, **OR** a sore throat, **OR** a runny nose, **OR** shortness of breath **OR** a cough)

    OR
  - ✓ have returned from overseas in the past 14 days

    OR
  - ✓ have been told to self-isolate.
- Wash hands or use hand sanitiser provided at the entrance to reception or waiting area when entering and leaving the clinic.

NSW GOVERNMENT

Social distancing measures

- Remind staff that if they are unwell they **should not** attend work
- Send reminders to eligible patients and ask them to call in advance if they are not feeling well
- Ensure that a process is available to undertake a phone assessment
- Ask patients not to arrive early, phone before presenting to clinic.
- Make a staff member available to monitor queueing to ensure social distancing - **Options:**
  - an appointment system for vaccinations
  - Patients wait in car to be phoned when time to come into clinic, then return outside/in car following vaccination
- Ensure administration, clinical and patient areas are wiped down **frequently** using a sodium hypochlorite based solution.

NSW GOVERNMENT

Please

Knock

Then stand back & wait for the nurse to come.

Thank you for your Understanding.

NSW GOVERNMENT

Clinic set up

- Arrange a process and a checklist to assess each patient as they arrive for their vaccination prior to entering the practice. This could include keeping doors locked and ask patients to call once they are outside
- Designate specific times throughout the week for vaccination clinics to ensure that only well patients are in the clinic during those times
- Ensure that seating and queuing areas allow 1.5 metres between clients and staff
- **Remove all toys and magazines from your waiting room**
- If available use alternative entrance/exit to avoid patients walking through waiting area

NSW GOVERNMENT

Vaccination process

- **Ensure** that hand hygiene is performed between each patient
- Preferably wash hands or gel, before opening your vaccine fridge and repeatedly touching multi-dose boxes
- Minimise physical contact with client record documents
- Limit the vaccine process to one adult with the child/minor where possible

- Consider a separate room for clients to wait post vaccination dependant on numbers at each session or have clients wait outside/in cars.

NSW GOVERNMENT

Vaccination process

Consider…….

Immunisation providers are usually recommended to vaccinate children who have minor illnesses (without acute systemic symptoms/signs).
In the setting of the COVID-19 outbreak, immunisation providers should consider deferring routine immunisations for children with respiratory symptoms.

AEFI vs COVID-19

General advice not to attend clinic

NSW GOVERNMENT

Consider alternate models

Alternate locations for influenza vaccination clinics may also be considered if practicable such as an outdoor area e.g. practice car park.

Could include combining/sharing resources & staff with other practices in your local area.

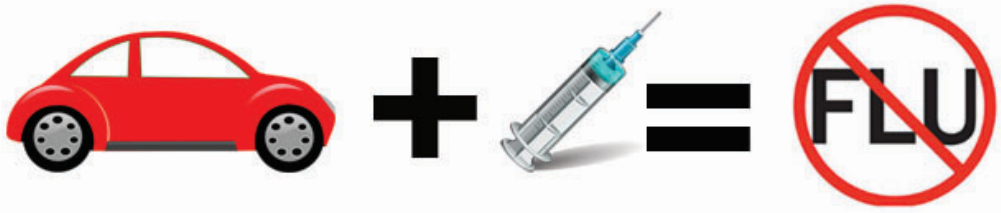
Points to consider for alternate models include:

- Patient/staff safety and comfort e.g. weather and traffic
- Requirements to maintain confidentiality and undertake pre-vaccination assessments
- Practice indemnity insurance
- Appropriate cold chain management
- Pre-vaccination waiting and post vaccination observation areas that provide social distancing
- Facilities/area to manage adverse events
- Maintaining vaccination records
- Bathroom and break facilities for staff
- Messaging to patients

NSW GOVERNMENT

Flu vaccine: Drive-through clinics to ease strain on healthcare system

Hundreds of Aussies are getting flu jabs from the comfort of their car as the Federal Government secures the largest ever supply of vaccines.



Drive - Through Flu Vaccination Clinics

NSW GOVERNMENT

To preserve your sanity!

Consider referring families to Child and family health clinics for routine immunisations. These clinics are held each regularly and are especially for immunising children. This should limit the risk of exposure to other illness.
http://www.hnehealth.nsw.gov.au/hneph/Immunisation/Pages/FREE-Immunisation-Clinic-Dates.aspx

NSW GOVERNMENT

Resources

NSW GOVERNMENT Health

PHN Immunisation Support Program

Home › Infectious diseases › Diseases › COVID-19 (Coronavirus) resources

COVID-19 (Coronavirus) resources

New frequently asked questions regarding influenza vaccine and immunisation services during the COVID-19 pandemic

8 April 2020 | National

Immunisation services during the COVID-19 pandemic

- How should immunisation services continue during the COVID-19 pandemic?

apna

Flu clinics during COVID-19

NSW GOVERNMENT

Holiday at Home!

ACTIVE ALERT - 6 minutes ago

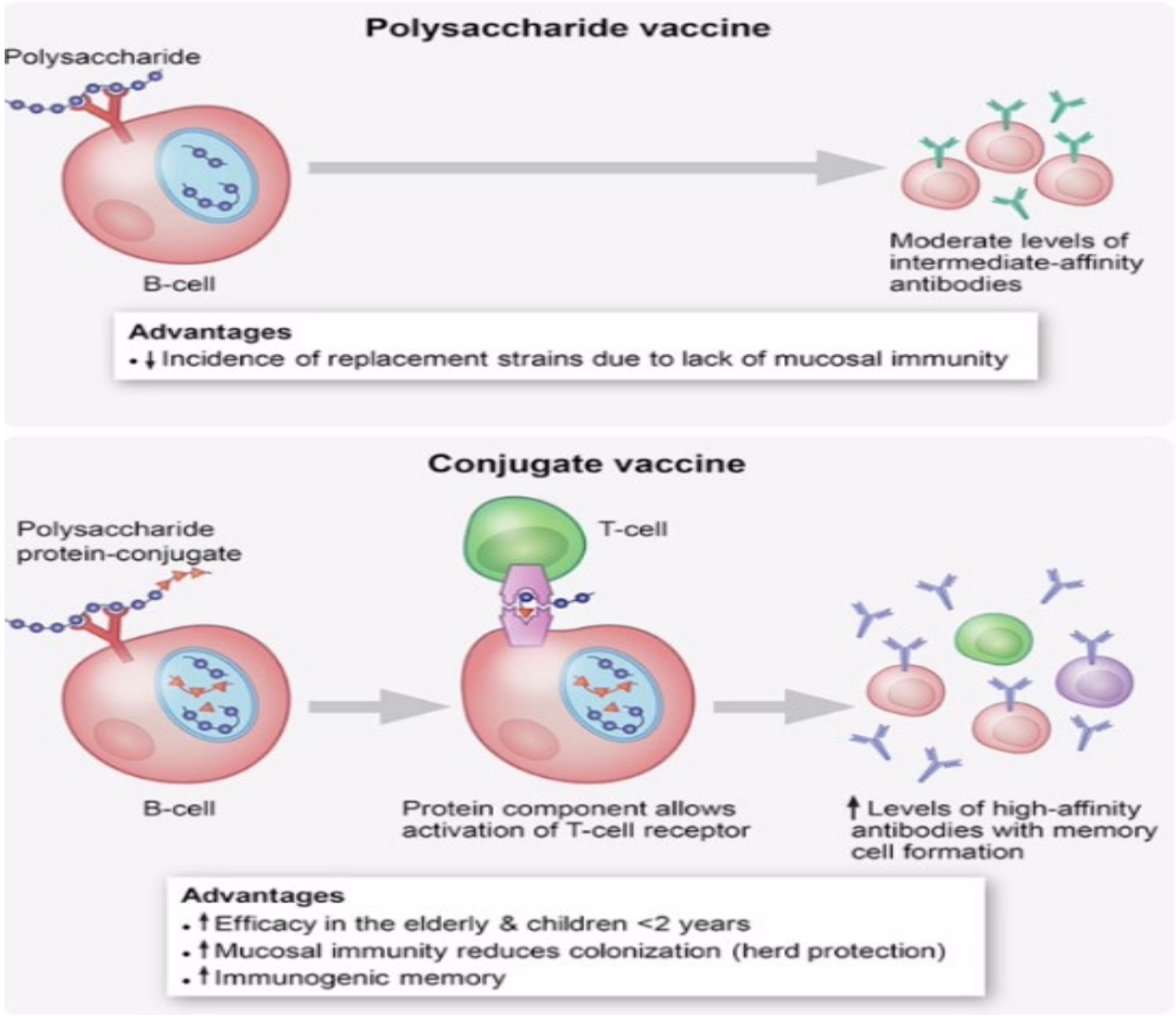
You are advised not to travel on the M1 & A1 this weekend as there are a number of COVID-19 hotspots on the route including Lake Macquarie, Port Macquarie & Byron Bay and parts of Sydney. Hospitals in smaller communities, especially Nelson Bay may not be able to help with an influx of cases. #stayhome

More information >>

NSW GOVERNMENT

Babies do not make IgG2 antibody until they are 2

Conjugate vaccines



NSW GOVERNMENT

NSW Immunisation Schedule

updated April 2019

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	Pneumococcal	PREVENAR 13
	Rotavirus	ROTARIX
4 months	Diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, hepatitis B, polio	INFANRIX HEXA
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12 months	Meningococcal ACWY	NIMENRIX
	Pneumococcal	PREVENAR 13
	Measles, mumps, rubella	MMR II **OR** PRIORIX
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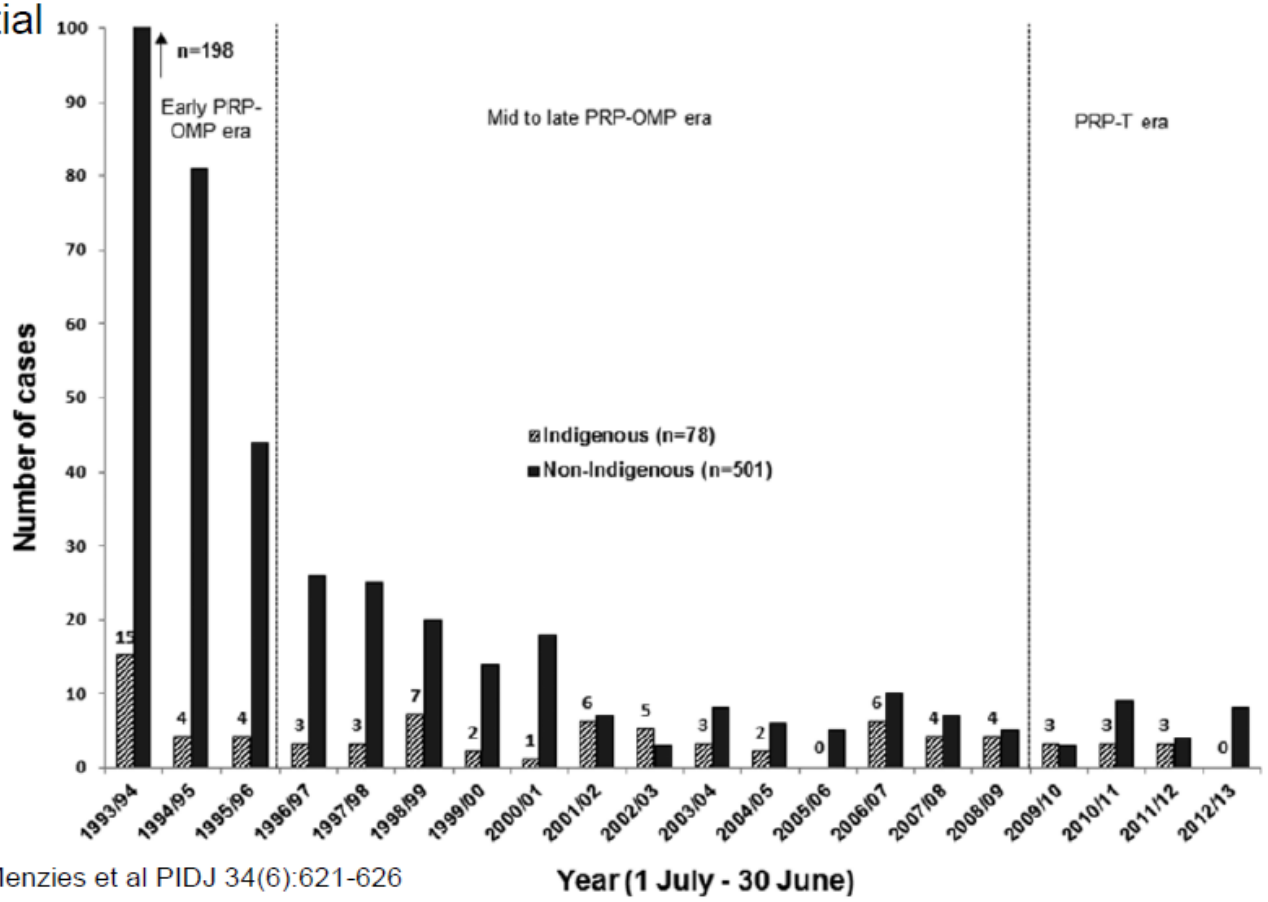
	Human papillomavirus (2 doses)	GARDASIL 9
Year 10	Meningococcal ACWY	NIMENRIX
ADULT VACCINES		
Pregnant women	Influenza (Annually-any trimester)	INFLUENZA
	Pertussis (Ideally between 20-32 weeks)	BOOSTRIX **OR** ADACEL
65 years and over	Influenza (Annually)	FLUAD
	Pneumococcal (One dose, unless medical risk conditions exist)[3,4]	PNEUMOVAX 23
70 years (Catch-up for 71-79 years until 31 October 2021)	Zoster	ZOSTAVAX
AT RISK GROUPS		
All children 6 months to < 5 years	Influenza (annual)	INFLUENZA
Aboriginal people 6 months and over		
6 months and over with medical risk conditions[4]		
Aboriginal people 15-49 years with medical risk factors	Pneumococcal[3,4]	PNEUMOVAX 23
Aboriginal people 50 years and over		

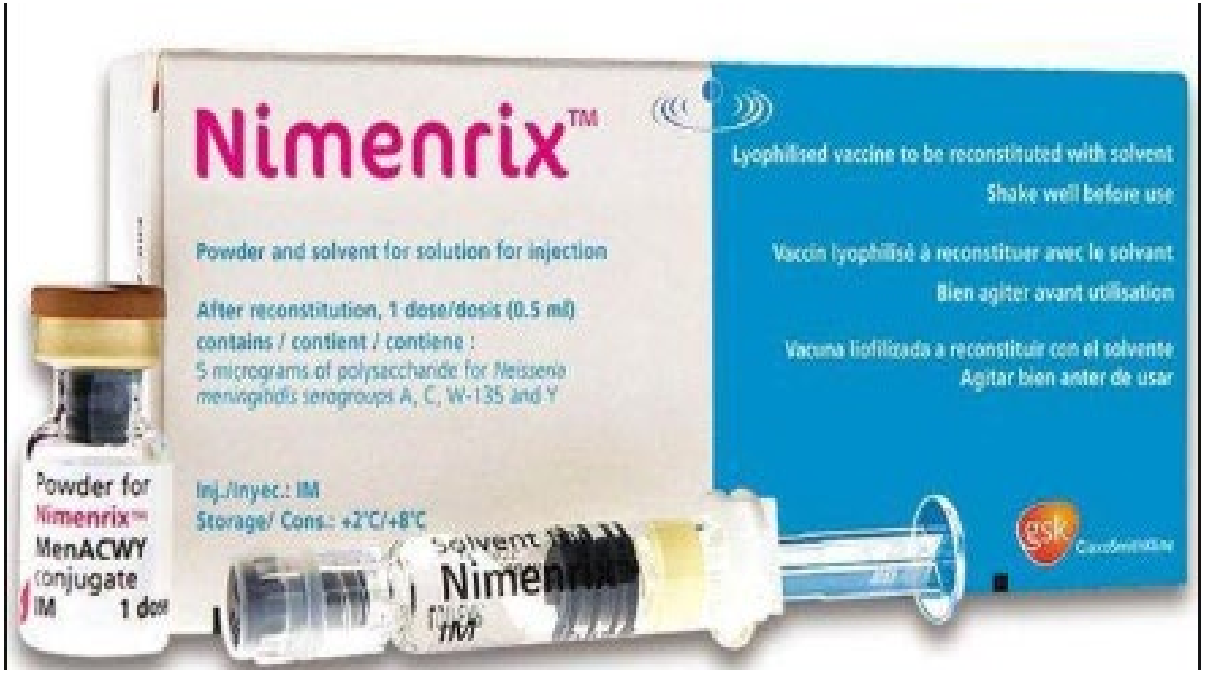
1 At risk children require an additional dose of pneumococcal (Prevenar 13). 2 At risk children require an additional dose of pneumococcal (Pneumovax 23). 3 Refer to the current edition of The Australian Immunisation Handbook for timing of doses. 4 Refer to the current online edition of The Australian Immunisation Handbook for all medical risk factors and conditions.

Changes in Hib disease trends over time

Cases of Hib disease have declined due to vaccination; however a small number of Hib cases still occur – continued vaccination with booster dose in second year of life essential



Source: Menzies et al PIDJ 34(6):621-626

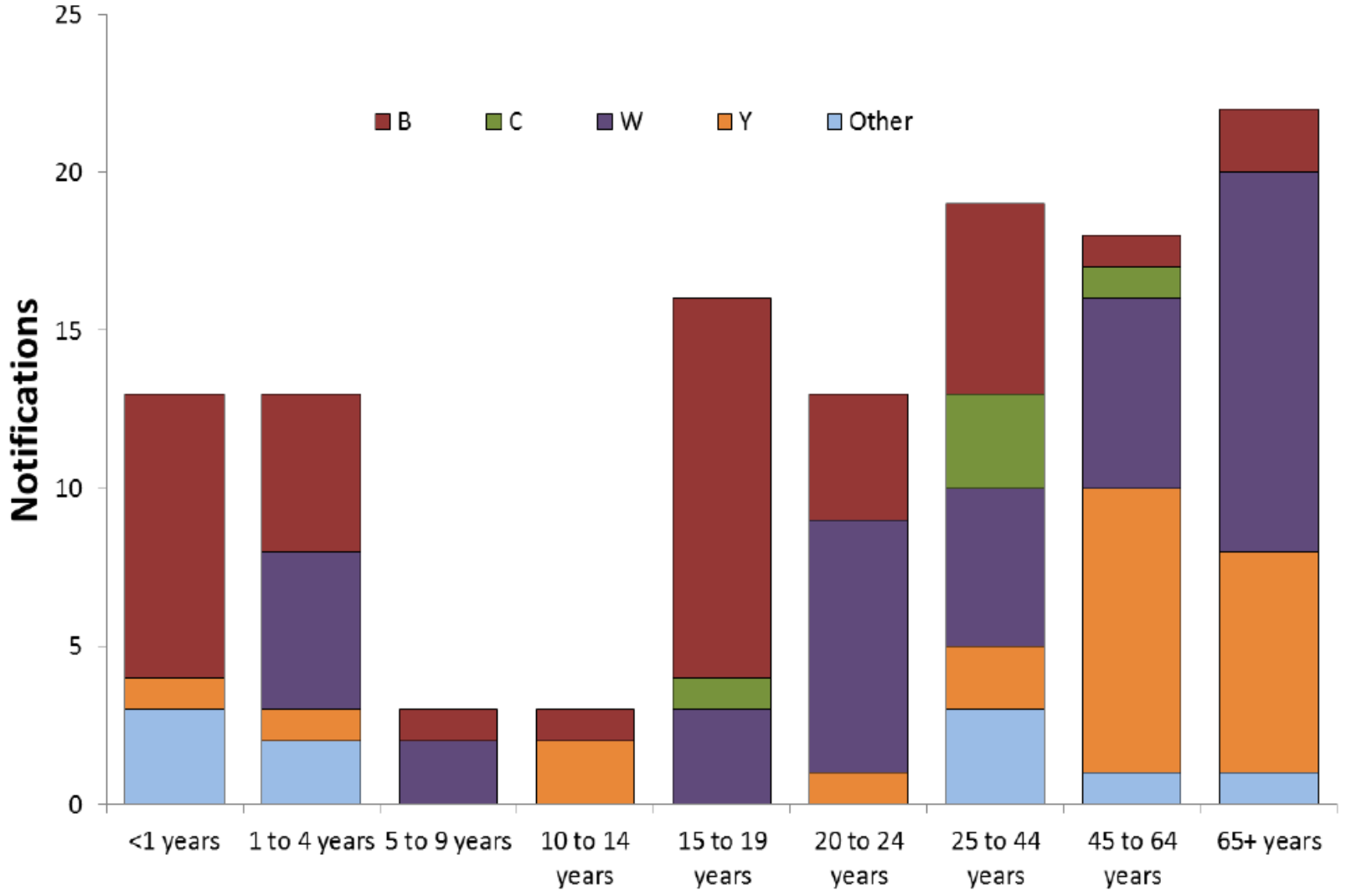


MenACWY-TT — quadrivalent meningococcal (serogroups A, C, W-135, Y)–tetanus toxoid

NSW GOVERNMENT

Incidence and serogroup of invasive meningococcal disease - Australia – 2017 to mid June : by age group

Figure 4. Notifications of IMD, Australia, 2017 YTD*, by age group and serogroup

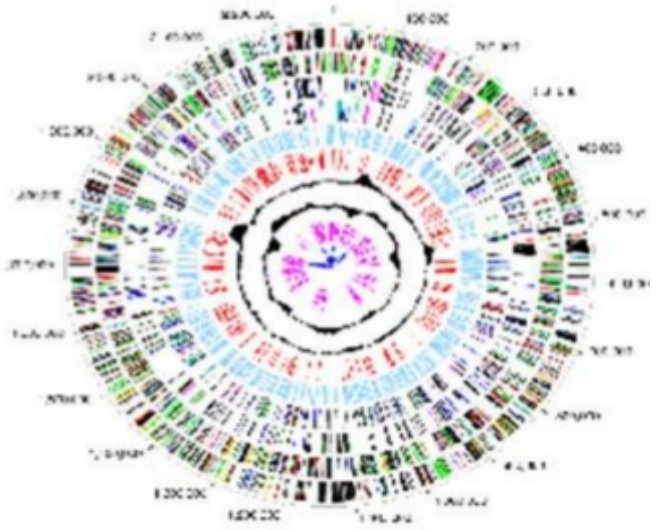


http://www.health.gov.au/internet/main/publishing.nsf/Content/5FEABC4B495BDEC1CA25807D001327FA/$File/19-June-2017-IMD-Surveillance-report.pdf

Meningococcal B

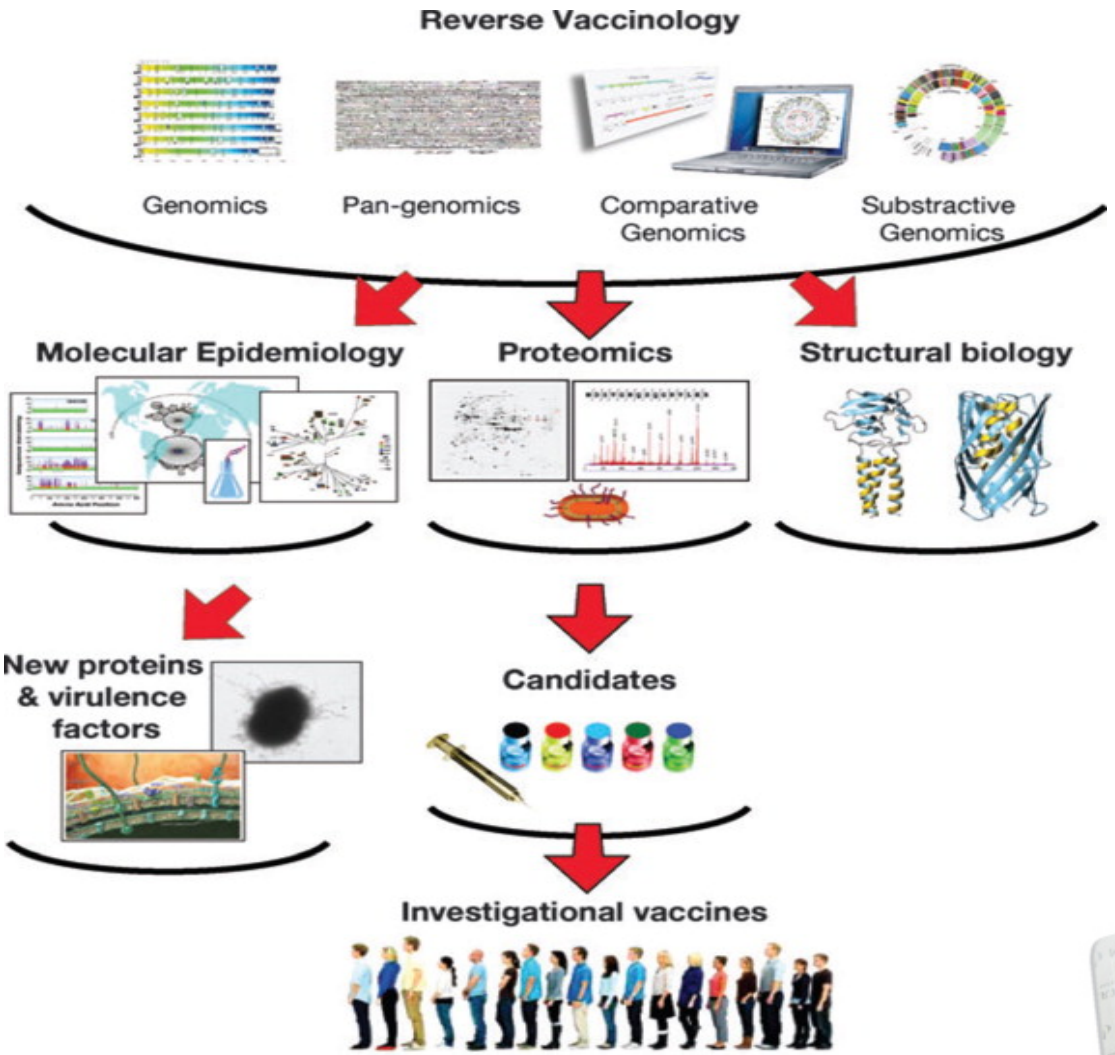
Reverse vaccinology

- Genome of serogroup B strain used to identify vaccine candidates
- 350 candidate antigens expressed
- Identified 7 proteins; surface exposed, conserved, induce bactericidal antibody response



NSW GOVERNMENT

Reverse Vaccinology



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New funding Bexsero Aboriginal children – details to follow when program announced

PBAC recommends listing of meningococcal B vaccine on NIP for at risk groups

7 January 2020

The recommendations from the November 2019 Pharmaceutical Benefits Advisory Committee (PBAC) meeting are now available which includes the PBAC recommendation for the listing of multicomponent meningococcal group B vaccine (4CMenB, Bexsero®)

The PBAC recommended the listing of multicomponent meningococcal group B vaccine (4CMenB, Bexsero®), on the NIP, for the prevention of invasive meningococcal disease (IMD) in Aboriginal and Torres Strait Islander children and the implementation of a catch-up program for Aboriginal and Torres Strait Islander children up to 2 years of age.

The PBAC also considered 4CMenB was likely to be cost-effective in children and adults with medical conditions associated with increased risk of IMD (specifically, people with asplenia and hyposplenia, complement deficiency and those undergoing treatment with eculizumab) and recommended listing on the NIP for routine vaccination of this population.

The PBAC **did not recommend** listing for a broader population of infants or for adolescents due to the remaining uncertainties regarding the magnitude of clinical effectiveness of 4CMenB, and the lack of any herd protective effects, which inform the cost effectiveness.

The PBAC recommendations are available here (detailed under positive recommendations).

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Pneumococcal vaccine and coronavirus (COVID-19)

- Pneumococcal vaccines (Pneumovax 23 and Prevenar 13) protect against disease such as pneumonia caused specifically by the bacterium *Streptococcus pneumoniae*, or pneumococcus
- **Pneumococcal vaccines will not provide protection against the novel coronavirus infection**.
- Restrictions have been placed on orders

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Draft changes

Summary of revised recommendations

People with medical risk factors

- Children diagnosed with certain risk conditions at ≤12 months of age are recommended to receive 4 doses of 13vPCV and 2 doses of 23vPPV
- Children and adolescents aged >12 months to <18 years with newly identified risk conditions are recommended to receive 1 dose of 13vPCV and 2 doses of 23vPPV
- Adults of any age ≥18 years with newly identified risk conditions are recommended to receive 1 dose of 13vPCV and 2 doses of 23vPPV

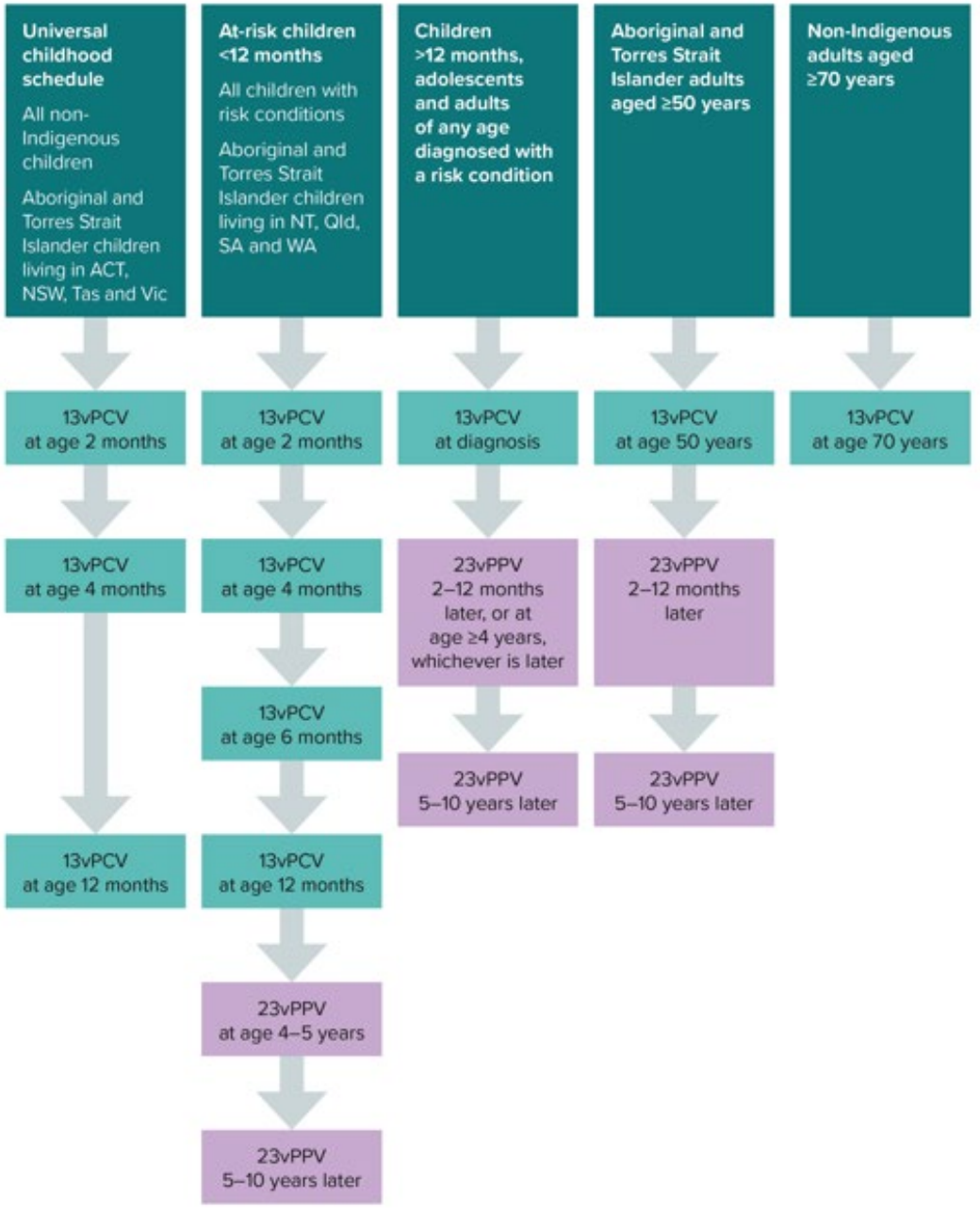
Aboriginal and Torres Strait Islander people

- Aboriginal and Torres Strait Islander children aged ≤5 years living in certain states and territories are recommended to receive 4 doses of 13vPCV and 2 doses of 23vPPV
- Aboriginal and Torres Strait Islander adults aged ≥50 years without conditions associated with an increased risk of pneumococcal disease are recommended to receive 1 dose of 13vPCV and 2 doses of 23vPPV

Healthy non-Indigenous adults

- Non-Indigenous adults aged ≥70 years without conditions associated with an increased risk of pneumococcal disease are recommended to receive 1 dose of 13vPCV

igure 1 Summary of revised recommendations for pneumococcal vaccinatio



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New list of risk conditions

The following list of conditions associated with an increased risk of invasive pneumococcal disease applies to all recommendations that are based on these risk factors.

List. Risk conditions for invasive pneumococcal disease

Children and adults with these risk conditions may be at increased risk of pneumococcal disease and may benefit from additional doses of pneumococcal vaccine.

Many children and adults with these risk conditions are eligible for funded doses of 13vPCV (13-valent pneumococcal conjugate vaccine) and 23vPPV (23-valent pneumococcal polysaccharide vaccine) under the National Immunisation Program (NIP). However, some groups are not eligible to receive funded vaccine doses because the incidence of disease is not sufficient to meet cost-effectiveness thresholds.

Vaccine doses for people with the risk conditions in this list are funded under the NIP unless otherwise noted.

- Previous episode of invasive pneumococcal disease
- Functional or anatomical asplenia, including
  - sickle cell disease or other haemoglobinopathies
  - congenital or acquired asplenia (for example, splenectomy) or hyposplenia
- Immunocompromising conditions, including
  - congenital or acquired immune deficiency, including symptomatic IgG subclass or isolated IgA deficiency
  - haematological malignancies
  - solid organ transplant
  - haematopoietic stem cell transplant
  - HIV infection
  - immunosuppressive therapy, where sufficient immune reconstitution for vaccine response is expected; this includes those with underlying conditions requiring but not yet receiving immunosuppressive therapy[a]
  - non-haematological malignancies receiving chemotherapy or radiotherapy (currently or anticipated)[a]
- Chronic renal disease
  - relapsing or persistent nephrotic syndrome
  - chronic renal impairment – eGFR <30 mL/min (stage 4 disease)[b]
- Cardiac disease, including
  - congenital heart disease[c]
  - coronary artery disease[c]
  - heart failure[c]
- Children born less than 28 weeks gestation[c]
- Trisomy 21[c]
- Chronic liver disease, including
  - chronic hepatitis[a]
  - cirrhosis[a]
  - biliary atresia[a]
- Diabetes[a]
- Smoking (current or in the immediate past)[a]
- Harmful use of alcohol[a]

a Not funded under the NIP

b Funded under the NIP for eGFR <15 mL/min only (including patients on dialysis)

c Funded under the NIP for children <5 years only

Provide vaccines

Samoa pop 200,000

Sept – Dec 2019

5,700 cases measles

61 deaths < 4 years

Earth pop 7.8 Billion

Jan – March 2020

470,973 cases Covid19

One Death < 9 years

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National HPV Vaccination Program

- 4vHPV vaccine 3 dose course prevents infection and disease (CIN, cervical, anogenital cancers and genital warts) due to HPV types 16/18/6/11
- 2007-2009: catch up females aged 12-26
- 2009-present: routine school based vax girls (1st yr high school – usual age 12-13)
- 2013-2014: catch up program males at school age 12-15 (+ some GP delivery)
- 2015: routine school based vax boys and girls (1st yr high school – usual age 12-13)

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Nine valent HPV vaccine

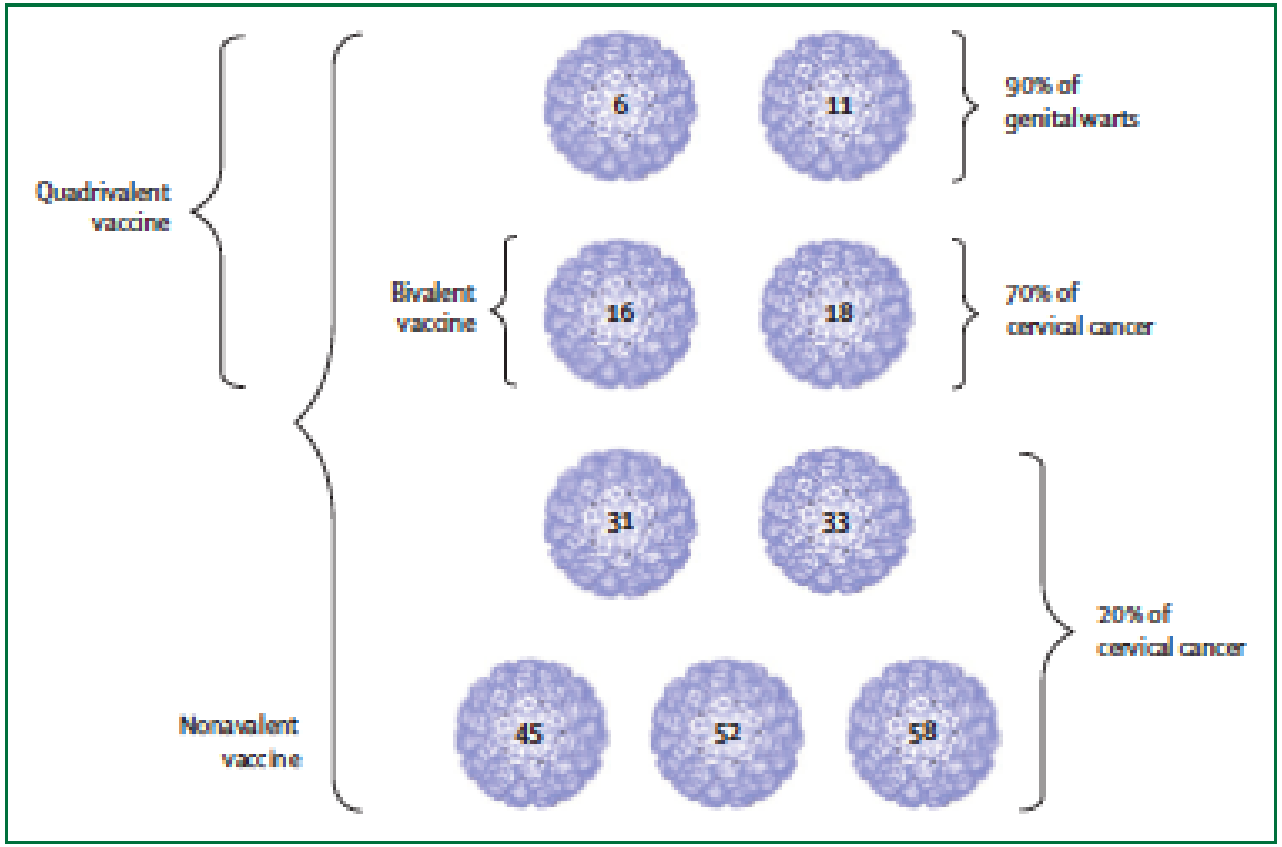

Figure 2: HPV VLP types in the nonavalent VLP vaccine
VLPs in the bivalent, quadravalent, and the nonavalent vaccines are shown with the proportion of neoplasistic disease attributed to each group. HPV=human papillomavirus. VLP=virus-like particle.

Schiller & Muller. *Next generation prophylactic human papillomavirus vaccines*. Lancet Oncol. 2015 May;16(5):e217 - e225

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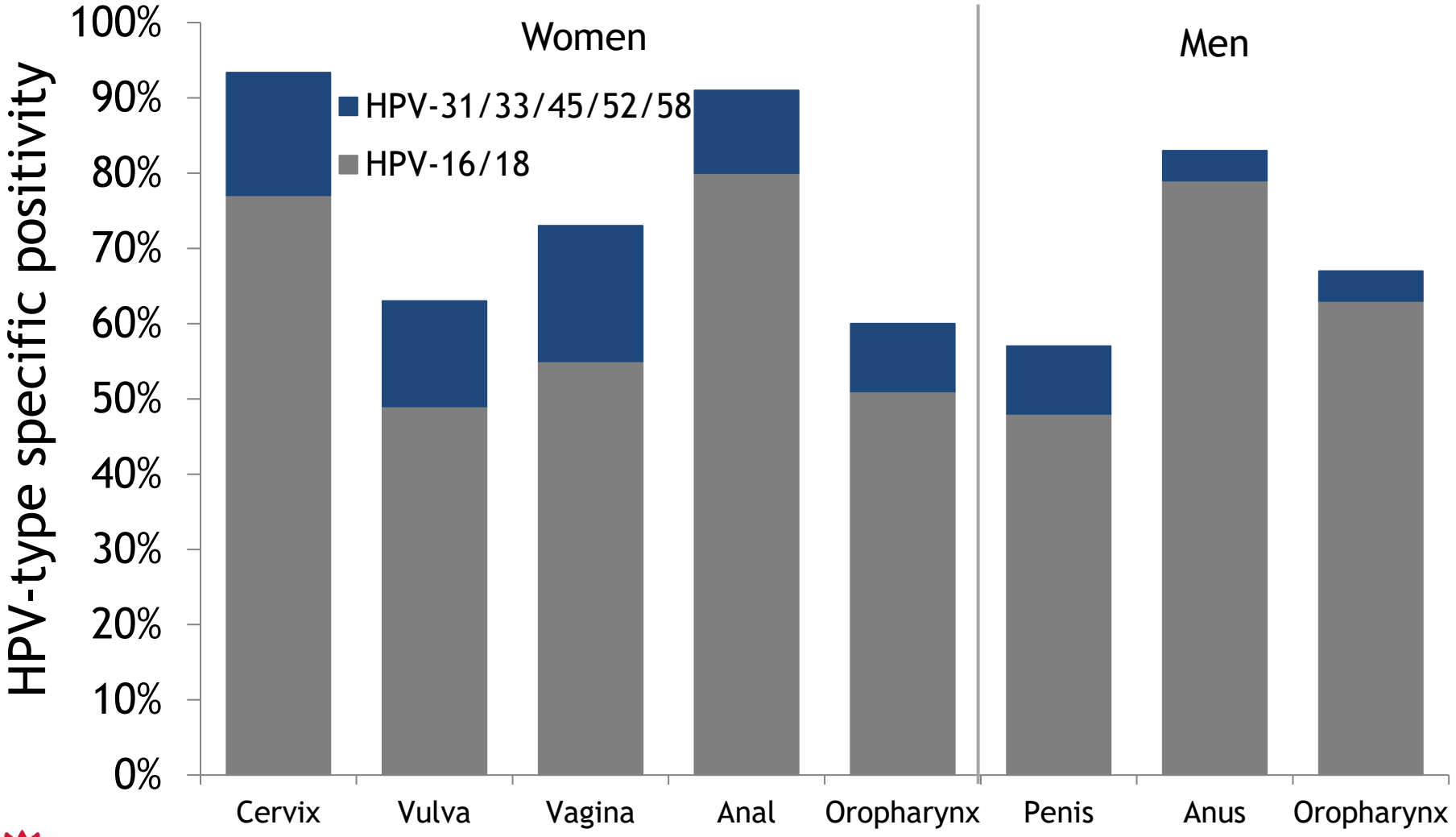
4- and 9-valent HPV vaccine

Slide courtesy of Marc Brisson

Potential for cancer prevention



(W) Saraiya, JNCI 2015

Why vaccinate when young….
(Petersen et al, 2017)

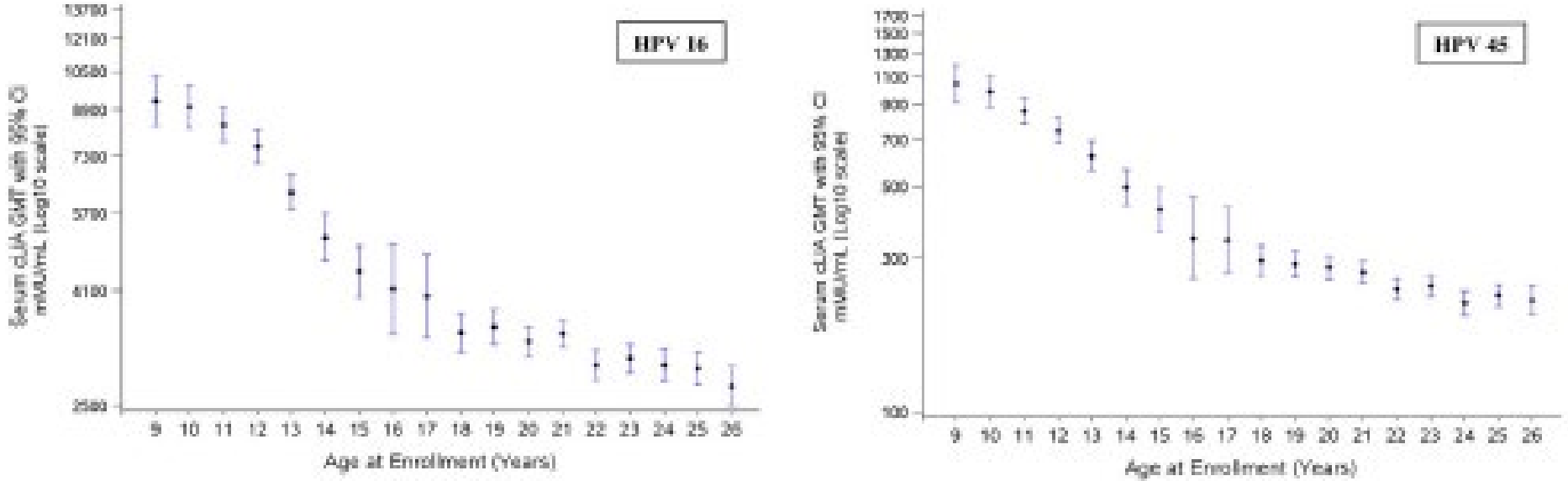


Fig. 1. Plots of month 7 anti-HPV geometric mean titers (GMTs) responses in females to component human papillomavirus (HPV) vaccine types, by age at enrollment. GMTs with associated 95% confidence intervals are presented for the per-protocol immunogenicity population. cLIA, competitive Luminex-based immunoassay; mMU, milli-Merck units.

Papillomavirus Research 3 (2017) 105–115

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Men B Vaccines

MAY 2018: WHO DIRECTOR-GENERAL'S CALL TO ACTION TO ELIMINATE CERVICAL CANCER

World Health Organization · UN WOMEN · unicef · UNFPA · UNAIDS · IAEA · International Agency for Research on Cancer · World Health Organization · UNODC · Unitaid · The Global Fund · Gavi · Clinton Health Access Initiative · UICC · GHO · unfm · NYU Langone Health · World Health Organization

JAN 2019: 144TH WHO EXECUTIVE BOARD

More than 70 countries supported the decision for WHO secretariat to develop a:

Global Strategy towards the Elimination of Cervical Cancer

Photo credit: Chris Black

World Health Organization

VCS Foundation · VCS Pathology · VCS Digital Health · VCS Population Health · compass · C4

VCS Population Health
vcs.org.au/population-health

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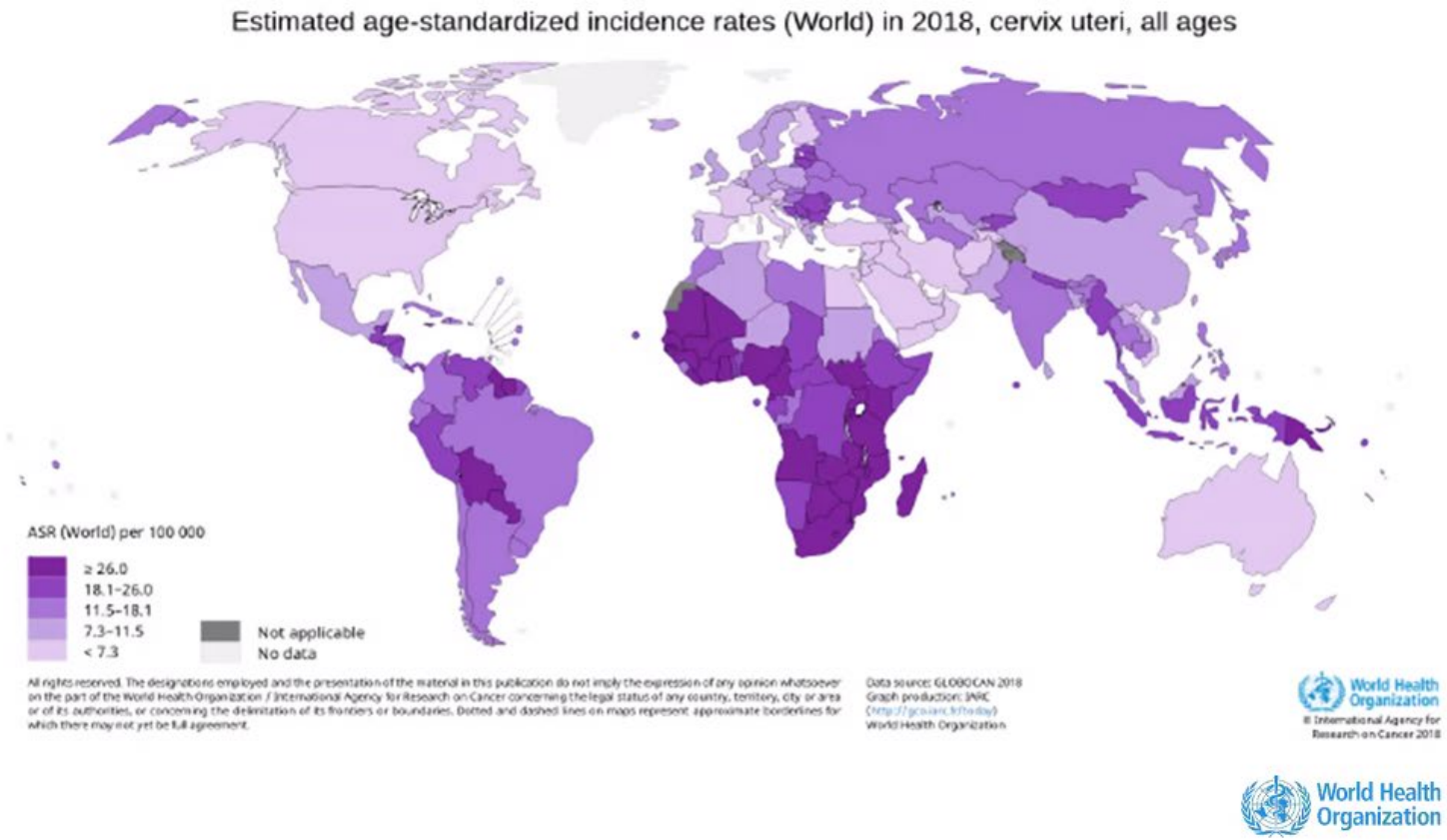
GROWING INEQUITIES AND PUBLIC HEALTH THREAT OF CERVICAL CANCER (GLOBOCAN 2018)



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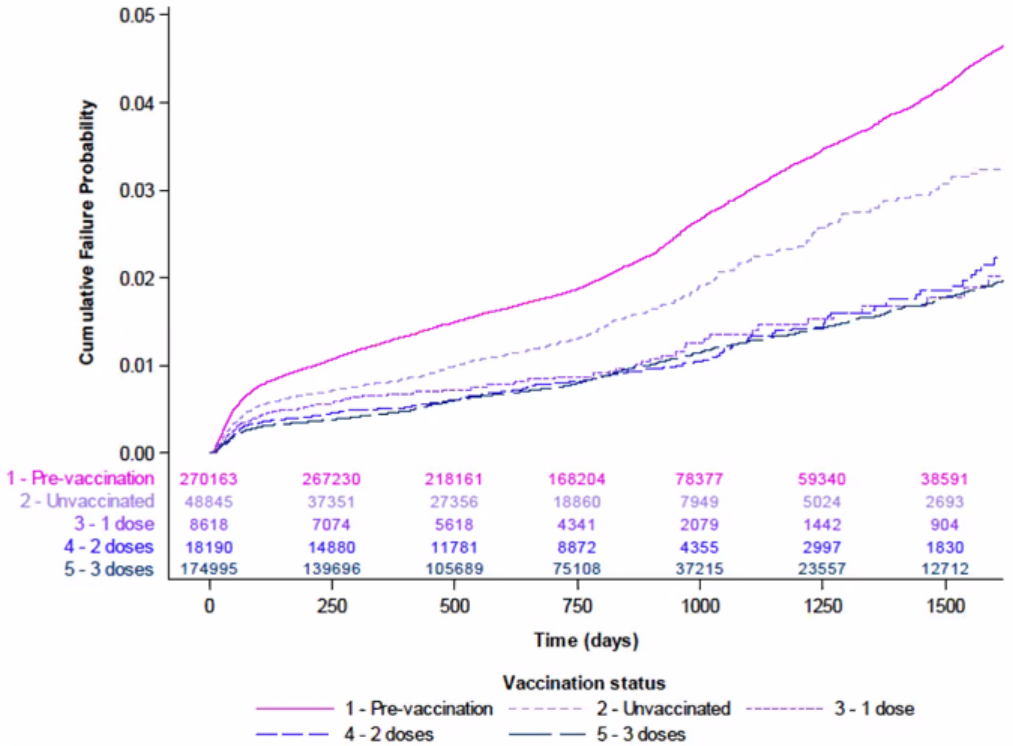
VCS Population Health

Brotherton et al, Papillomavirus Research, in press

Cumulative failure probability plot for CIN2/AIS+ among 270,163 women screening prior to vaccine availability (2000-2007) and 250,648 screening women eligible for quadrivalent HPV vaccine at age 15 or under (2007-2014) by final dose status, Australia



Adjusted hazard ratio vs three doses

one dose
1.01
(95%CI 0.81–1.26)

two doses
1.00
(95%CI 0.85–1.17)

VCS Foundation | VCS Pathology | VCS Digital Health | VCS Population Health | compass | C4

VCS Population Health
vcs.org.au/population-health

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Australian Government
Department of Health

UNDER 20 YEARS OF AGE?

CATCH UP ON FREE VACCINES NOW

YOU MAY NEED VACCINATIONS TO TRAVEL OVERSEAS, WORK AS A HEALTH PROFESSIONAL OR ATTEND SOME TERTIARY-LEVEL COURSES

UNSURE IF YOU'RE UP TO DATE WITH YOUR CHILDHOOD VACCINES?

TALK TO YOUR GP OR VACCINATION PROVIDER

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How common is Zoster ?

VZV seroprevalence:

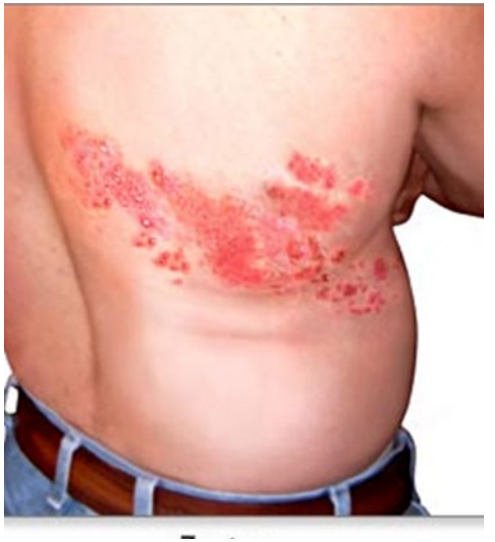
>97% in those aged >35 years – who is less likely to be seropositive?

HZ

- **Over 150,000 new cases annually in Australia**
- **70% of all HZ cases are in ≥50 yrs of age**
- **Cumulative lifetime risk of HZ ~20%**
- **By age 85 – 50% chance of getting zoster**
- **Recurrence = rare (1 – 5%)**
- **Only ~1 - 3% of cases hospitalised**

PHN

- **15% of all HZ cases aged > 50 years of age**
- **25% of all HZ cases aged > 80 years of age**



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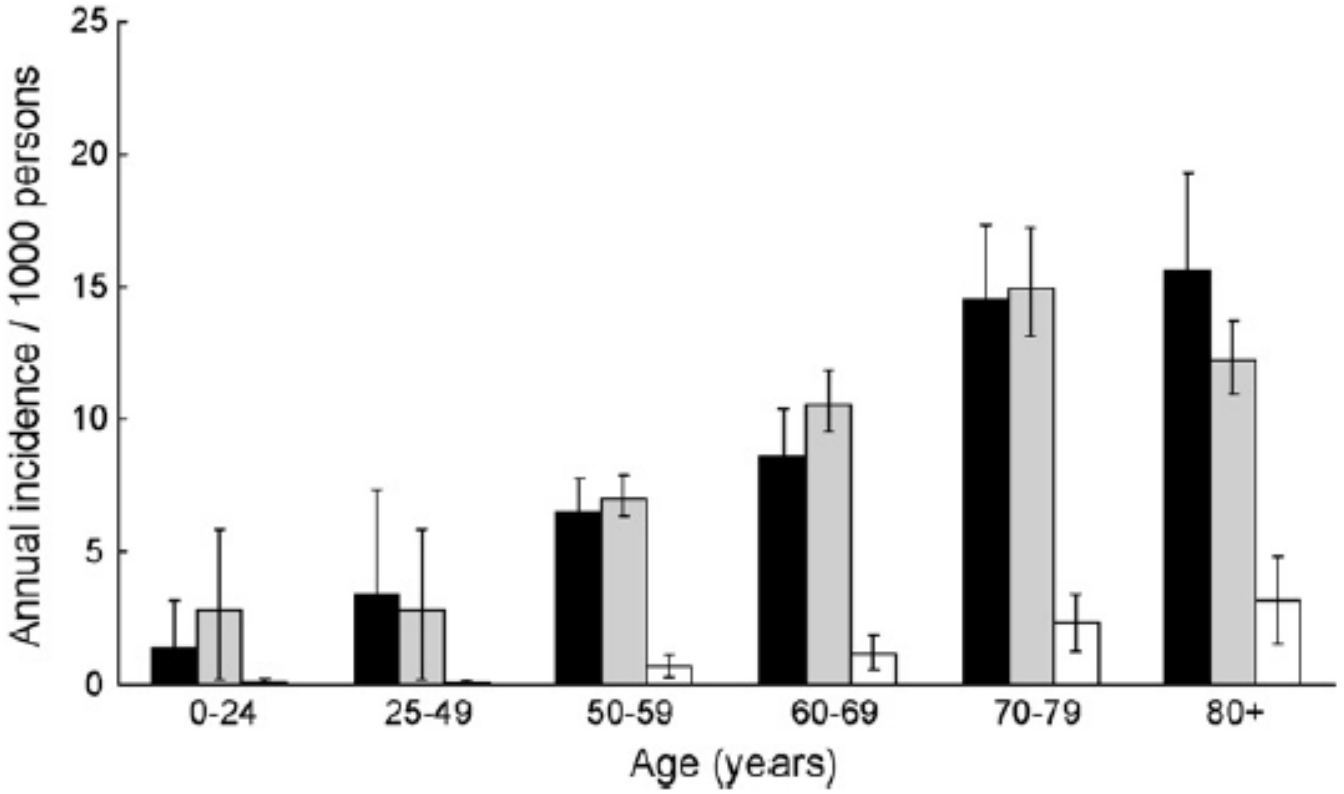
Epidemiology of Zoster and PHN in Australia



Stein AC, *Vaccine* 2009

Vaccine recommendations

- **Patients 70 – 79 years – National Immunisation Program**
  - Consider for all*, particularly those with splenectomy, diabetes, inflammatory bowel disease, rheumatoid arthritis, psoriasis
- Patients 50 – 59 years (private script)
  - Administer if interested*
- Patients 60 – 69 years (private script)
  - Recommended - likely to have population level benefit*
- Patients 80 years and over (private script)
  - Individual benefit but lower efficacy, likely to wane rapidly*

*** Unless severe immunocompromise**

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UK Published Case Report_Scottish gentleman

- 79 yo with history of CLL
- Vaccinated with Zostavax
- 2 weeks later developed flu-like symptoms, fever and then widespread vesicular rash
- Delay in recognition of illness as potentially vaccine associated
- Commenced on IV aciclovir
- Day 5 developed respiratory and renal failure, ICU admission
- Death from multi-organ failure on Day 16

- Oka vaccine strain varicella-zoster virus detected in vesicle fluid

Patient had not received immunosuppressive agents for 6 months prior to vaccination !!

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Safety information

- Reporting problems & complaints
- Alerts
  - Current year alerts
  - **All alerts**
- Recalls
- Early warning system
- Safety information & education

Zostavax vaccine

Safety advisory – not to be used in patients with compromised immune function

7 March 2017

The TGA has received a report of a death occurring in a person with pre-existing compromised immune function after receiving Zostavax – a live, attenuated varicella-zoster virus vaccine that is used to prevent shingles and prevention/treatment of nerve pain associated with the virus.

Zostavax should not be used in people who are immunocompromised, as this is associated with a risk of mild to serious complications (including death) from infection with the vaccine virus.

Zostavax is used for:

- prevention of herpes zoster (shingles) in people aged 50 years and older
- prevention of post-herpetic neuralgia (nerve pain due to damage caused by the varicella-zoster virus) and for reduction of acute and chronic zoster-associated pain in individuals 60 years of age and older.

Zostavax was included in the National Immunisation Program on 1 November 2016 for the prevention of herpes zoster in patients 70 years of age. A five-year catch-up program for people aged 71-79 years is also underway.

Further information about the use of Zostavax among immunocompromised patients has recently been distributed to general practitioners and general practice nurses via state/territory health departments.

DO NOT give to persons with Severe Immunocompromise

- **high-dose systemic immunosuppressive therapy**, such as chemotherapy, radiation therapy, oral corticosteroids or disease modifying anti-rheumatic drugs (DMARDs);

- **suffering from malignant conditions** of the reticuloendothelial system (such as lymphoma, leukaemia, Hodgkin's disease), even if not on active treatment (eg CLL);

- **AIDS or symptomatic HIV infection**;

- **solid organ or bone marrow transplants** (within 2 years of transplantation) or transplant recipients who are still taking immunosuppressive drugs

- **similar immunocompromise** due to a disease or treatment

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Can patients receiving disease-modifying anti-rheumatic drugs (DMARDs) be vaccinated?

Some elderly patients are regularly taking corticosteroids and/or DMARDs. These include patients with rheumatoid arthritis, inflammatory bowel disease, dermatologic conditions, renal disease and other autoimmune or rare inflammatory conditions. Ensure that a **detailed medication history is obtained prior to vaccination**. As shown in the table below, zoster vaccination is usually contraindicated. However, patients taking low doses of specific DMARDs can be safely vaccinated.

Mechanism of action	Examples*†	Safe dose‡	Comments
Anti-TNF	Etanercept Infliximab	NONE	Vaccinate 1 month before treatment initiation **OR** 12 months after treatment cessation
IL-1 inhibition	Anakinra	NONE	
Costimulation blockade	Abatacept	NONE	
B-cell depletion/inhibition	Rituximab	NONE	
Immunomodulators (antimetabolites)	Azathioprine 6-Mercaptopurine Methotrexate	≤3.0 mg/kg/day ≤1.5 mg/kg/day ≤0.4 mg/kg/week	If on higher dose, vaccinate 1 month before treatment initiation **OR** 3 months after treatment cessation
Corticosteroids	Prednisone	<20 mg/day	If ≥20 mg/day for <14 days, vaccinate 1 month before treatment initiation **OR** any time after treatment cessation If ≥20 mg/day for ≥14 days, vaccinate 1 month before treatment initiation **OR** 1 month after treatment cessation
T-cell activation/inhibition	Tacrolimus Cyclosporine	NONE	Vaccinate 1 month before treatment initiation **OR** 3 months after treatment cessation
Others	Cyclophosphamide Mycophenolate	NONE	

* **NOTE:** This is not a complete list of all licensed biologics, or medications within each class, but serves as a guide only.
† Denosumab (Prolia, Amgen Australia Pty Ltd) has been removed from this table as there is currently not enough evidence to suggest it is a contraindication to receiving Zoster vaccine.
‡ Refer to *The Australian Immunisation Handbook* 10th edition, Chapters 3.3.3 and 4.24.

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Zoster vaccine

Resources to assist with decision making

- NCIRS factsheet

http://www.ncirs.org.au/sites/default/files/2018-12/Zoster%20vaccines-FAQ-April%202018.pdf

- NCIRS FAQs

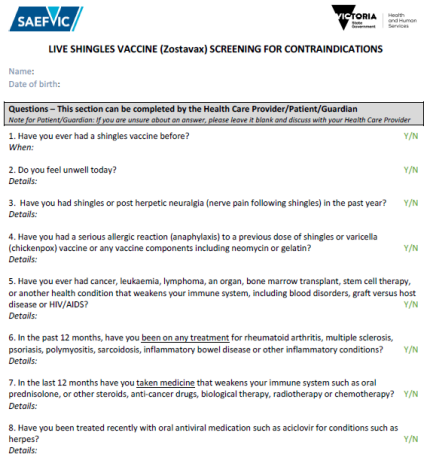
http://ncirs.org.au/ncirs-fact-sheets-faqs/zoster-vaccine-faqs

- Zostavax® GP Decision Aid (Vic Health)

https://mvec.mcri.edu.au/wp-content/uploads/2017/08/Zostavax-GP-Decision-Aid.pdf

An additional question to ask that is not in the handbook.

In the past 12 months, have you been on any treatment for rheumatoid arthritis, multiple sclerosis, psoriasis, polymyositis, sarcoidosis, inflammatory bowel disease or other inflammatory conditions?



SAEFVIC

VICTORIA State Government | Health and Human Services

LIVE SHINGLES VACCINE (Zostavax) SCREENING FOR CONTRAINDICATIONS

Name:
Date of birth:

Questions – This section can be completed by the Health Care Provider/Patient/Guardian
Note for Patient/Guardian: If you are unsure about an answer, please leave it blank and discuss with your Health Care Provider

1. Have you ever had a shingles vaccine before? Y/N
When:

2. Do you feel unwell today? Y/N
Details:

3. Have you had shingles or post herpetic neuralgia (nerve pain following shingles) in the past year? Y/N
Details:

4. Have you had a serious allergic reaction (anaphylaxis) to a previous dose of shingles or varicella (chickenpox) vaccine or any vaccine components including neomycin or gelatin? Y/N
Details:

5. Have you ever had cancer, leukaemia, lymphoma, an organ, bone marrow transplant, stem cell therapy, or another health condition that weakens your immune system, including blood disorders, graft versus host disease or HIV/AIDS? Y/N
Details:

6. In the past 12 months, have you been on any treatment for rheumatoid arthritis, multiple sclerosis, psoriasis, polymyositis, sarcoidosis, inflammatory bowel disease or other inflammatory conditions? Y/N
Details:

7. In the last 12 months have you taken medicine that weakens your immune system such as oral prednisolone, or other steroids, anti-cancer drugs, biological therapy, radiotherapy or chemotherapy? Y/N
Details:

8. Have you been treated recently with oral antiviral medication such as aciclovir for conditions such as herpes? Y/N
Details:

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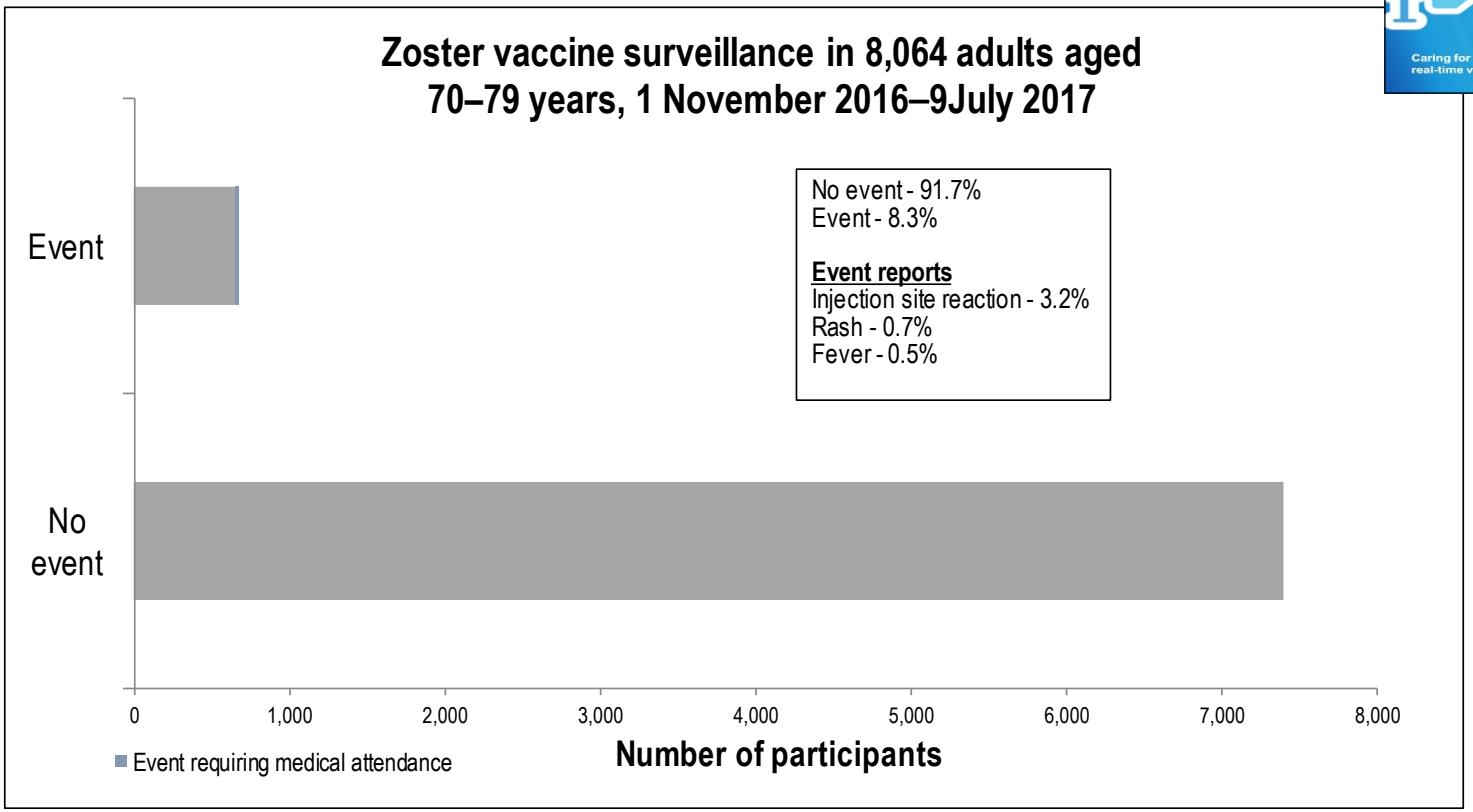
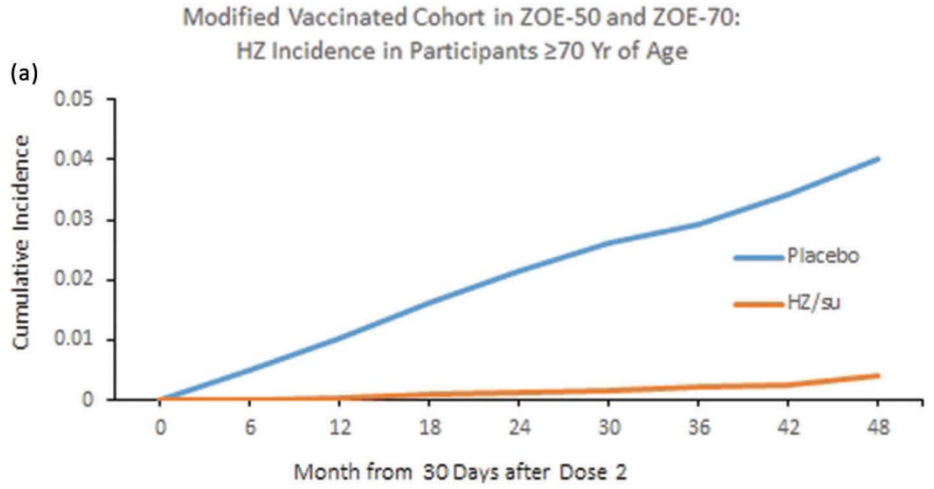
Zoster vaccine surveillance in 8,064 adults aged 70–79 years, 1 November 2016–9July 2017

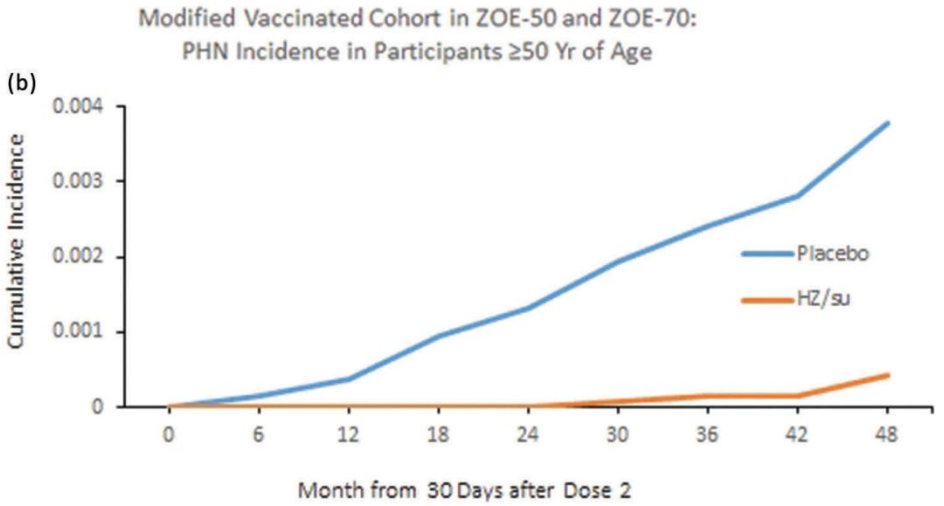


HZ vaccine (Shingrix, GSK)
NOT YET REGISTERED

- Non-live recombinant subunit (glycoprotein E) and a strong adjuvant (AS01)
- >90% efficacy HZ
- 85% + efficacy PHN
- Maintained in older persons
- Immunogenic in immunocompromised

(phase III efficacy study awaited)





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Immunisation in Aged Care Facilities FAQs

Our vaccines have arrived. When do we start vaccinating our residents?

✓ Now! Administer influenza vaccines as soon as possible after they arrive at your facility.

The fridge at our facility is normally empty. What cold chain management am I required to do to in an ACF for the vaccines in my fridge?

✓ Fridges in ACF's are required to be monitored twice daily using a min/max thermometer for at least a week prior to vaccine storage then twice day until no vaccines are left in the fridge.

How is this year's over 65's vaccine different from last year's?

✓ 2020 over 65 vaccine is an enhanced (adjuvanted) Quadrivalent vaccine.

Will a dose of Pneumovax 23 help protect from Covid-19?

✓ There is currently no evidence to suggest that pneumococcal vaccine provides protection against COVID-19 pneumonia.

✓ Continue to give Pneumovax 23 for whom it is indicated.

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FAQ's continued-

Does my ACF have to provide Flu vaccines for the staff?

- ✓ All Aged Care providers are mandated to provide Influenza vaccines for their staff

Can we give them now or wait until April?

Staff should be vaccinated as soon as vaccines are available.

Can they have it elsewhere like at the Pharmacy?

- ✓ Yes, but a record must be provided to your ACF.

How do I respond to people who say that they don't want the vaccine because it just doesn't work very well?'

- ✓ As the vaccine is less effective as people age it is even more important to vaccinate the people providing care for best protection of the residents.

What's the best thing I can do to help protect residents from Covid-19?

- ✓ Wash your hands! Get them and yourselves vaccinated for Influenza. People with concurrent respiratory disease are for more vunerable to COVID-19.
- ✓ Use PPE appropriately.

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How to access PPE for Aged Care sector

Aged care providers who require Personal Protective Equipment (PPE) email their request to agedcarecovidppe@health.gov.au

please do not approach Primary Health Networks.

Requests:

- Are triaged by the Department of Health - priority given to facilities, programs and workers where there has been a confirmed case of COVID-19.
- Can be made by aged care services and workers providing aged care support in the community
- **Should include:**
  - Facility, program or service name
  - Whether you have a confirmed COVID-19 case at facility
  - Type and quantity of PPE required – note only masks available at present
  - Details of other suppliers from whom you have attempted to source PPE

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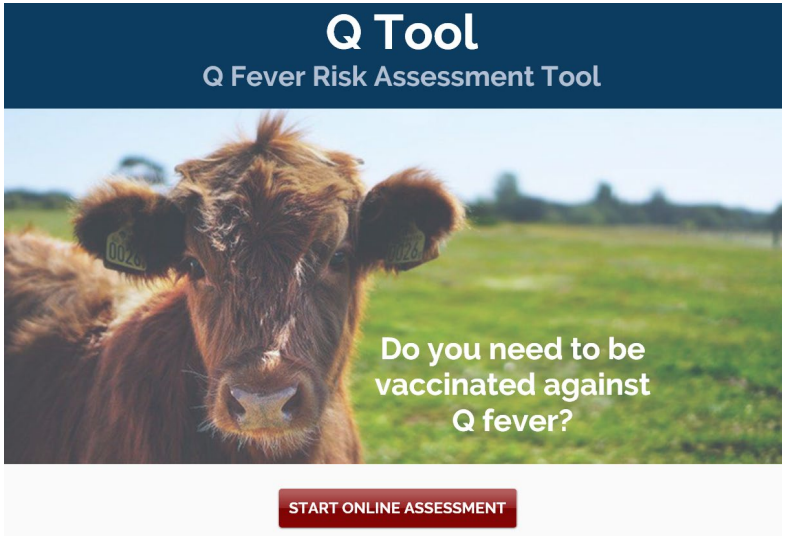
This process also applies if facility is experiencing an Influenza outbreak.

Q fever risk self assessment tool

- https://www.qfevertool.com/
- Q fever Risk Assessment Tool ("Q Tool"), a simple assessment to see if your lifestyle puts you at risk of Q fever and whether vaccination is indicated.
- 9 questions takes a minute
- Consider your current situation and any future work plans or activities
- At the end of the survey, you will be given an indication of your personal Q fever risk which you can print out and take to your GP for further discussion. At the end of the Q Tool are links to Q fever information.



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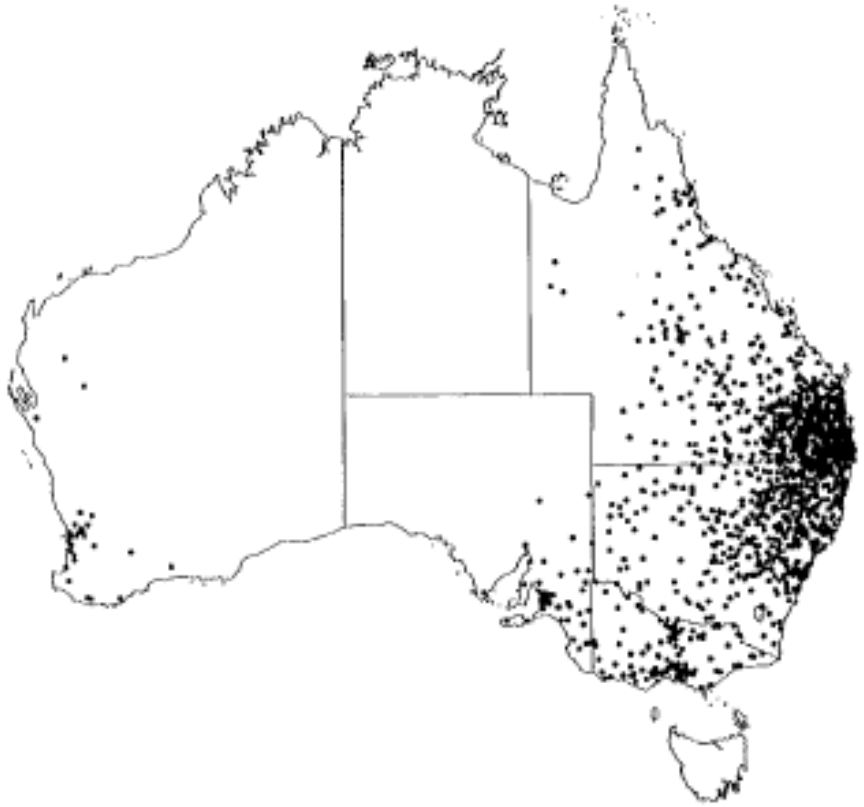
Q Fever



NSW GOVERNMENT

Norwegian woman dies from rabies after Philippines puppy bite

11 May 2019 Share

Birgitte Kallestad's family are calling on Norway to make rabies vaccinations compulsory for citizens travelling to the Philippines

A Norwegian woman has died after contracting rabies from a stray puppy in the Philippines.

Birgitte Kallestad, 24, was on holiday with friends when they found the puppy on a street, her family said in a statement.

The puppy is thought to have infected her when it bit her after they took it back to their resort.

She fell ill soon after returning to Norway, and died on Monday at the hospital where she worked.

It is the first rabies-related death in Norway for more than 200 years.

Vaccine Development

Exploratory: This research-intensive phase of the vaccine development process is designed to identify "natural or synthetic antigens that might help prevent or treat a disease." Antigens might include weakened strains of a particular virus.

Pre-clinical: During this phase, researchers — usually in private industry — use tissue-culture or cell-culture systems and animal testing to determine whether the candidate vaccine will produce immunity. Many candidate vaccines don't move on to the next stage of development because they fail to produce that immunity or prove harmful to test subjects.

Clinical development: At this point, a sponsor, usually a private company, submits an application for an Investigational New Drug (IND) to the U.S. Food and Drug Administration (FDA). This summarizes findings to date and describes how the drug will be tested and created. An institution that will host the clinical trial holds a review board for approval of the application. The FDA has 30 days to approve the application. Once the proposal has been approved, the vaccine must pass three trial stages of human testing:

- **Phase I** administers the candidate vaccine to a small group (less than 100 people) with the goal of determining whether the candidate vaccine is safe and to learn more about the responses it provokes among test subjects.
- **Phase II**, which includes hundreds of human test subjects, aims to deliver more information about safety, immunogenicity, immunization schedule and dose size.
- **Phase III**, which can include thousands or tens of thousands of test subjects, continues to measure the safety (rare side effects sometimes don't appear in smaller groups) and effectiveness of the candidate vaccine.

Vaccine Develpoment

Regulatory review and approval: If a vaccine passes through all three phases of clinical development, the vaccine developer submits a Biologics License Application (BLA) to the FDA.

Manufacturing: Major drug manufacturers provide the infrastructure, personnel and equipment necessary to create mass quantities of vaccines. They also reap the profits of successful or widely distributed drugs.

Quality control: The approval and distribution is far from the end of the line. Stakeholders must adhere to procedures that allow them to track whether a vaccine is performing as anticipated. Multiple systems — including Phase IV trials (optional studies that can be conducted following the release of a vaccine), the Vaccine Adverse Event Reporting System (VAERS) and the Vaccine Safety Datalink — are designed to monitor the performance, safety and effectiveness of an approved vaccine.

These processes, however, can't happen without the skills and input of numerous stakeholders, from lab researchers to policymakers to medical professionals.

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Coalition for Epidemic Preparedness Innovations (CEPI)

Monday, March 16, 2020

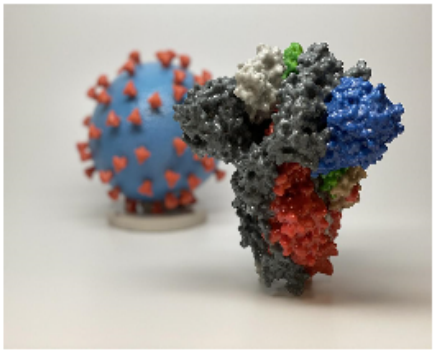
NIH clinical trial of investigational vaccine for COVID-19 begins

Study enrolling Seattle-based healthy adult volunteers.

A Phase 1 clinical trial evaluating an investigational vaccine designed to protect against coronavirus disease 2019 (COVID-19) has begun at Kaiser Permanente Washington Health Research Institute (KPWHRI) in Seattle. The National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health, is funding the trial. KPWHRI is part of NIAID's Infectious Diseases Clinical Research Consortium. The open-label trial will enroll 45 healthy adult volunteers ages 18 to 55 years over approximately 6 weeks. The first participant received the investigational vaccine today.

The study is evaluating different doses of the experimental vaccine for safety and its ability to induce an immune response in participants. This is the first of multiple steps in the clinical trial process for evaluating the potential benefit of the vaccine.

The vaccine is called mRNA-1273 and was developed by NIAID scientists and their collaborators at the biotechnology company Moderna, Inc., based in Cambridge, Massachusetts. The Coalition for Epidemic Preparedness Innovations (CEPI) supported the manufacturing of the vaccine candidate for the Phase 1 clinical trial.



3D print of a spike protein of SARS-CoV-2—also known as 2019-nCoV, the virus that causes COVID-19—in front of a 3D print of a SARS-CoV-2 virus particle. The spike protein (foreground) enables the virus to enter and infect human cells. On the virus model, the virus surface (blue) is covered with spike proteins (red) that enable the virus to enter and infect human cells. For more information, visit *NIH*

"Finding a safe and effective vaccine to prevent infection with SARS-CoV-2 is an urgent public health priority," said NIAID Director Anthony S. Fauci, M.D. "This Phase 1 study, launched in record speed, is an important first step toward achieving that goal."

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Race to develop coronavirus vaccine

24 January 2020

The University of Queensland has been asked to develop a vaccine for the recent coronavirus outbreak at unprecedented speed, using new technology.

The Coalition for Epidemic Preparedness Innovations (CEPI) has requested the University use its recently developed rapid response technology to develop a new vaccine, which could be available worldwide in as little as six months.

UQ Vice-Chancellor and President Professor Peter Høj AC said the fluidity of the current outbreak represented a significant challenge to the international community.

"There is a lot that is still unknown regarding how easily the virus is able to be transmitted between humans," he said.

"Working with CEPI, The University of Queensland is using its vaccine technology to respond to this global health challenge."

NSW GOVERNMENT

https://www.nih.gov/news-events/news-releases/nih-clinical-trial-investigational-vaccine-covid-19-begins

Polio - Iron Lung

NSW GOVERNMENT

Targeting someone who cares

The murder by gunmen of a Karachi social worker is part of a deadly pattern

AMANDA HODGE
SOUTH ASIA CORRESPONDENT

ABDUL Waheed Khan knew the co-educational school and polio centre he ran in one of the most murderous corners of Karachi had put him on a collision course with the Taliban.

His tormentors had told him as much in the phone calls he had begun to receive, warning him to close the partly Rotary Australia-funded school and vaccination program.

"Every day there are killings," he told Inquirer last month as he nervously led the way up a hill overlooking the poor suburb where he had invested two decades of his life as a social worker and educator.

Khan had been an unwilling guide up the steep, rocky path to one of 13 paramilitary checkposts overlooking his community. But he had not wanted us to go alone. It was just weeks before the Pakistani elections.

"If a right-wing party comes to power then militancy will increase," he predicted. "After May 11 (election day) I think there will be more violence."

In fact it was just two days after Pakistan's polls delivered victory to two-time conservative former prime minister Nawaz Sharif — four weeks to the day after we met — that Khan, 38, was gunned down outside the gates of the Bright Education Society he founded with another social activist, Parveen Rehman.

Rehman was shot dead in her car in March as she drove home along a busy highway.

Khan's assailants — four men suspected to be members of the Pakistani Taliban — strolled up to

day afternoon and pumped five bullets into him at point-blank range. He died on the spot.

His attackers, incredibly, escaped on foot through the closely built settlement without anyone managing to identify them, while in other parts of Pakistan celebrations continued over the election of a leader who has promised to try again to negotiate with the country's Taliban militants.

Khan's school was the only one operating in the Qasba Colony and Kati Pahari areas — an extraordinarily violent neighbourhood racked by ethnic and, more recently, sectarian clashes.

A 10-day murderous rampage in mid-2011 by ethnic armed groups representing warring Urdu and Pashto-speaking political parties forced the closure of 30 schools in the area after teachers fled in terror and refused to return.

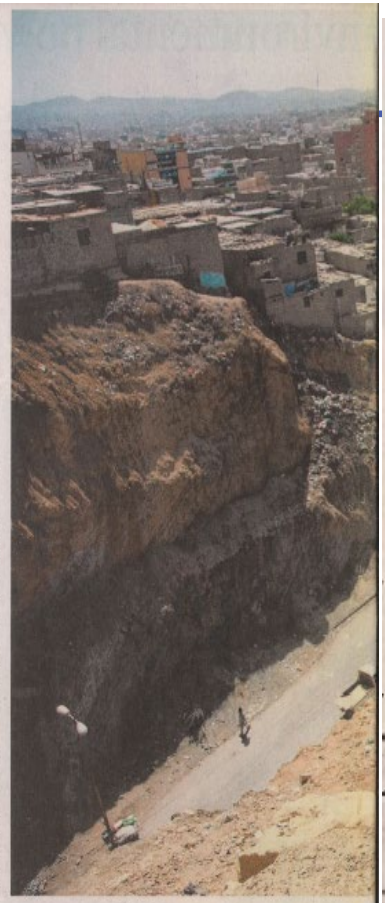
Khan's stayed open. It took boys and girls from all religions, any ethnic community.

He also operated a Rotary-funded polio centre to help immunise the millions of "missing children" from Pakistan's poorest and most transitory communities — which remain deeply suspicious of government vaccination programs, and thus help to perpetuate a preventable disease eliminated from all but three countries.

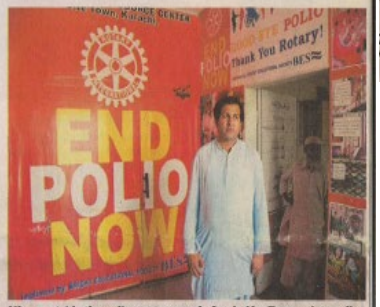
And he did it in the face of numerous threats to his life.

When Inquirer met Khan at the centre last month — the polio room decorated with posters of Australian and New Zealand Rotarians and messages of support — he said he had received "three or four threats from the Taliban" demanding he stop his work.

Though the paramilitary Rangers' presence had stemmed ethnic violence, Khan talked of a rise in common street crime, sectarian murders and the targeted killings of non-governmental organisation workers, social activists and left-leaning politicians. He fell



Abdul Waheed Khan last month on a ridge above Karachi's trouble



Khan outside the polio centre, partly funded by Rotary Australia

work will not stop," he said at the time. He was worried, of course, as anyone would be. He had a wife and three young children.

any action, just as his colleagues and friends in recent days have expressed a sense of despair, doubting his attackers will be brought to

Khan outside the polio centre, partly funded by Rotary Australia

Nigeria

Children receiving oral polio vaccine at an event inaugurating a polio vaccination campaign in Kano, Nigeria.

A woman delivering vaccines house-to-house in Sokoto, Nigeria.

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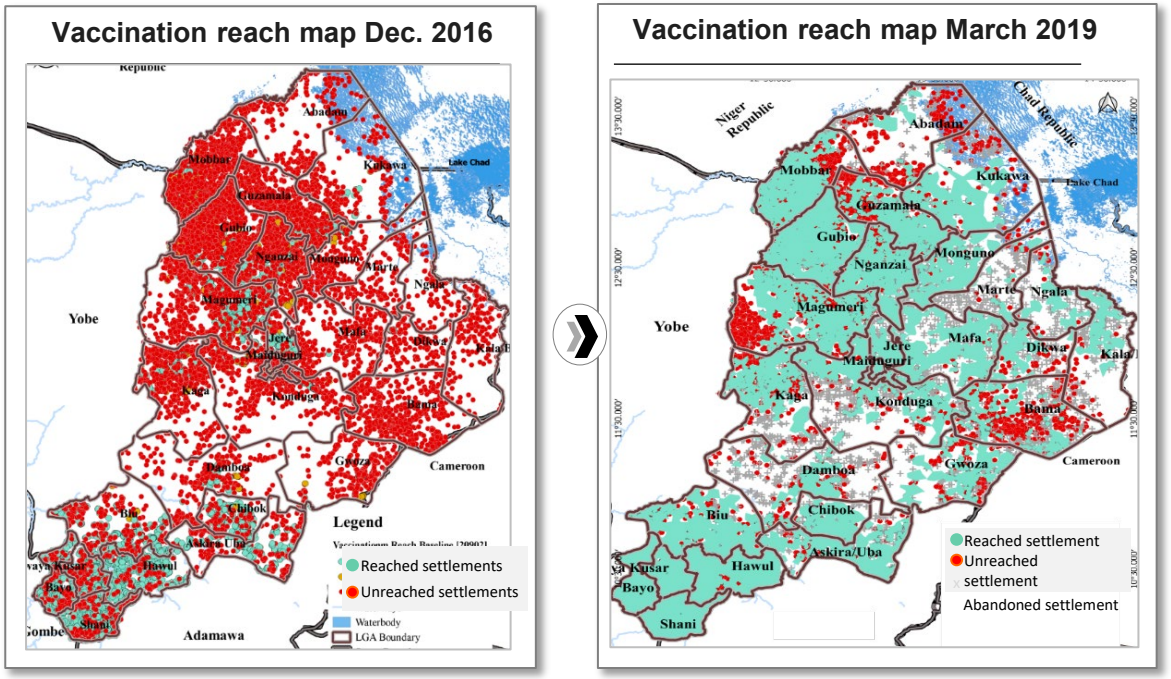
Nigeria : No WPV detected in 35 months



- Last virus 27 September 2016 in healthy child in Borno
- **August 2016, ~ 600,000 children** unreached across over 10,000 communities
- **February 2019, ~ 60,500 children** remain unreached in ~ 3,000 settlements

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Volunteer Community Mobilizers

Training

Data Management
Communication
Signs of disease

Breastfeeding
Child malnutrition
Signs of ebola
Track births & deaths

Educate girls
Routine immunisation
Breastfeeding

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Nigeria three years free from wild poliovirus

- 21 August 2019 marks three years since Nigeria last reported a case of wild poliovirus
- cautious euphoria
- Innovation, partnership and resolve
- Tens of thousands of health workers
- We commend the strong domestic and global financing
- GPEI partners: WHO, UNICEF, CDC, Rotary and the Bill & Melinda Gates Foundation

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- Thanks to
- PHN
- CC PHU
- HNE PHN
- Scientists
- Nurses & AHW’s +++++++

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